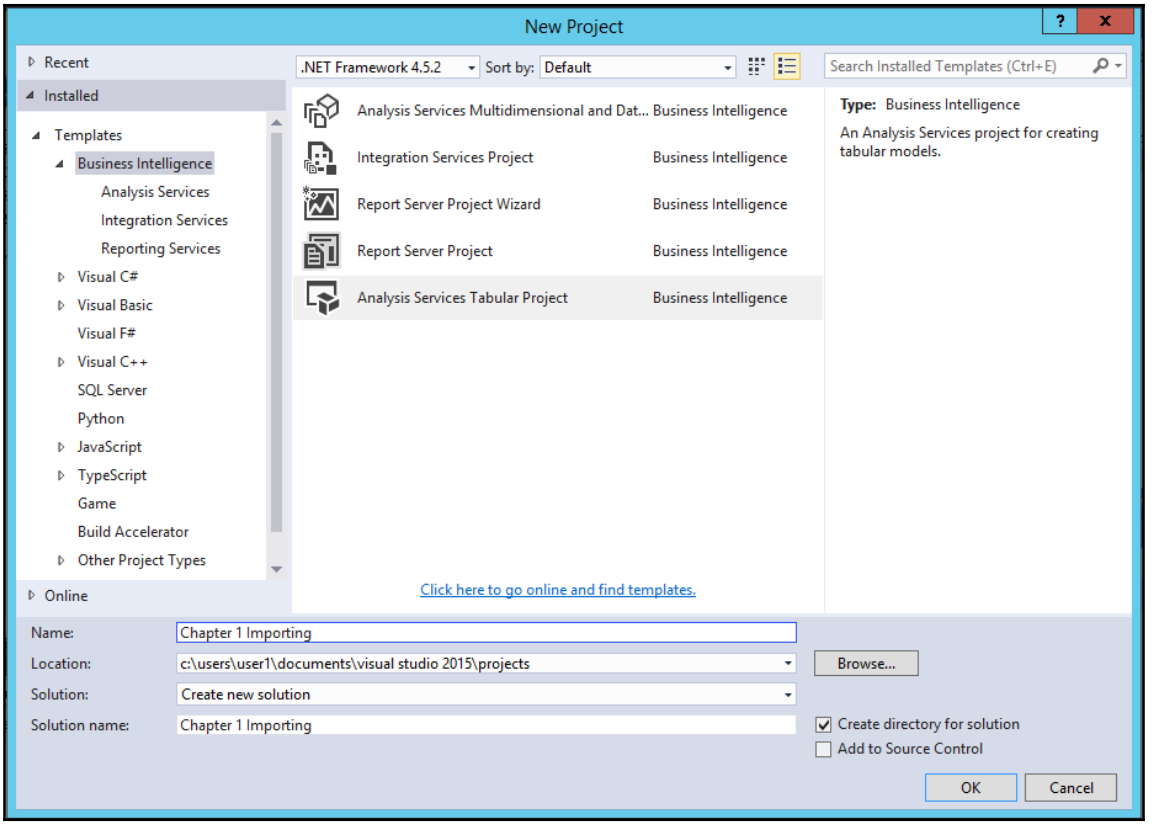
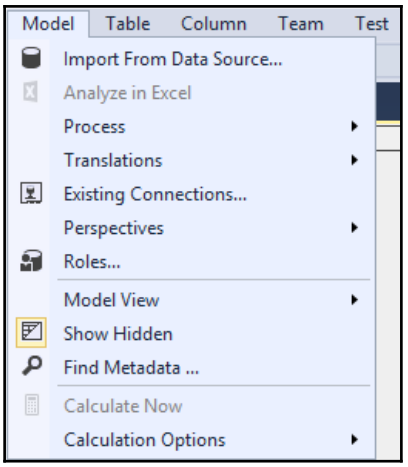
Chapter 1: Introduction to Microsoft Analysis Services Tabular Mode




Model
Table
Column
Team
Test
Import From Data Source...
Analyze in Excel
Process
Translations
Existing Connections...
Perspectives
Roles...
Model View
Show Hidden
Find Metadata ...
Calculate Now
Calculation Options

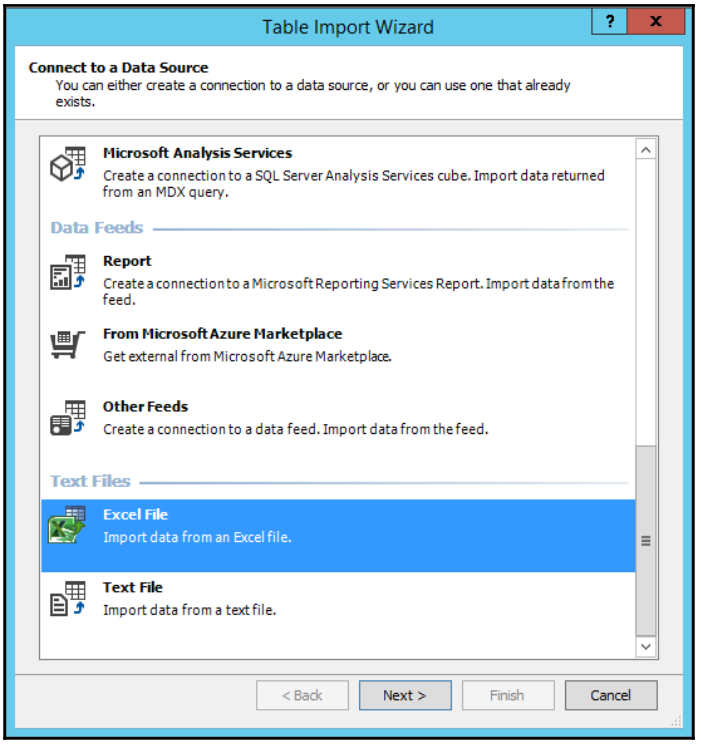


Table Import Wizard
Connect to a Data Source
You can either create a connection to a data source, or you can use one that already exists.
Microsoft Analysis Services
Create a connection to a SQL Server Analysis Services cube. Import data returned from an MDX query.
Data Feeds
Report
Create a connection to a Microsoft Reporting Services Report. Import data from the feed.
From Microsoft Azure Marketplace
Get external from Microsoft Azure Marketplace.
Other Feeds
Create a connection to a data feed. Import data from the feed.
Text Files
Excel File
Import data from an Excel file.
Text File
Import data from a text file.
< Back
Next >
Finish
Cancel

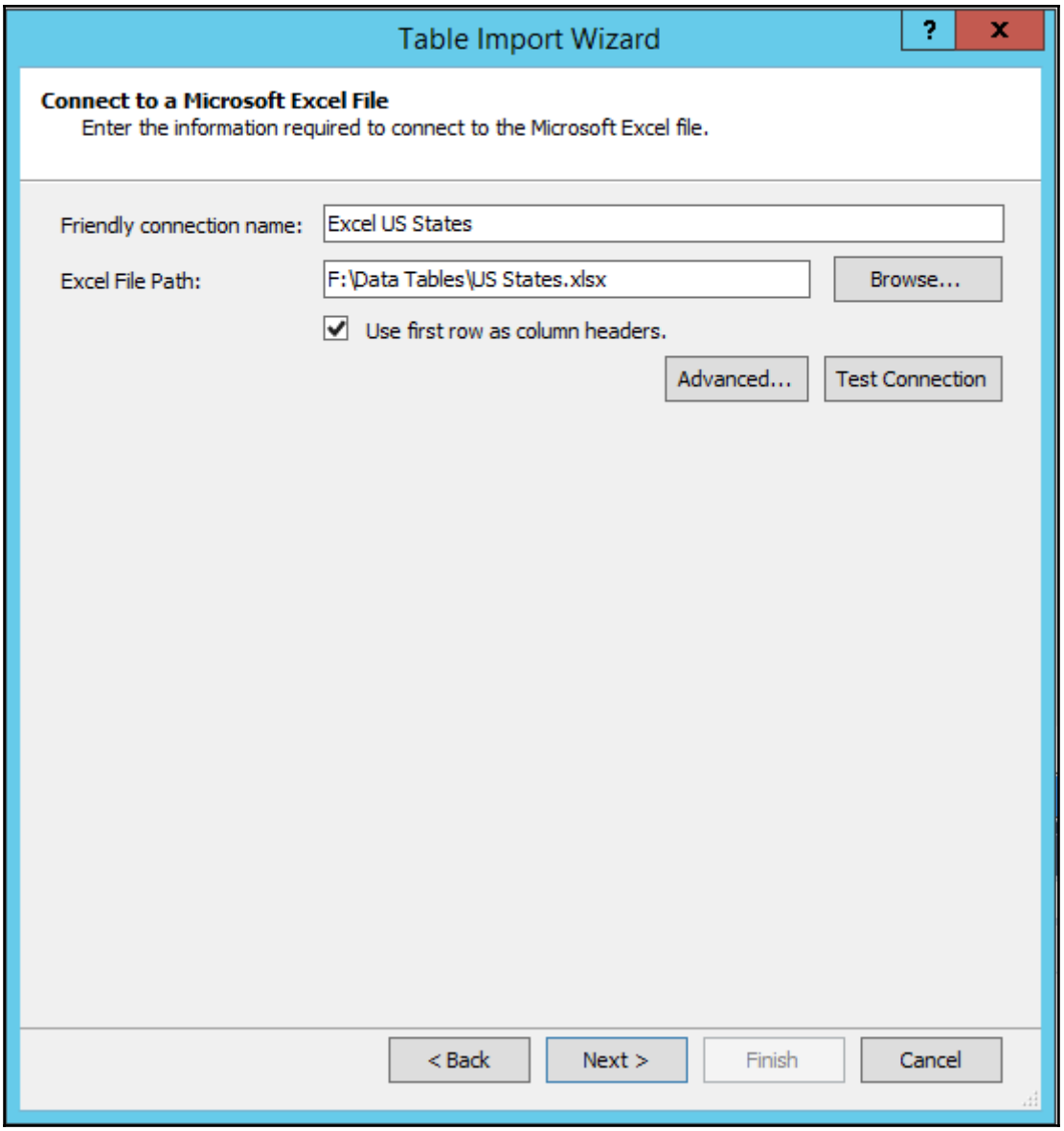


Table Import Wizard
?
X
Connect to a Microsoft Excel File
Enter the information required to connect to the Microsoft Excel file.
Friendly connection name:
Excel US States
Excel File Path:
F:\Data Tables\US States.xlsx
Browse...
Use first row as column headers.
Advanced...
Test Connection
< Back
Next >
Finish
Cancel

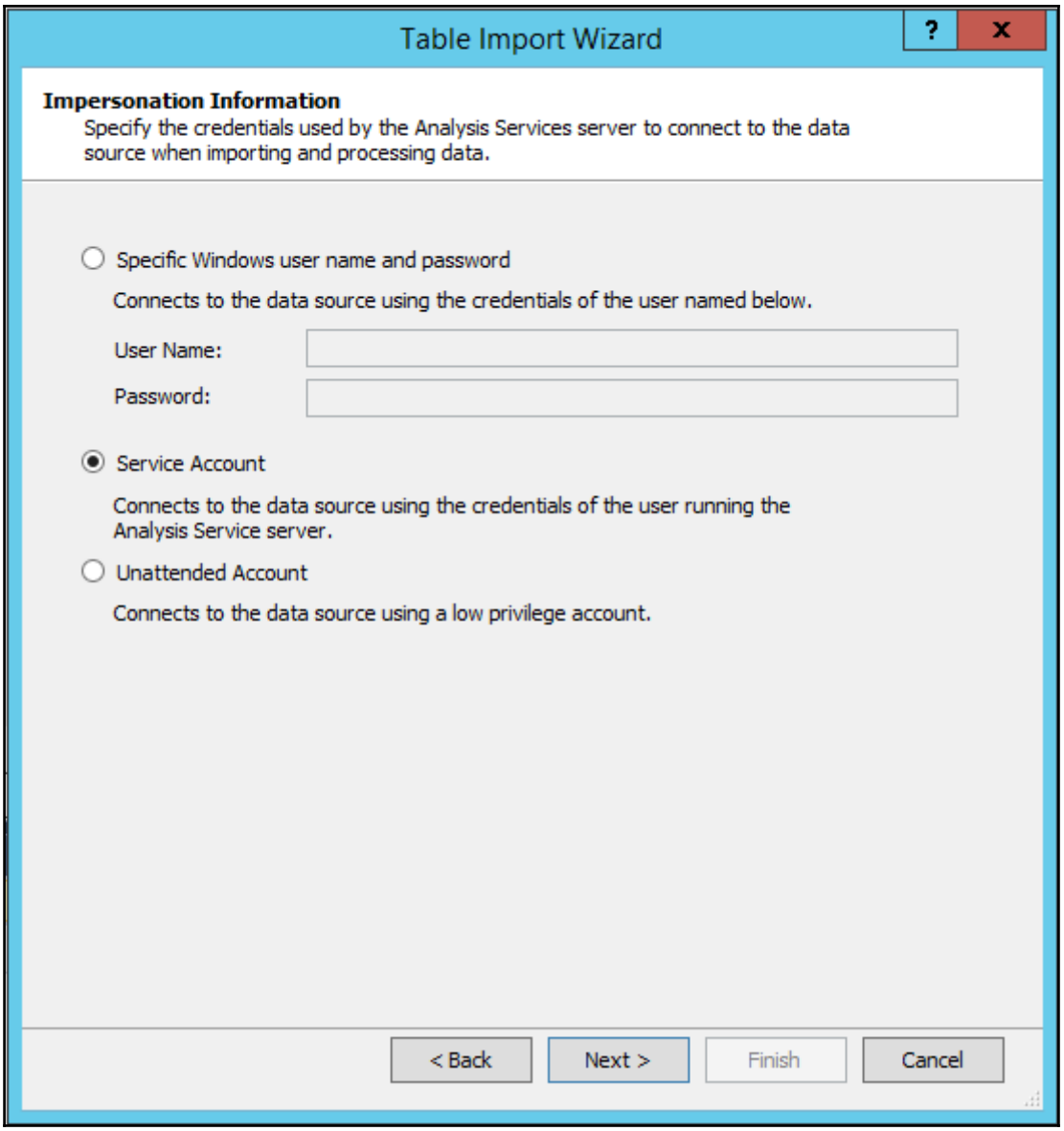


Table Import Wizard
?
x
Impersonation Information
Specify the credentials used by the Analysis Services server to connect to the data source when importing and processing data.
Specific Windows user name and password
Connects to the data source using the credentials of the user named below.
User Name:
Password:
Service Account
Connects to the data source using the credentials of the user running the Analysis Service server.
Unattended Account
Connects to the data source using a low privilege account.
< Back
Next >
Finish
Cancel

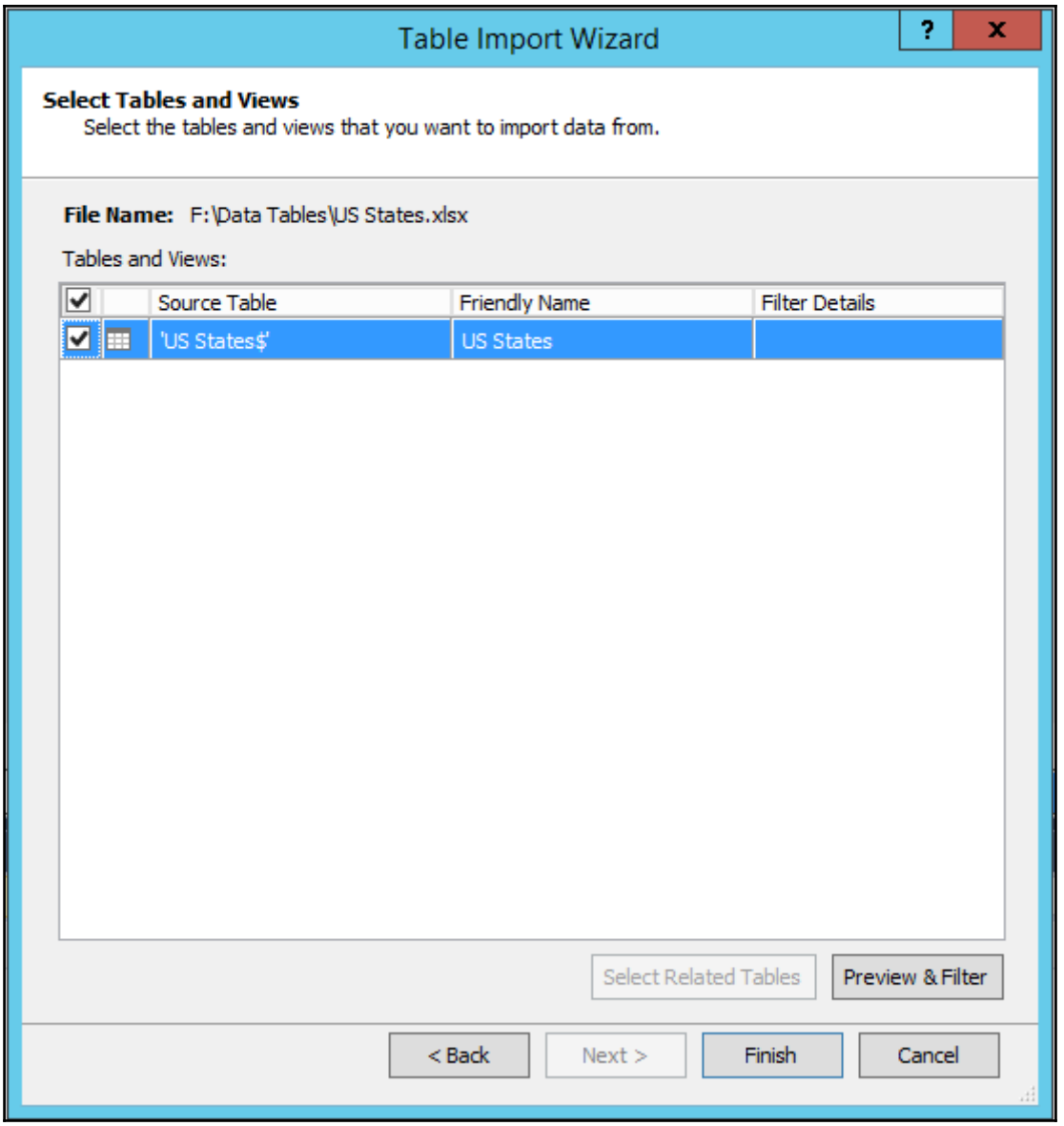


Table Import Wizard
?
X
Select Tables and Views
Select the tables and views that you want to import data from.
File Name: F:\Data Tables\US States.xlsx
Tables and Views:
Source Table
Friendly Name
Filter Details
'US States$'
US States
Select Related Tables
Preview & Filter
< Back
Next >
Finish
Cancel

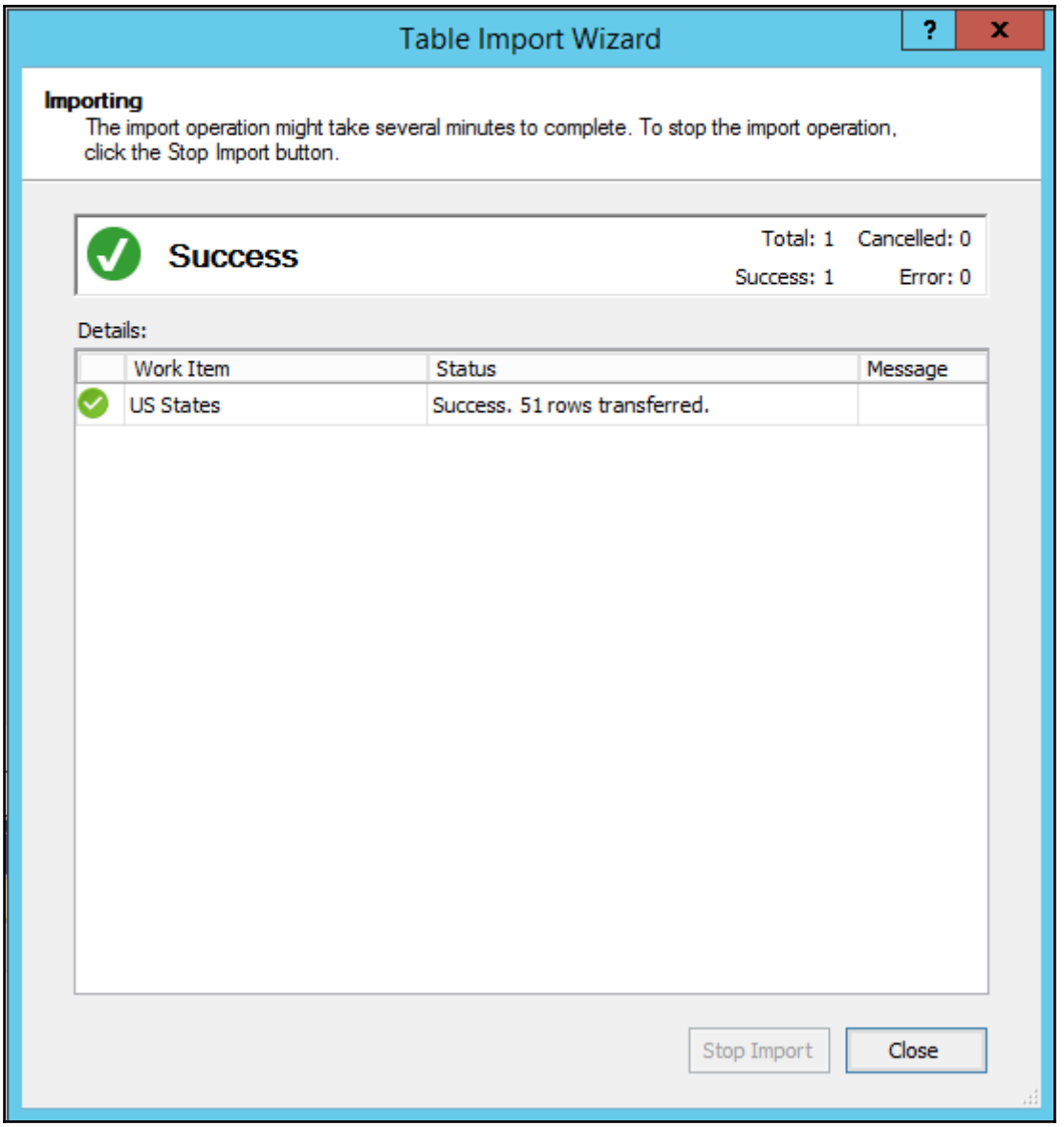
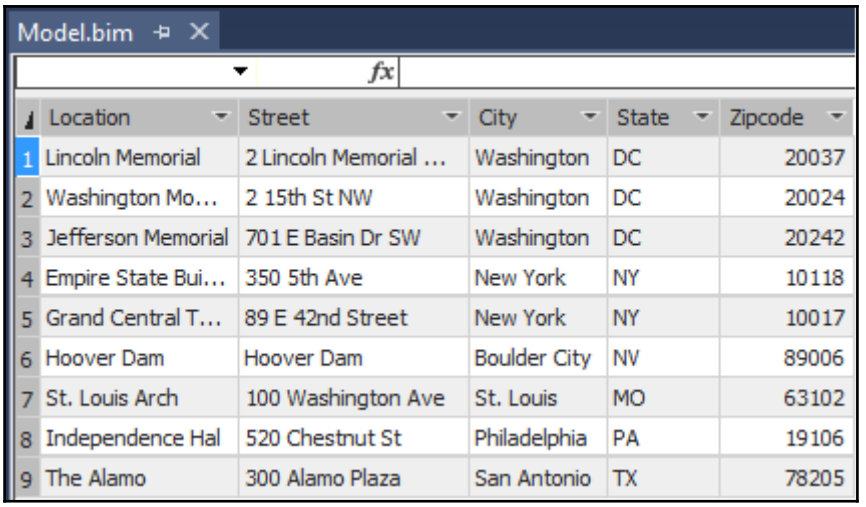
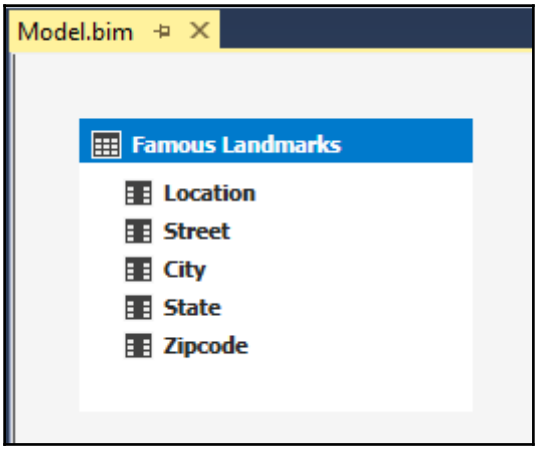
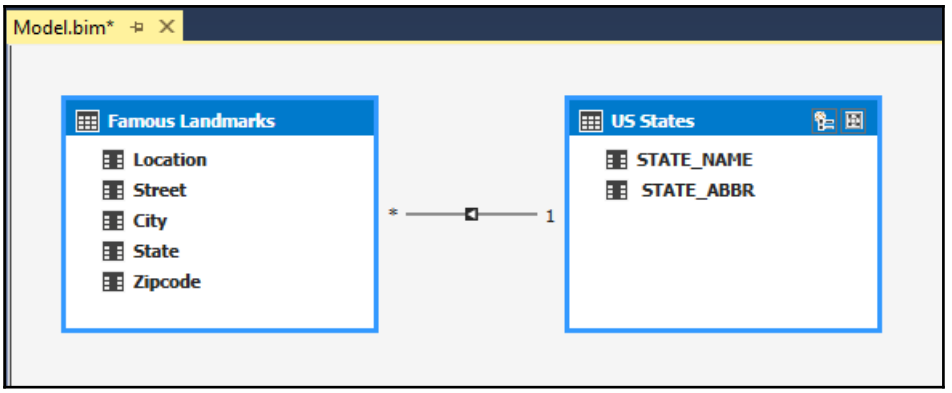


Table Import Wizard
?
X
Importing
The import operation might take several minutes to complete. To stop the import operation, click the Stop Import button.
Success
Total: 1
Cancelled: 0
Success: 1
Error: 0
Details:
Work Item
Status
Message
US States
Success. 51 rows transferred.
Stop Import
Close

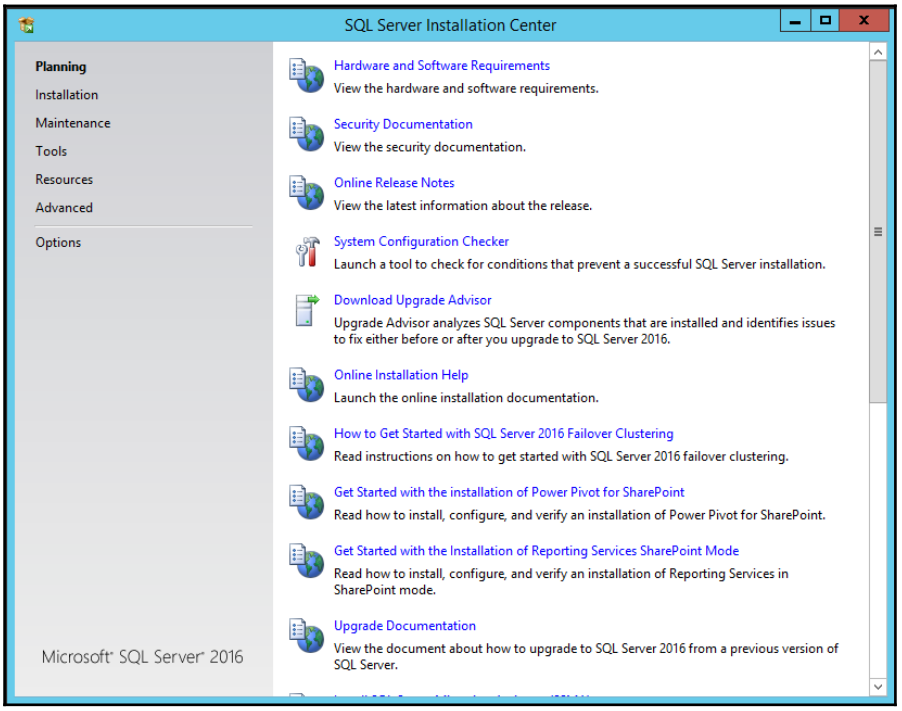


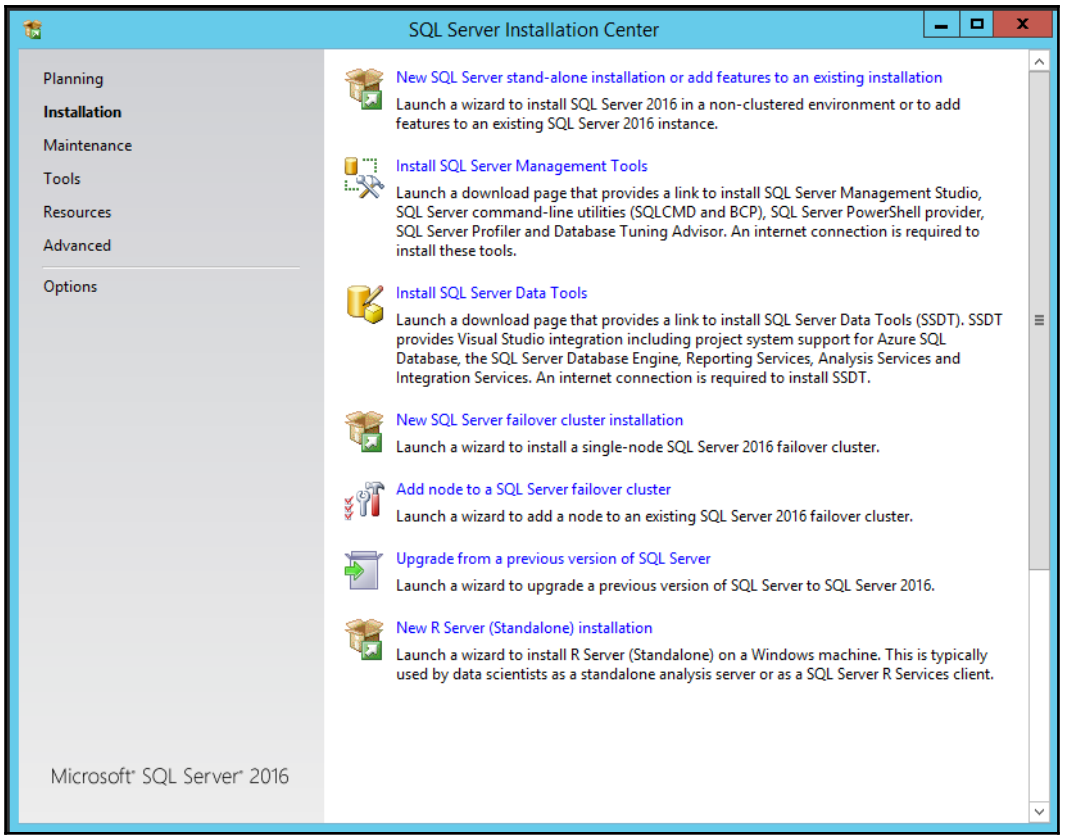
	Location	Street	City	State	Zipcode
1	Lincoln Memorial	2 Lincoln Memorial ...	Washington	DC	20037
2	Washington Mo...	2 15th St NW	Washington	DC	20024
3	Jefferson Memorial	701 E Basin Dr SW	Washington	DC	20242
4	Empire State Bui...	350 5th Ave	New York	NY	10118
5	Grand Central T...	89 E 42nd Street	New York	NY	10017
6	Hoover Dam	Hoover Dam	Boulder City	NV	89006
7	St. Louis Arch	100 Washington Ave	St. Louis	MO	63102
8	Independence Hal	520 Chestnut St	Philadelphia	PA	19106
9	The Alamo	300 Alamo Plaza	San Antonio	TX	78205

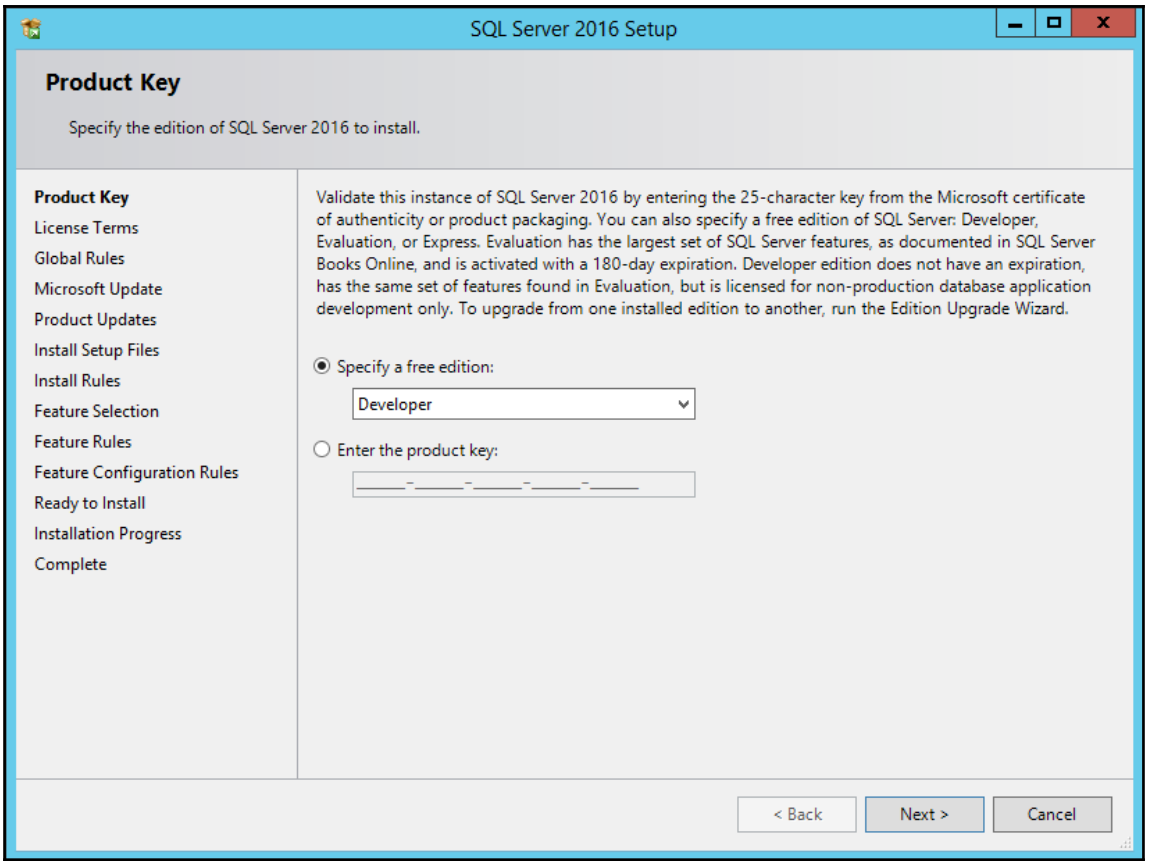


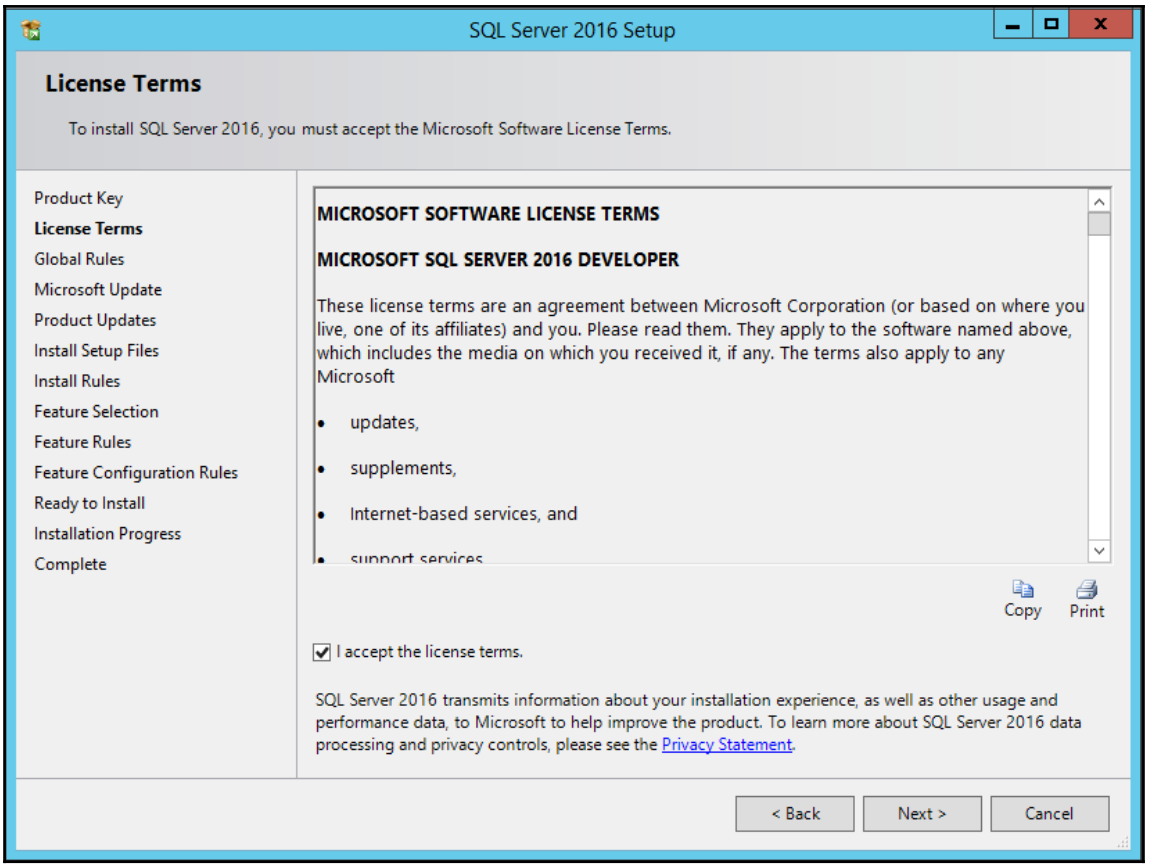

Model.bim*
Famous Landmarks
Location
Street
City
State
Zipcode
*
1
US States
STATE_NAME
STATE_ABBR

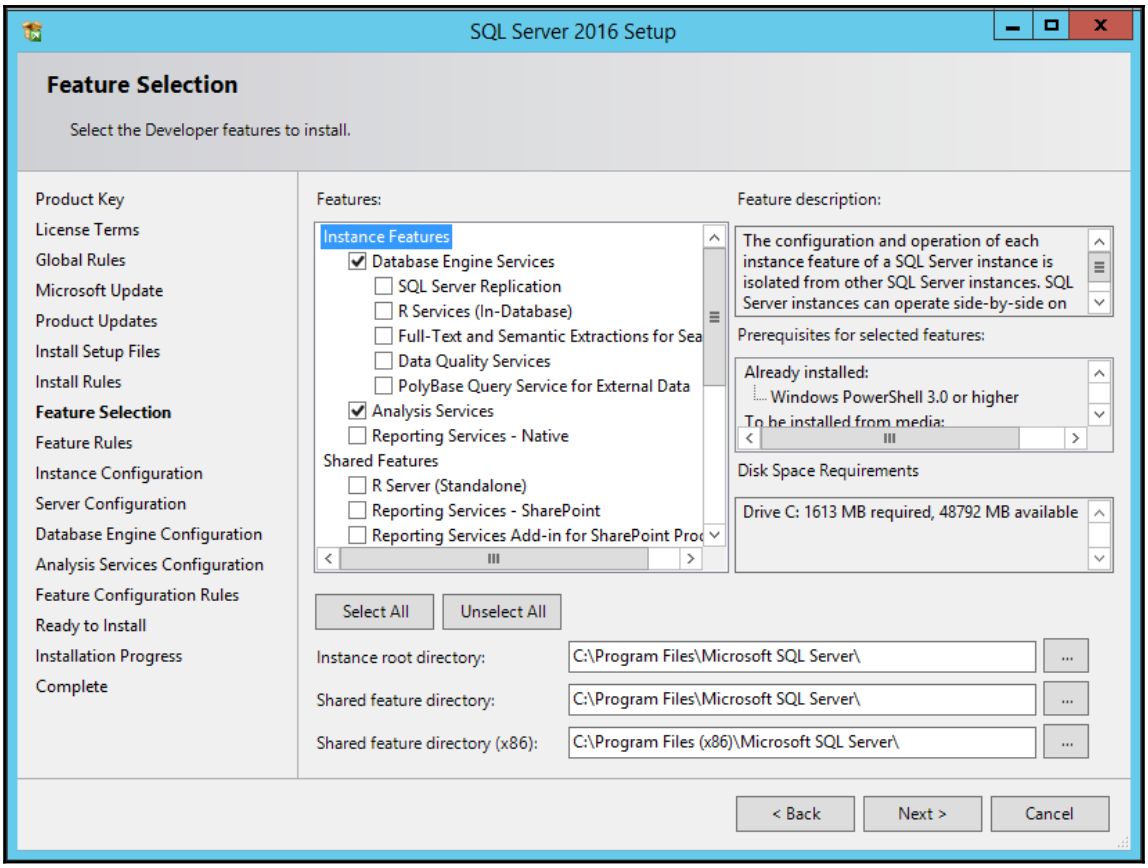
Chapter 2: Setting up a Tabular Mode Environment

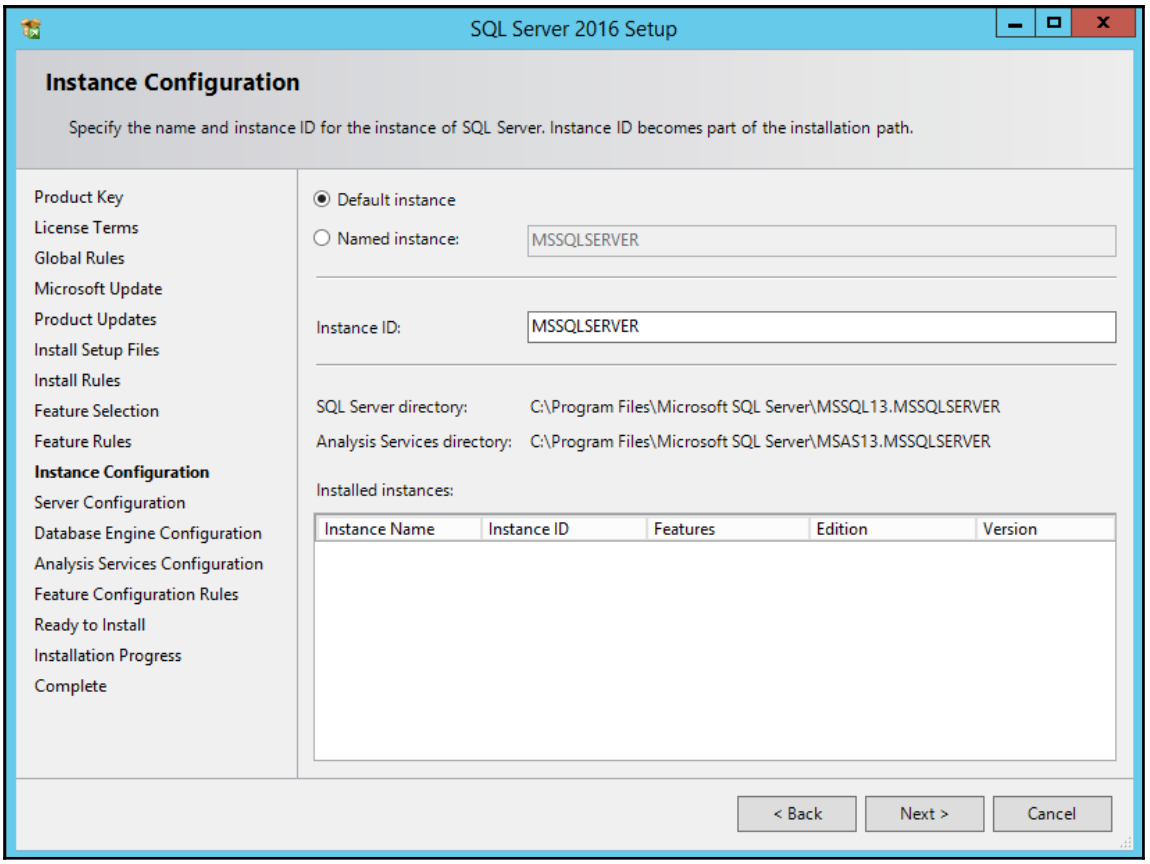


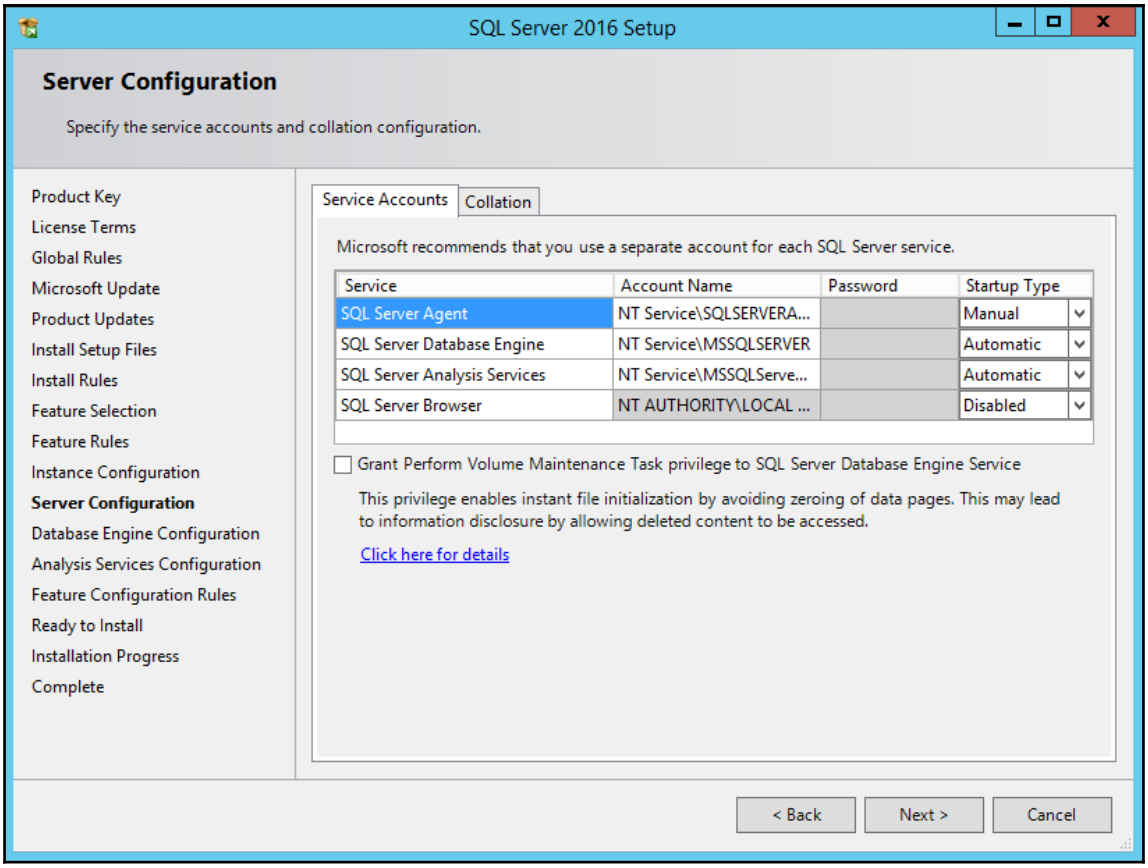

SQL Server Installation Center
Planning
Installation
Maintenance
Tools
Resources
Advanced
Options
Microsoft SQL Server 2016
New SQL Server stand-alone installation or add features to an existing installation
Launch a wizard to install SQL Server 2016 in a non-clustered environment or to add features to an existing SQL Server 2016 instance.
Install SQL Server Management Tools
Launch a download page that provides a link to install SQL Server Management Studio, SQL Server command-line utilities (SQLCMD and BCP), SQL Server PowerShell provider, SQL Server Profiler and Database Tuning Advisor. An internet connection is required to install these tools.
Install SQL Server Data Tools
Launch a download page that provides a link to install SQL Server Data Tools (SSDT). SSDT provides Visual Studio integration including project system support for Azure SQL Database, the SQL Server Database Engine, Reporting Services, Analysis Services and Integration Services. An internet connection is required to install SSDT.
New SQL Server failover cluster installation
Launch a wizard to install a single-node SQL Server 2016 failover cluster.
Add node to a SQL Server failover cluster
Launch a wizard to add a node to an existing SQL Server 2016 failover cluster.
Upgrade from a previous version of SQL Server
Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2016.
New R Server (Standalone) installation
Launch a wizard to install R Server (Standalone) on a Windows machine. This is typically used by data scientists as a standalone analysis server or as a SQL Server R Services client.

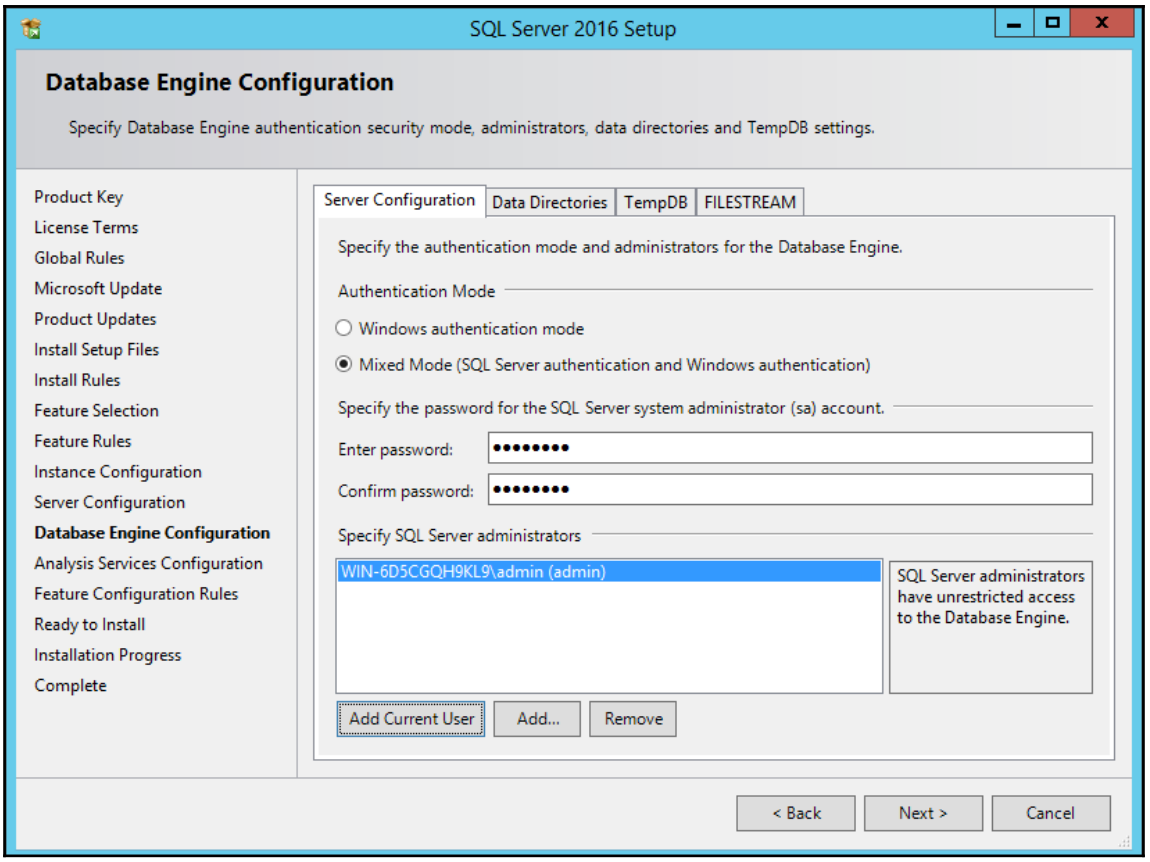

SQL Server 2016 Setup
Product Key
Specify the edition of SQL Server 2016 to install.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Validate this instance of SQL Server 2016 by entering the 25-character key from the Microsoft certificate of authenticity or product packaging. You can also specify a free edition of SQL Server: Developer, Evaluation, or Express. Evaluation has the largest set of SQL Server features, as documented in SQL Server Books Online, and is activated with a 180-day expiration. Developer edition does not have an expiration, has the same set of features found in Evaluation, but is licensed for non-production database application development only. To upgrade from one installed edition to another, run the Edition Upgrade Wizard.
Specify a free edition:
Developer
Enter the product key:
_____-_____-_____-_____-_____
< Back
Next >
Cancel

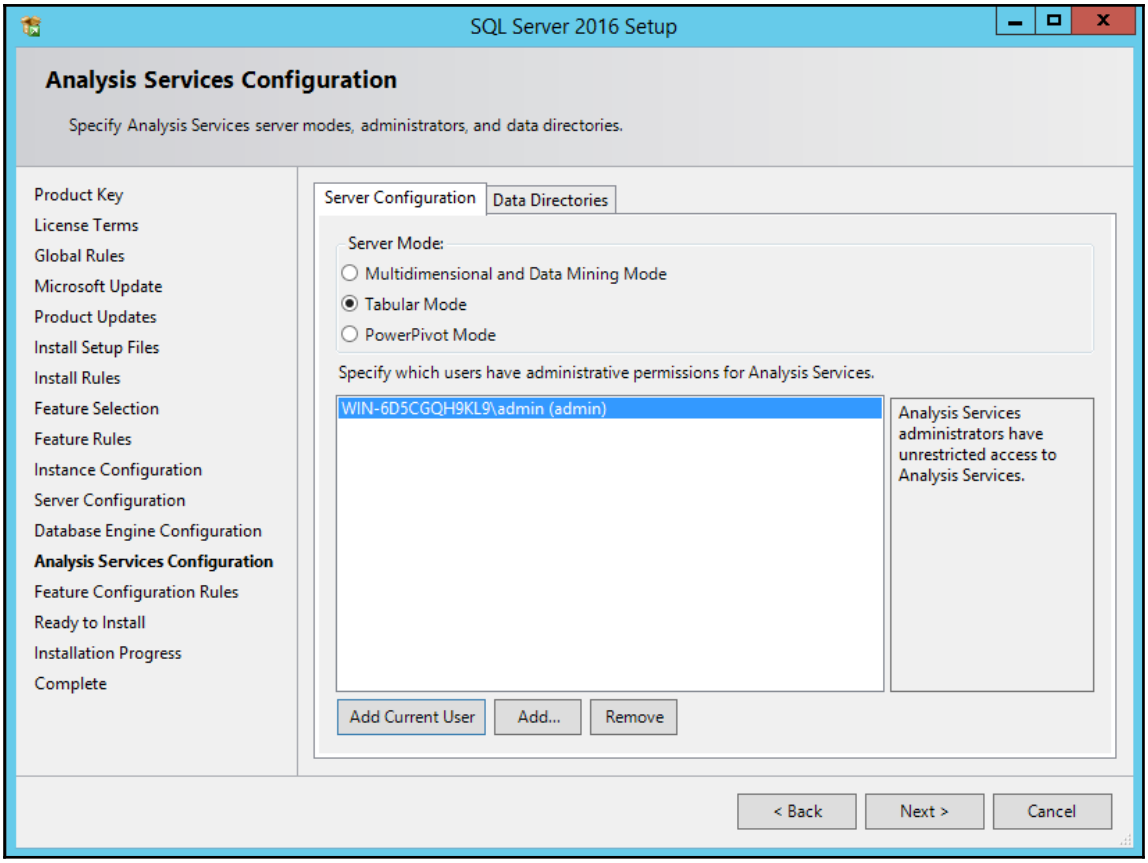

SQL Server 2016 Setup
License Terms
To install SQL Server 2016, you must accept the Microsoft Software License Terms.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT SQL SERVER 2016 DEVELOPER
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
Internet-based services, and
support services
Copy
Print
I accept the license terms.
SQL Server 2016 transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about SQL Server 2016 data processing and privacy controls, please see the Privacy Statement.
< Back
Next >
Cancel

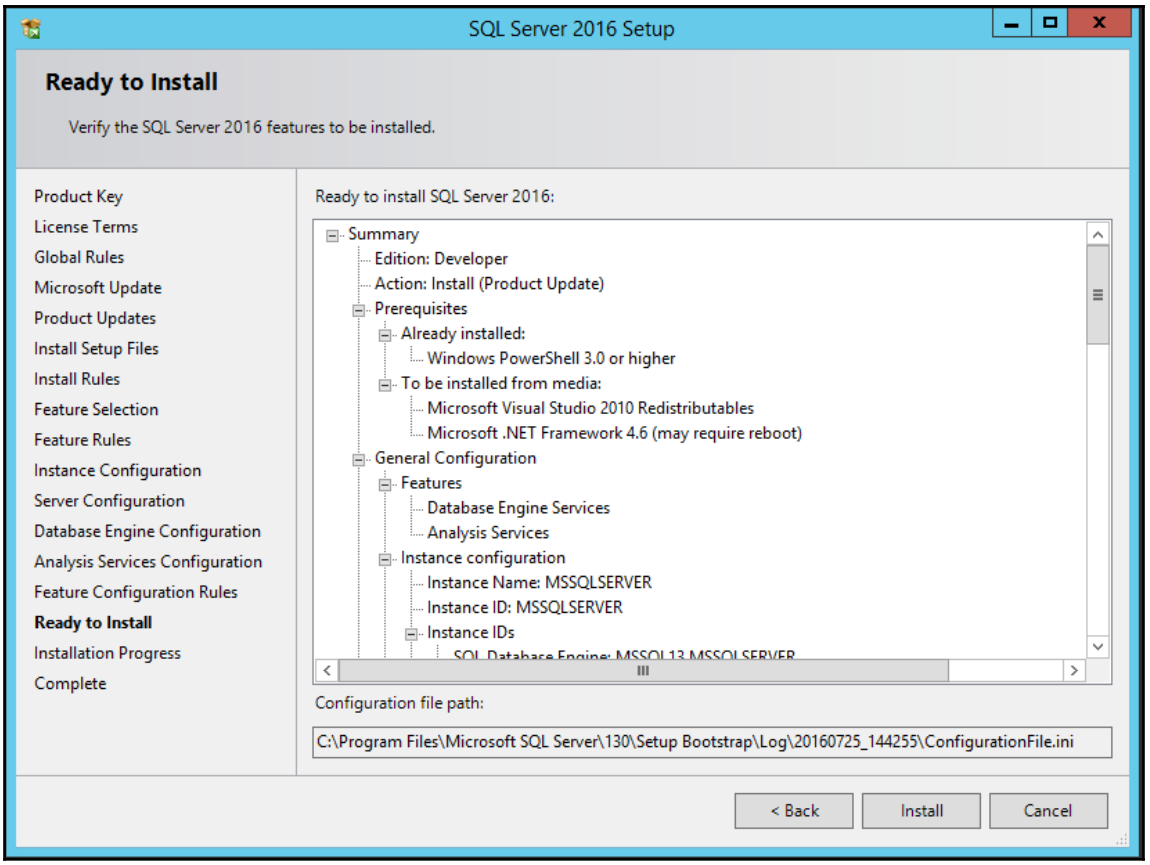

SQL Server 2016 Setup
Feature Selection
Select the Developer features to install.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Features:
Instance Features
Database Engine Services
SQL Server Replication
R Services (In-Database)
Full-Text and Semantic Extractions for Sea
Data Quality Services
PolyBase Query Service for External Data
Analysis Services
Reporting Services - Native
Shared Features
R Server (Standalone)
Reporting Services - SharePoint
Reporting Services Add-in for SharePoint Proc
Feature description:
The configuration and operation of each instance feature of a SQL Server instance is isolated from other SQL Server instances. SQL Server instances can operate side-by-side on
Prerequisites for selected features:
Already installed:
Windows PowerShell 3.0 or higher
To be installed from media:
Disk Space Requirements
Drive C: 1613 MB required, 48792 MB available
Select All
Unselect All
Instance root directory:
C:\Program Files\Microsoft SQL Server\
Shared feature directory:
C:\Program Files\Microsoft SQL Server\
Shared feature directory (x86):
C:\Program Files (x86)\Microsoft SQL Server\
< Back
Next >
Cancel

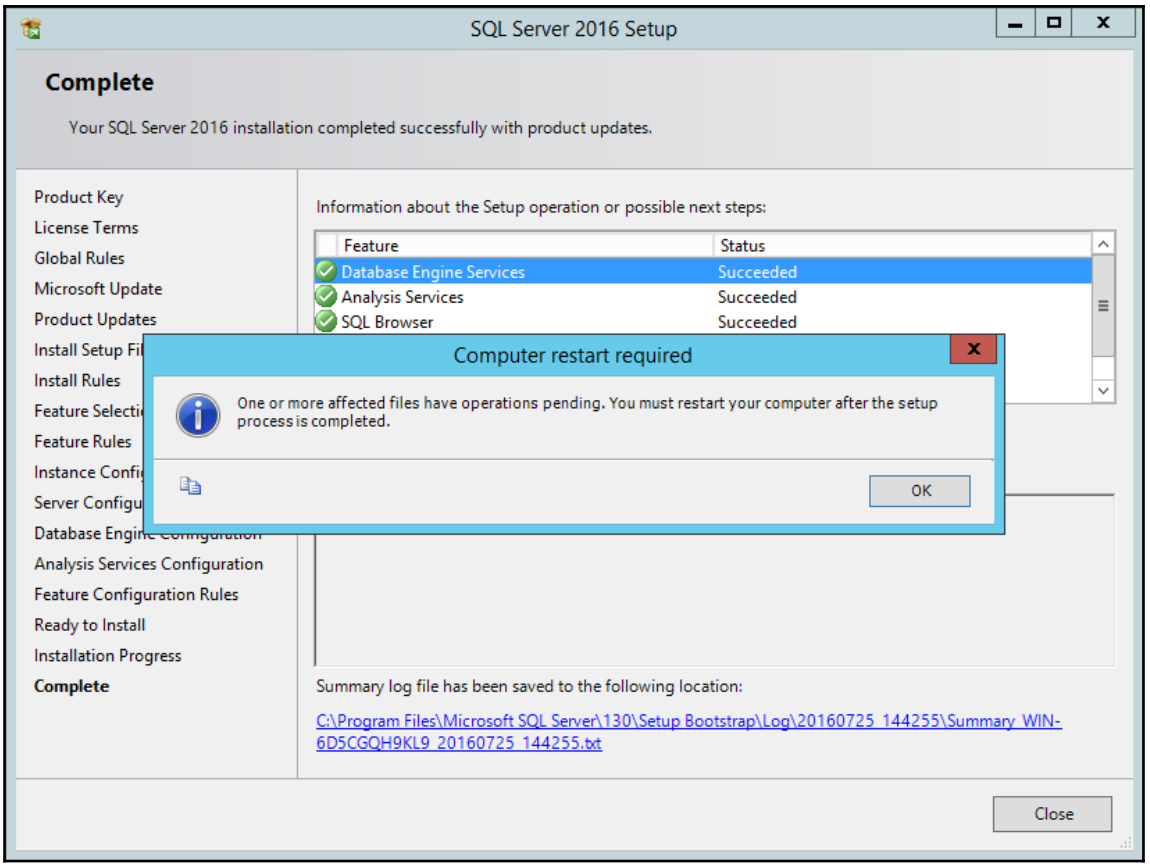

SQL Server 2016 Setup
Instance Configuration
Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Default instance
Named instance:
MSSQLSERVER
Instance ID:
MSSQLSERVER
SQL Server directory:
C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER
Analysis Services directory:
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER
Installed instances:
Instance Name
Instance ID
Features
Edition
Version
< Back
Next >
Cancel

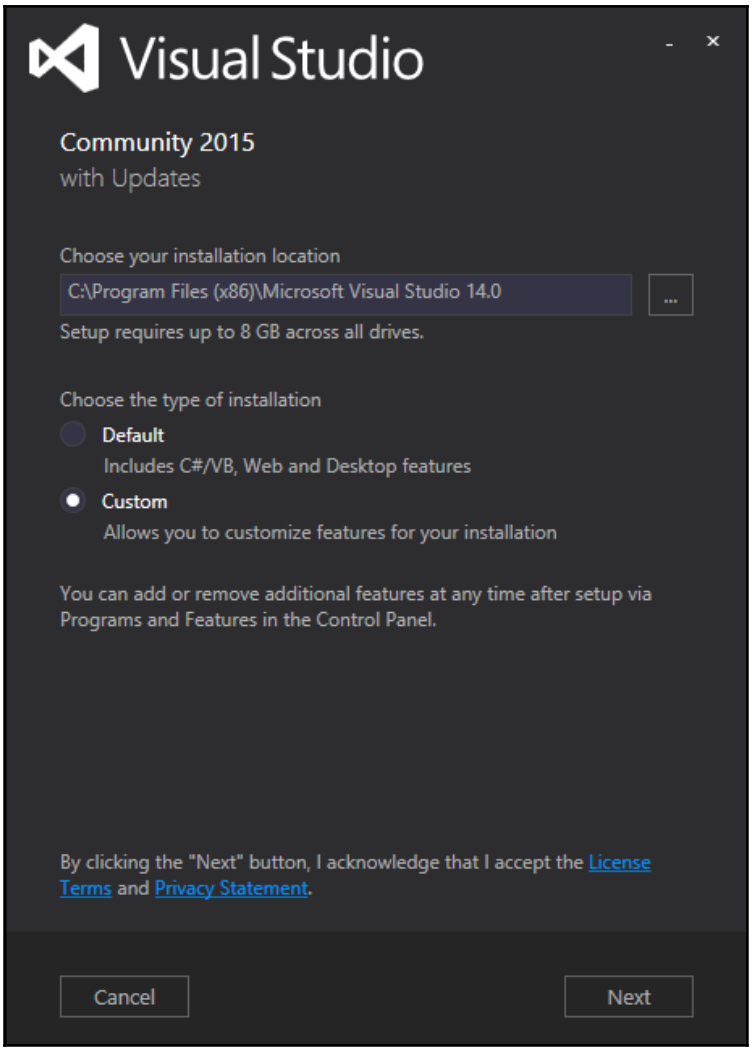

SQL Server 2016 Setup
Server Configuration
Specify the service accounts and collation configuration.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Service Accounts
Collation
Microsoft recommends that you use a separate account for each SQL Server service.
Service
Account Name
Password
Startup Type
SQL Server Agent
NT Service\SQLSERVERA...
Manual
SQL Server Database Engine
NT Service\MSSQLSERVER
Automatic
SQL Server Analysis Services
NT Service\MSSQLServe...
Automatic
SQL Server Browser
NT AUTHORITY\LOCAL ...
Disabled
Grant Perform Volume Maintenance Task privilege to SQL Server Database Engine Service
This privilege enables instant file initialization by avoiding zeroing of data pages. This may lead to information disclosure by allowing deleted content to be accessed.
Click here for details
< Back
Next >
Cancel

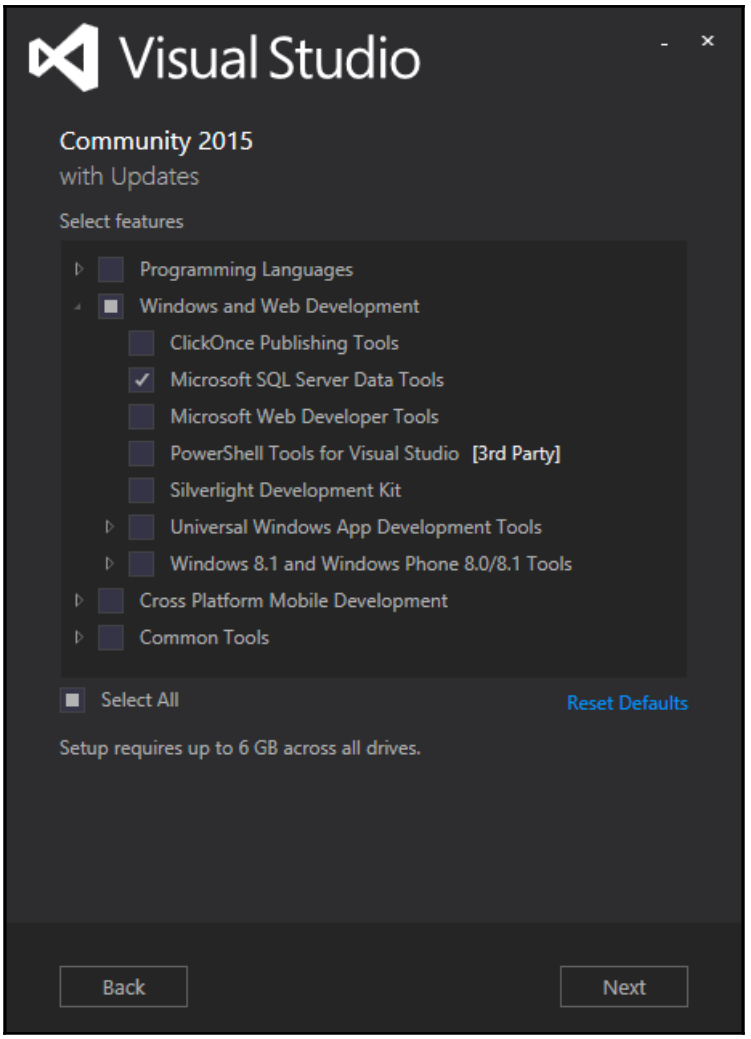

SQL Server 2016 Setup
Database Engine Configuration
Specify Database Engine authentication security mode, administrators, data directories and TempDB settings.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Server Configuration
Data Directories
TempDB
FILESTREAM
Specify the authentication mode and administrators for the Database Engine.
Authentication Mode
Windows authentication mode
Mixed Mode (SQL Server authentication and Windows authentication)
Specify the password for the SQL Server system administrator (sa) account.
Enter password:
Confirm password:
Specify SQL Server administrators
WIN-6D5CGQH9KL9\admin (admin)
SQL Server administrators have unrestricted access to the Database Engine.
Add Current User
Add...
Remove
< Back
Next >
Cancel

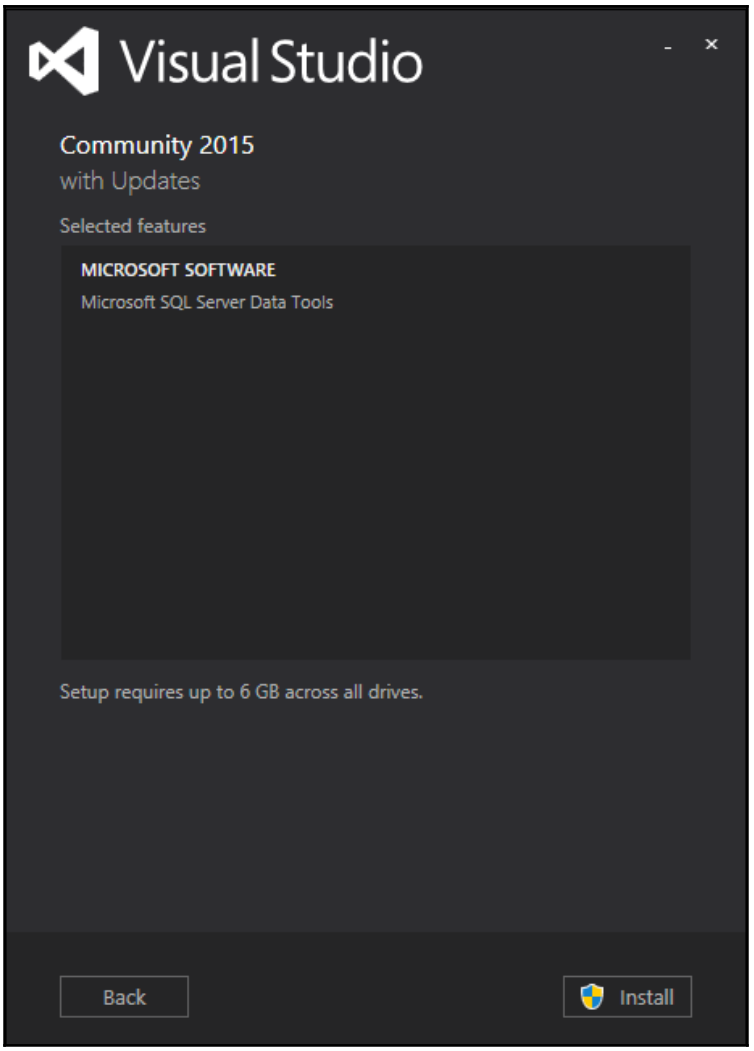

SQL Server 2016 Setup
Analysis Services Configuration
Specify Analysis Services server modes, administrators, and data directories.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Server Configuration
Data Directories
Server Mode:
Multidimensional and Data Mining Mode
Tabular Mode
PowerPivot Mode
Specify which users have administrative permissions for Analysis Services.
WIN-6D5CGQH9KL9\admin (admin)
Analysis Services administrators have unrestricted access to Analysis Services.
Add Current User
Add...
Remove
< Back
Next >
Cancel

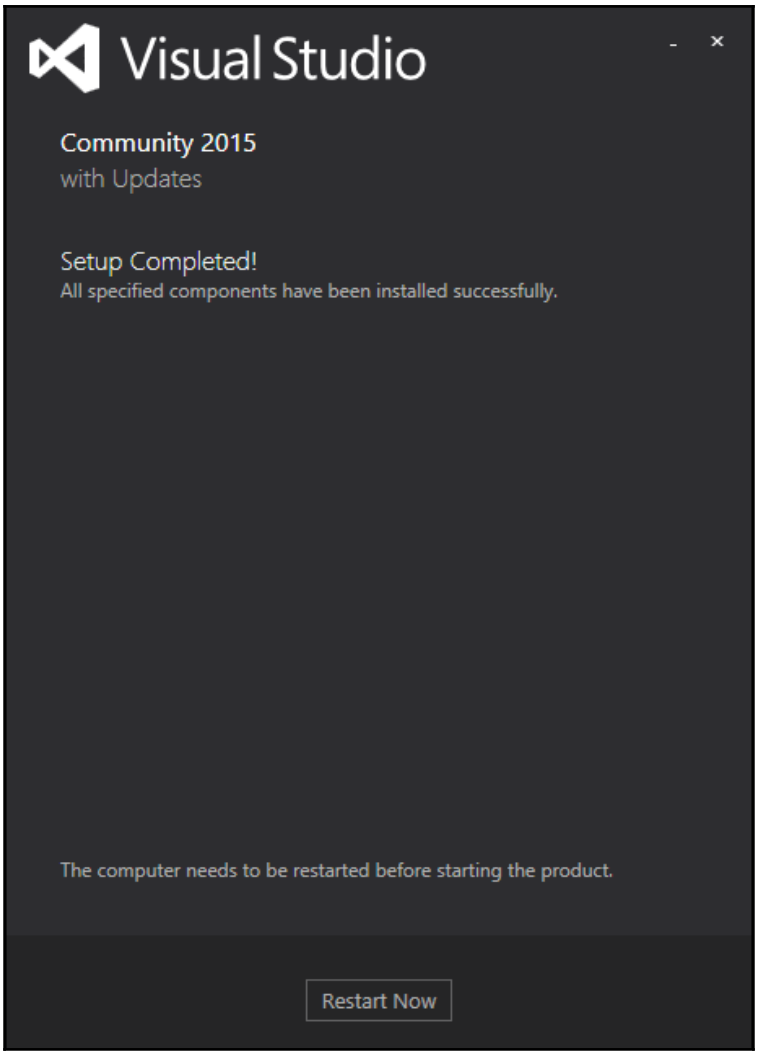

SQL Server 2016 Setup
Ready to Install
Verify the SQL Server 2016 features to be installed.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Rules
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Ready to install SQL Server 2016:
Summary
Edition: Developer
Action: Install (Product Update)
Prerequisites
Already installed:
Windows PowerShell 3.0 or higher
To be installed from media:
Microsoft Visual Studio 2010 Redistributables
Microsoft .NET Framework 4.6 (may require reboot)
General Configuration
Features
Database Engine Services
Analysis Services
Instance configuration
Instance Name: MSSQLSERVER
Instance ID: MSSQLSERVER
Instance IDs
Configuration file path:
C:\Program Files\Microsoft SQL Server\130\Setup Bootstrap\Log\20160725_144255\ConfigurationFile.ini
< Back
Install
Cancel

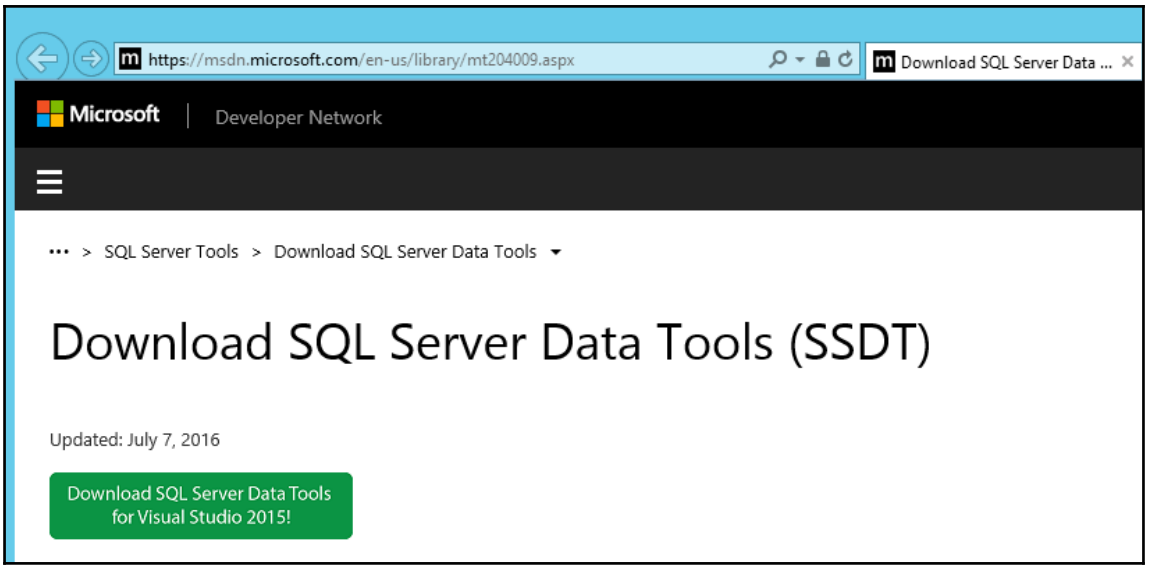

SQL Server 2016 Setup
Complete
Your SQL Server 2016 installation completed successfully with product updates.
Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Fi
Install Rules
Feature Selecti
Feature Rules
Instance Confi
Server Configu
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete
Information about the Setup operation or possible next steps:
Feature
Status
Database Engine Services
Succeeded
Analysis Services
Succeeded
SQL Browser
Succeeded
Computer restart required
One or more affected files have operations pending. You must restart your computer after the setup process is completed.
OK
Summary log file has been saved to the following location:
C:\Program Files\Microsoft SQL Server\130\Setup Bootstrap\Log\20160725_144255\Summary_WIN-6D5CGQH9KL9_20160725_144255.txt
Close

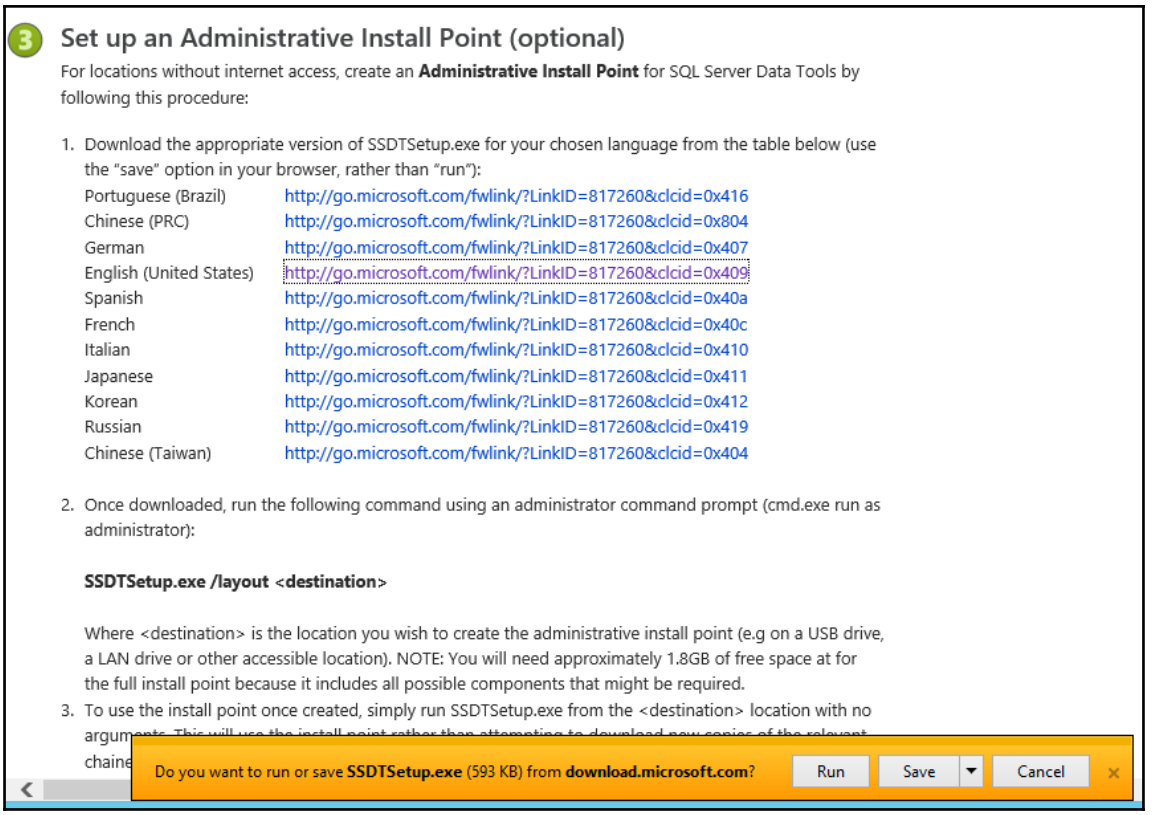

Visual Studio
Community 2015
with Updates
Choose your installation location
C:\Program Files (x86)\Microsoft Visual Studio 14.0
...
Setup requires up to 8 GB across all drives.
Choose the type of installation
Default
Includes C#/VB, Web and Desktop features
Custom
Allows you to customize features for your installation
You can add or remove additional features at any time after setup via Programs and Features in the Control Panel.
By clicking the "Next" button, I acknowledge that I accept the License Terms and Privacy Statement.
Cancel
Next


Visual Studio
Community 2015
with Updates
Select features
Programming Languages
Windows and Web Development
ClickOnce Publishing Tools
Microsoft SQL Server Data Tools
Microsoft Web Developer Tools
PowerShell Tools for Visual Studio [3rd Party]
Silverlight Development Kit
Universal Windows App Development Tools
Windows 8.1 and Windows Phone 8.0/8.1 Tools
Cross Platform Mobile Development
Common Tools
Select All
Reset Defaults
Setup requires up to 6 GB across all drives.
Back
Next


Visual Studio
Community 2015
with Updates
Selected features
MICROSOFT SOFTWARE
Microsoft SQL Server Data Tools
Setup requires up to 6 GB across all drives.
Back
Install


Visual Studio
Community 2015
with Updates
Setup Completed!
All specified components have been installed successfully.
The computer needs to be restarted before starting the product.
Restart Now


https://msdn.microsoft.com/en-us/library/mt204009.aspx
Download SQL Server Data ...
Microsoft
Developer Network
... > SQL Server Tools > Download SQL Server Data Tools
Download SQL Server Data Tools (SSDT)
Updated: July 7, 2016
Download SQL Server Data Tools for Visual Studio 2015!



3 Set up an Administrative Install Point (optional)

For locations without internet access, create an **Administrative Install Point** for SQL Server Data Tools by following this procedure:

1. Download the appropriate version of SSDTSetup.exe for your chosen language from the table below (use the "save" option in your browser, rather than "run"):

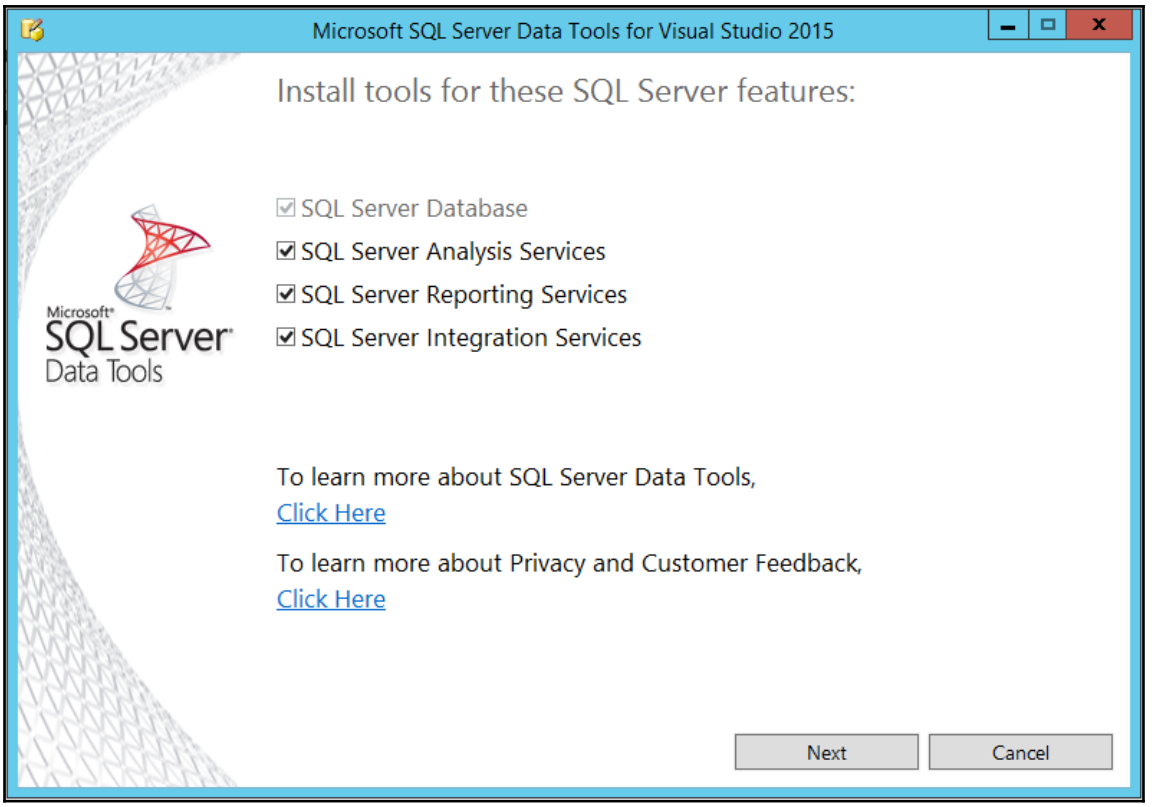
Portuguese (Brazil)	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x416
Chinese (PRC)	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x804
German	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x407
English (United States)	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x409
Spanish	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x40a
French	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x40c
Italian	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x410
Japanese	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x411
Korean	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x412
Russian	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x419
Chinese (Taiwan)	http://go.microsoft.com/fwlink/?LinkID=817260&clcid=0x404

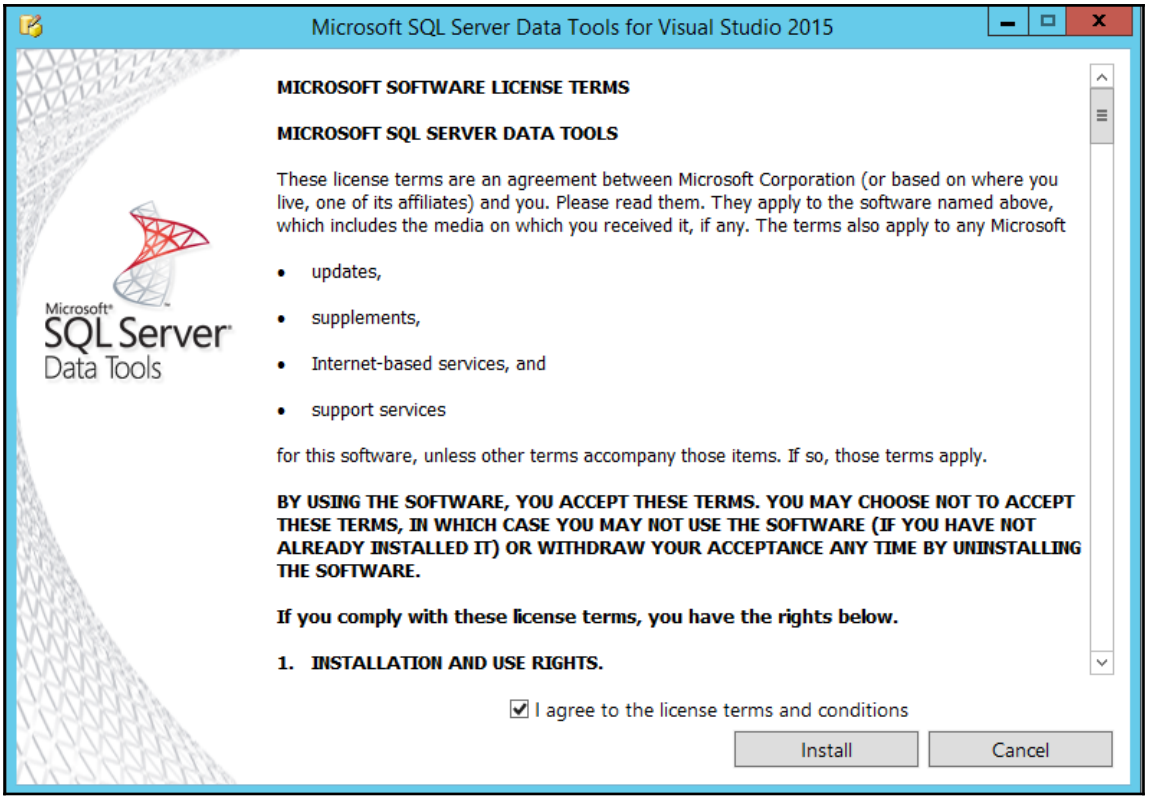
2. Once downloaded, run the following command using an administrator command prompt (cmd.exe run as administrator):

   SSDTSetup.exe /layout <destination>

   Where <destination> is the location you wish to create the administrative install point (e.g on a USB drive, a LAN drive or other accessible location). NOTE: You will need approximately 1.8GB of free space at for the full install point because it includes all possible components that might be required.
3. To use the install point once created, simply run SSDTSetup.exe from the <destination> location with no argum… chaine…

Do you want to run or save **SSDTSetup.exe** (593 KB) from **download.microsoft.com**? Run Save Cancel


Microsoft SQL Server Data Tools for Visual Studio 2015
Install tools for these SQL Server features:
SQL Server Database
SQL Server Analysis Services
SQL Server Reporting Services
SQL Server Integration Services
Microsoft SQL Server Data Tools
To learn more about SQL Server Data Tools,
Click Here
To learn more about Privacy and Customer Feedback,
Click Here
Next
Cancel


Microsoft SQL Server Data Tools for Visual Studio 2015
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MICROSOFT SQL SERVER DATA TOOLS
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
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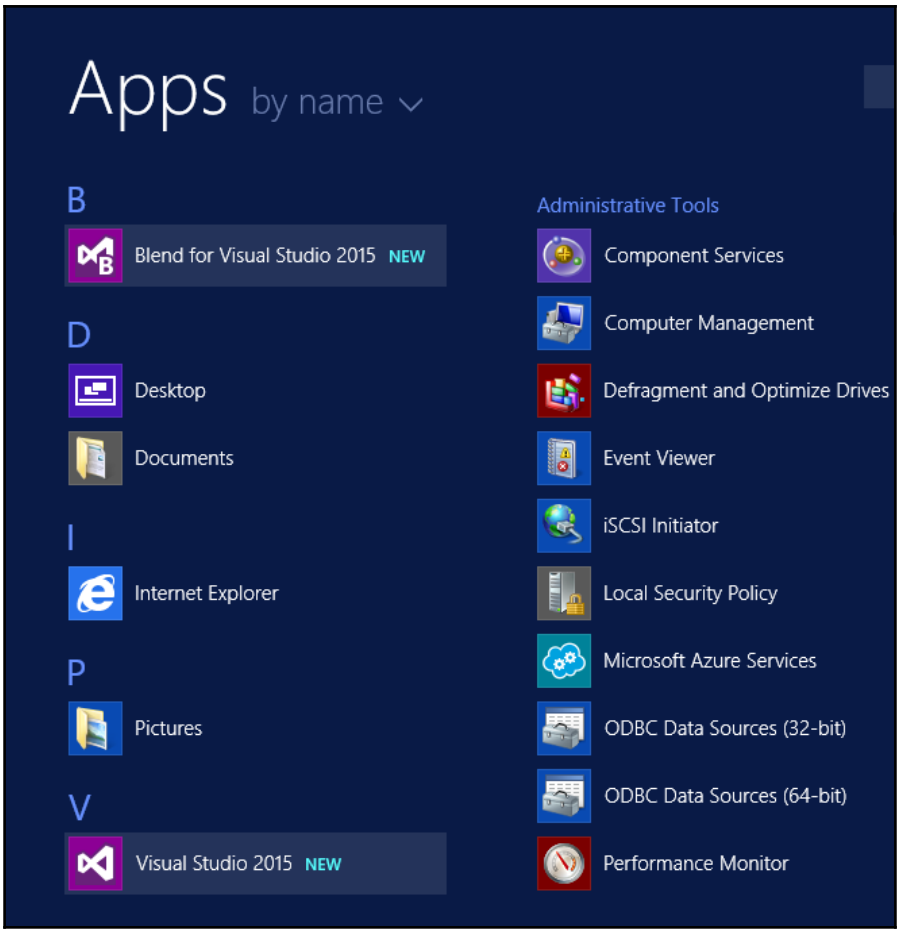
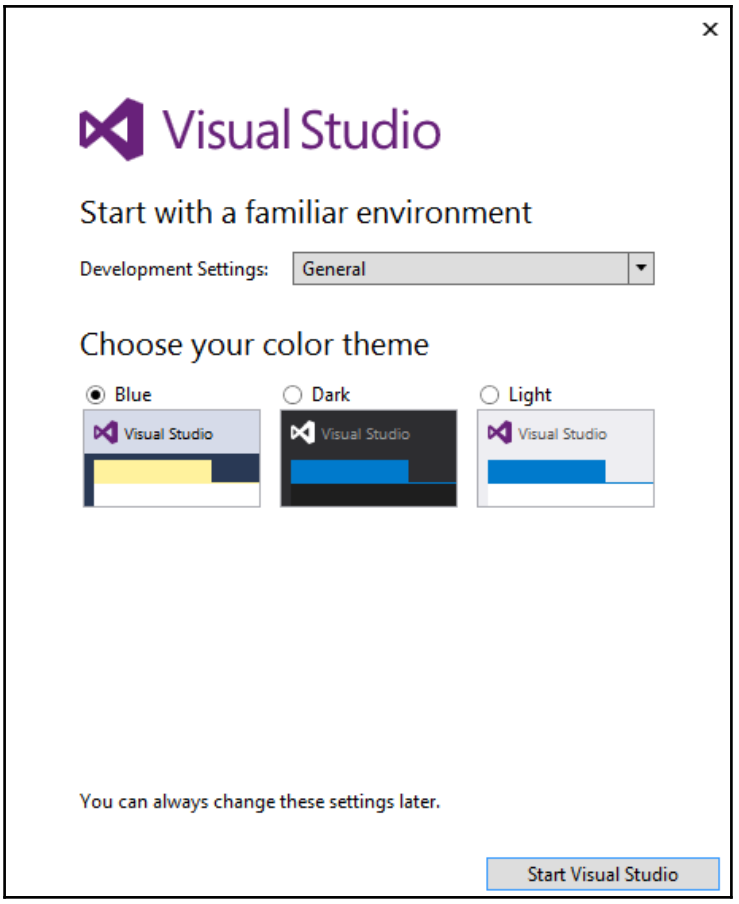
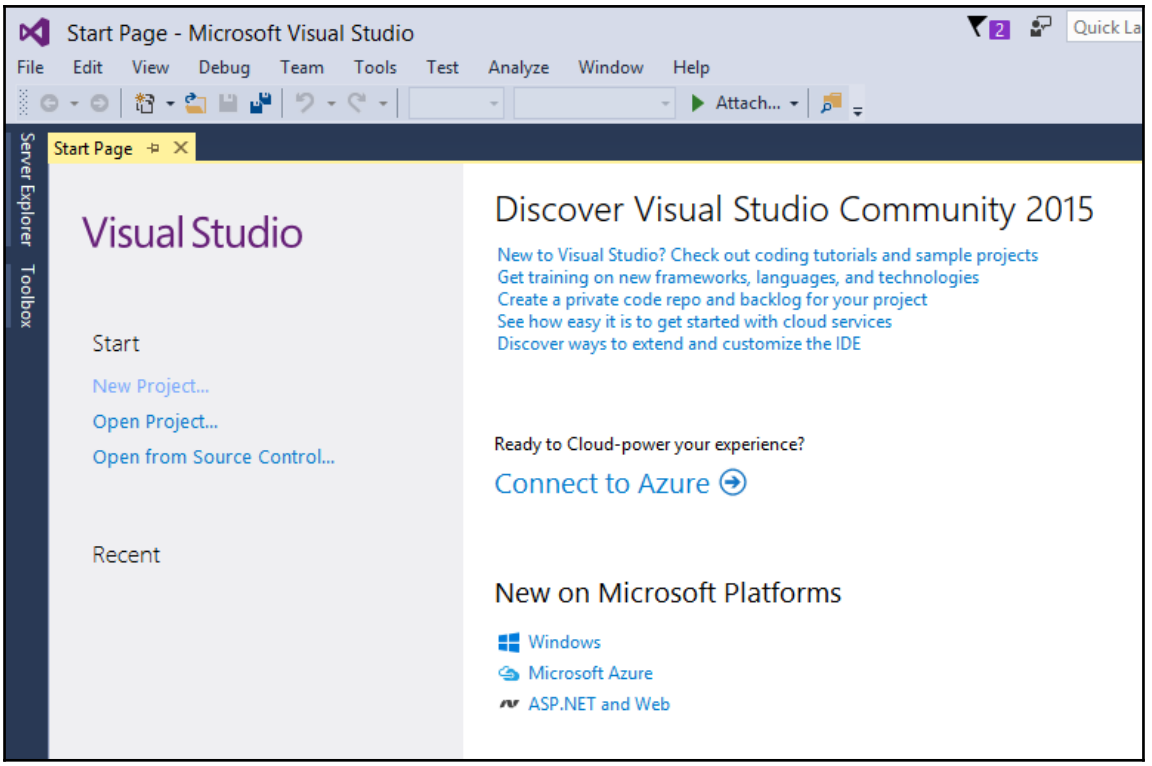
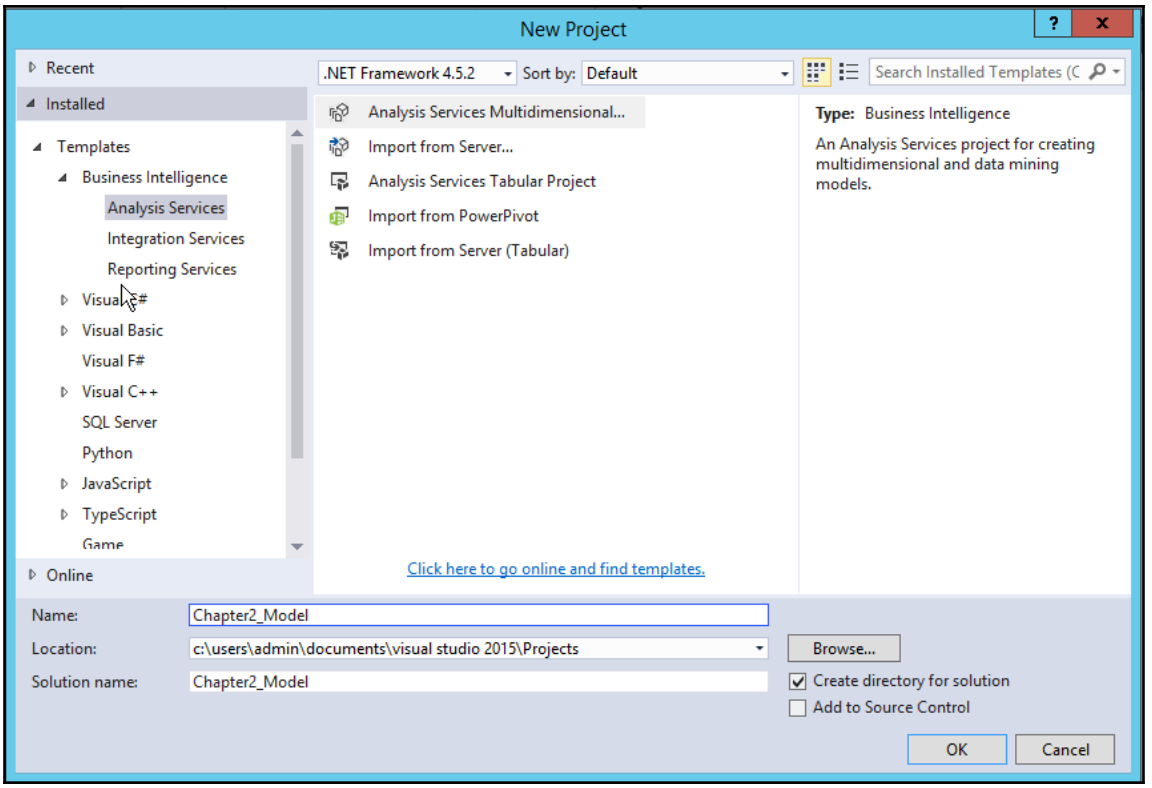
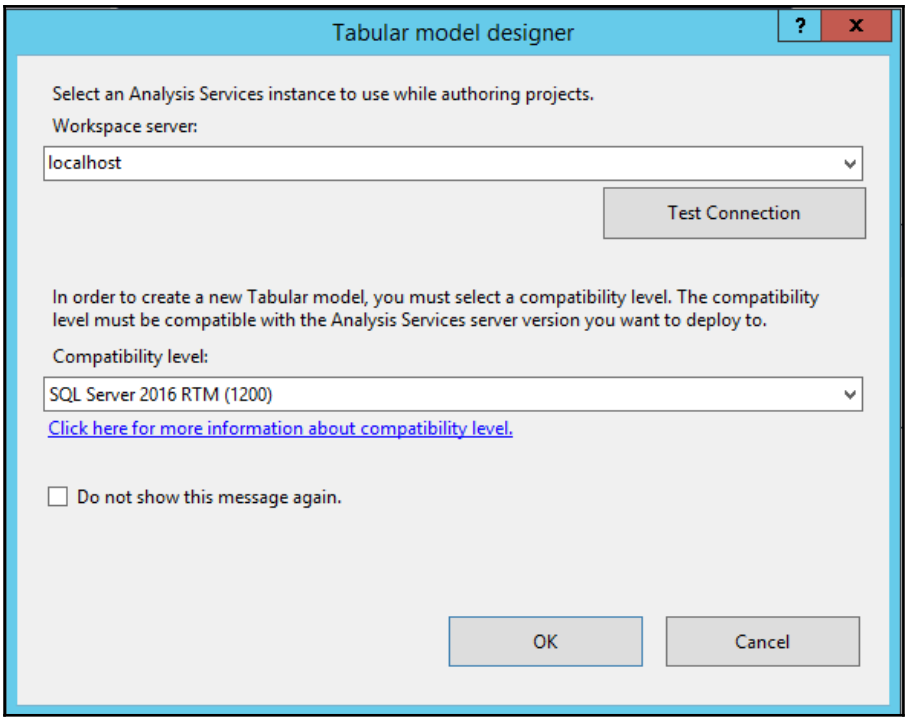
If you comply with these license terms, you have the rights below.
1. INSTALLATION AND USE RIGHTS.
Microsoft SQL Server Data Tools
I agree to the license terms and conditions
Install
Cancel

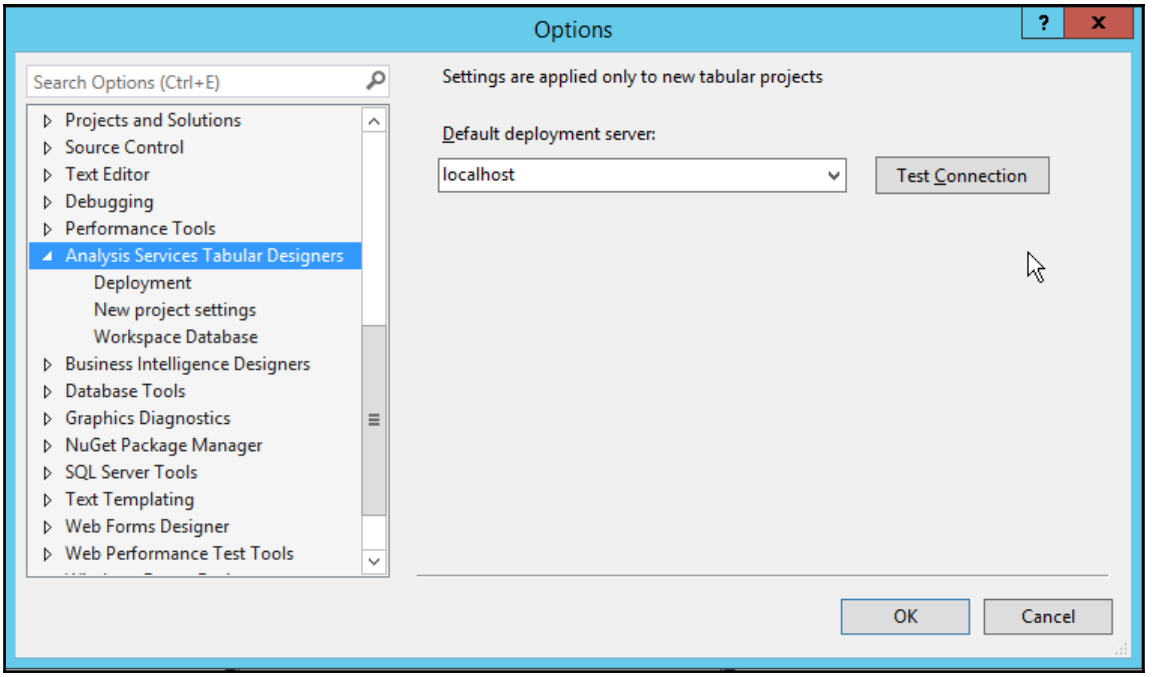

Apps by name
B
Blend for Visual Studio 2015 NEW
D
Desktop
Documents
I
Internet Explorer
P
Pictures
V
Visual Studio 2015 NEW
Administrative Tools
Component Services
Computer Management
Defragment and Optimize Drives
Event Viewer
iSCSI Initiator
Local Security Policy
Microsoft Azure Services
ODBC Data Sources (32-bit)
ODBC Data Sources (64-bit)
Performance Monitor

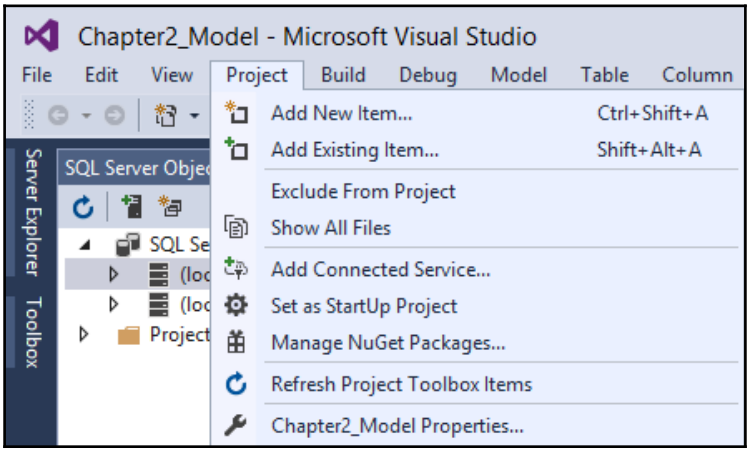

Visual Studio
Start with a familiar environment
Development Settings:
General
Choose your color theme
Blue
Dark
Light
Visual Studio
Visual Studio
Visual Studio
You can always change these settings later.
Start Visual Studio


Start Page - Microsoft Visual Studio
File Edit View Debug Team Tools Test Analyze Window Help
Attach...
Quick La
Server Explorer
Toolbox
Start Page
Visual Studio
Start
New Project...
Open Project...
Open from Source Control...
Recent
Discover Visual Studio Community 2015
New to Visual Studio? Check out coding tutorials and sample projects
Get training on new frameworks, languages, and technologies
Create a private code repo and backlog for your project
See how easy it is to get started with cloud services
Discover ways to extend and customize the IDE
Ready to Cloud-power your experience?
Connect to Azure
New on Microsoft Platforms
Windows
Microsoft Azure
ASP.NET and Web

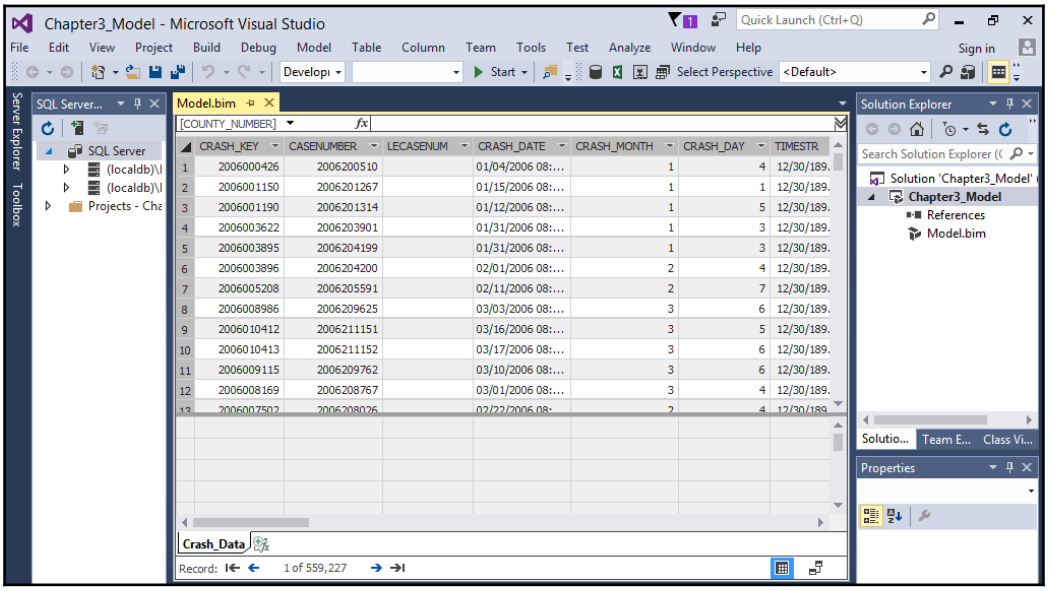

New Project
Recent
Installed
Templates
Business Intelligence
Analysis Services
Integration Services
Reporting Services
Visual C#
Visual Basic
Visual F#
Visual C++
SQL Server
Python
JavaScript
TypeScript
Game
Online
.NET Framework 4.5.2
Sort by:
Default
Search Installed Templates (C
Analysis Services Multidimensional...
Import from Server...
Analysis Services Tabular Project
Import from PowerPivot
Import from Server (Tabular)
Type: Business Intelligence
An Analysis Services project for creating multidimensional and data mining models.
Click here to go online and find templates.
Name:
Chapter2_Model
Location:
c:\users\admin\documents\visual studio 2015\Projects
Browse...
Solution name:
Chapter2_Model
Create directory for solution
Add to Source Control
OK
Cancel

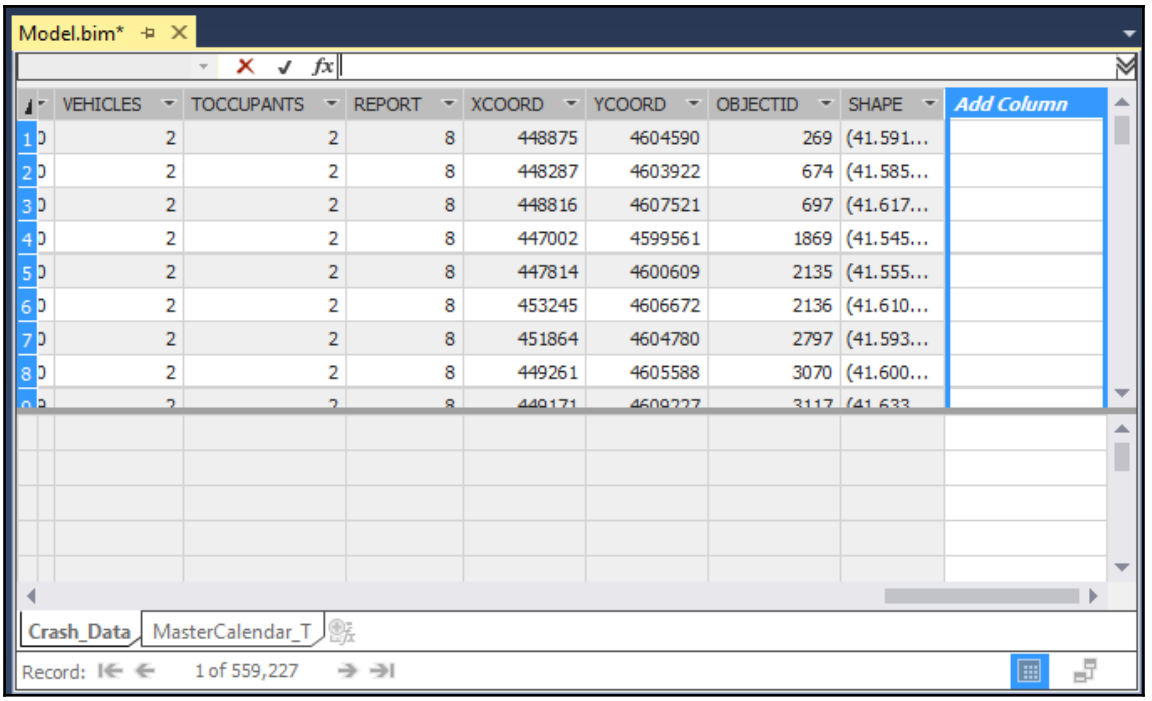

Tabular model designer
Select an Analysis Services instance to use while authoring projects.
Workspace server:
localhost
Test Connection
In order to create a new Tabular model, you must select a compatibility level. The compatibility level must be compatible with the Analysis Services server version you want to deploy to.
Compatibility level:
SQL Server 2016 RTM (1200)
Click here for more information about compatibility level.
Do not show this message again.
OK
Cancel

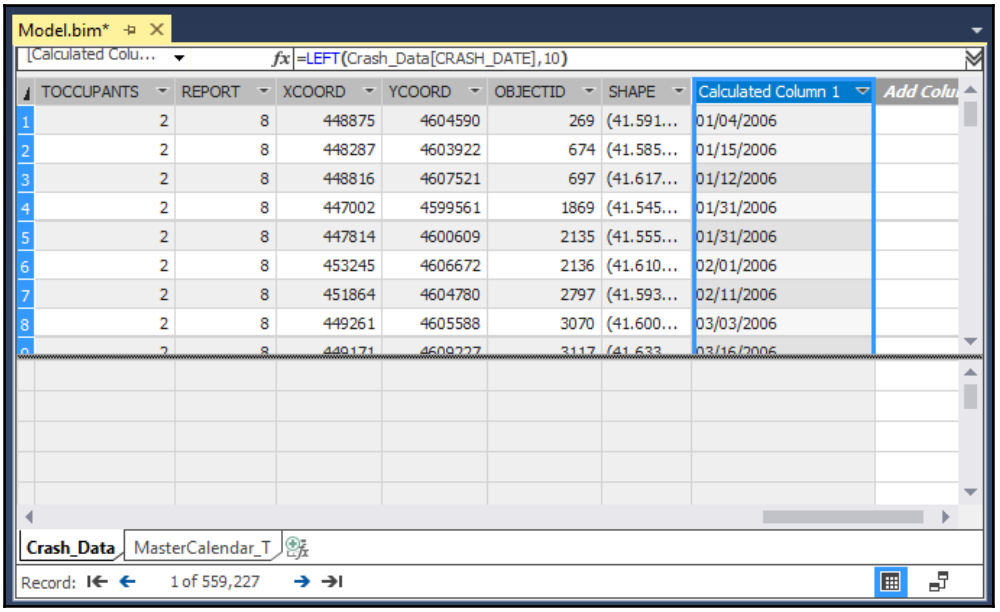

Options
Search Options (Ctrl+E)
Projects and Solutions
Source Control
Text Editor
Debugging
Performance Tools
Analysis Services Tabular Designers
Deployment
New project settings
Workspace Database
Business Intelligence Designers
Database Tools
Graphics Diagnostics
NuGet Package Manager
SQL Server Tools
Text Templating
Web Forms Designer
Web Performance Test Tools
Settings are applied only to new tabular projects
Default deployment server:
localhost
Test Connection
OK
Cancel

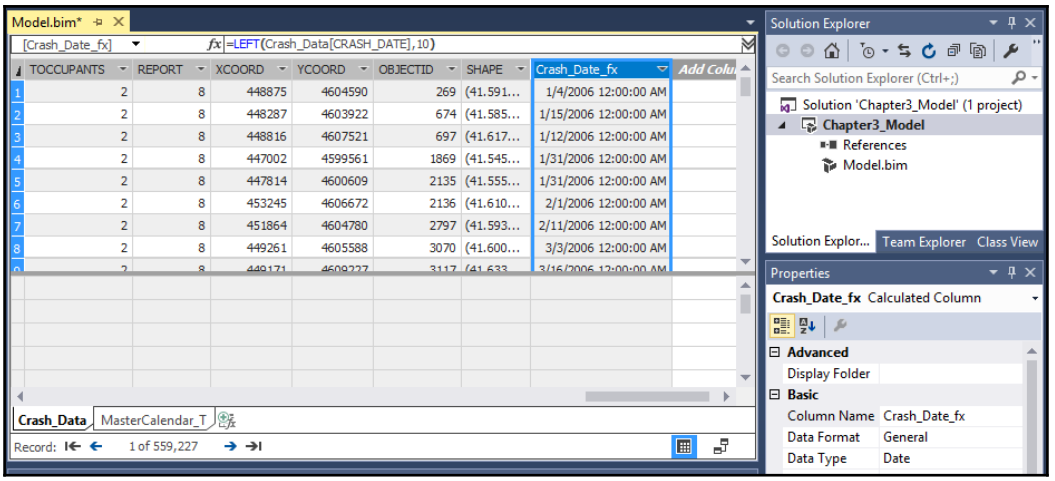

Chapter2_Model - Microsoft Visual Studio
File
Edit
View
Project
Build
Debug
Model
Table
Column
Server Explorer
Toolbox
Add New Item... Ctrl+Shift+A
Add Existing Item... Shift+Alt+A
Exclude From Project
Show All Files
Add Connected Service...
Set as StartUp Project
Manage NuGet Packages...
Refresh Project Toolbox Items
Chapter2_Model Properties...

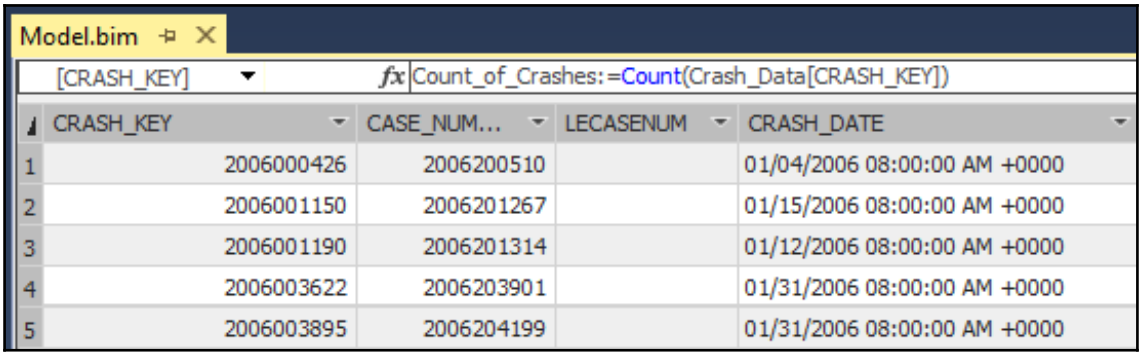
Chapter 3: Tabular Model Building

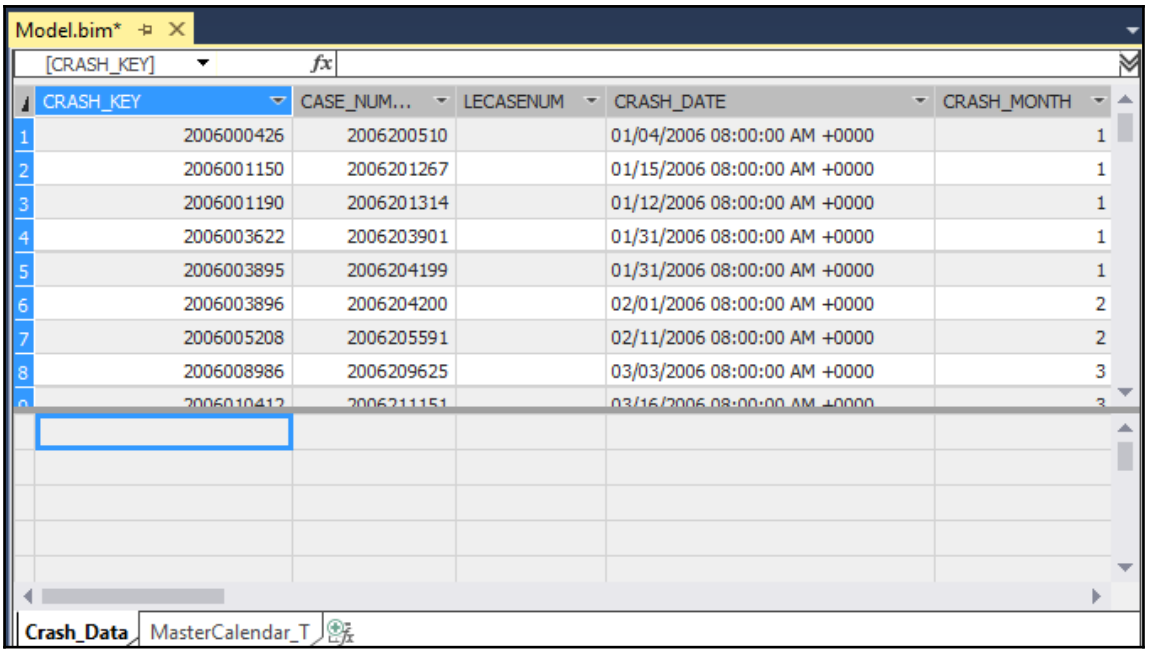


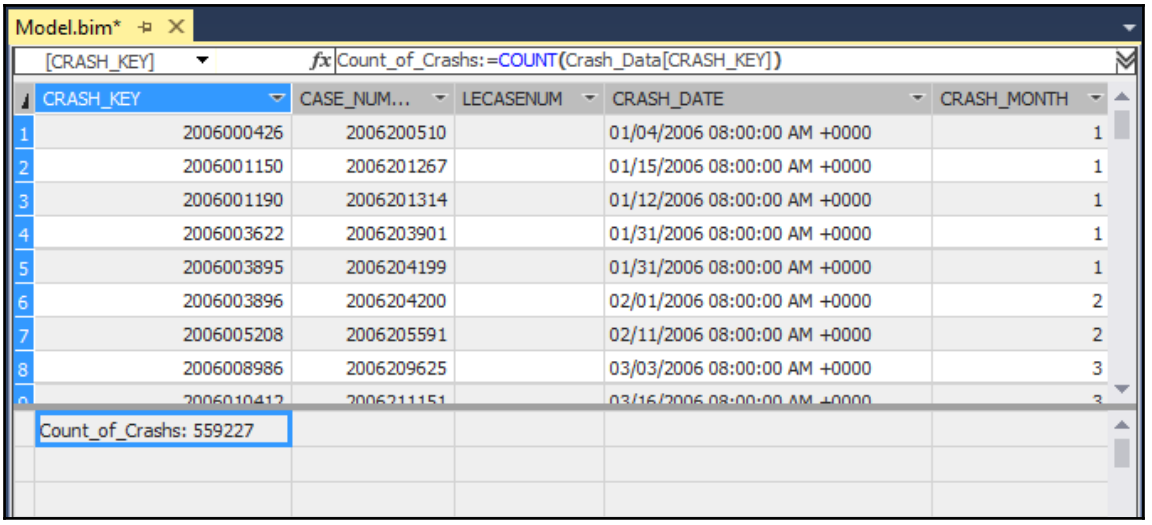

Model.bim*
VEHICLES
TOCCUPANTS
REPORT
XCOORD
YCOORD
OBJECTID
SHAPE
Add Column
1 2 2 8 448875 4604590 269 (41.591...
2 2 2 8 448287 4603922 674 (41.585...
3 2 2 8 448816 4607521 697 (41.617...
4 2 2 8 447002 4599561 1869 (41.545...
5 2 2 8 447814 4600609 2135 (41.555...
6 2 2 8 453245 4606672 2136 (41.610...
7 2 2 8 451864 4604780 2797 (41.593...
8 2 2 8 449261 4605588 3070 (41.600...
Crash_Data
MasterCalendar_T
Record: 1 of 559,227

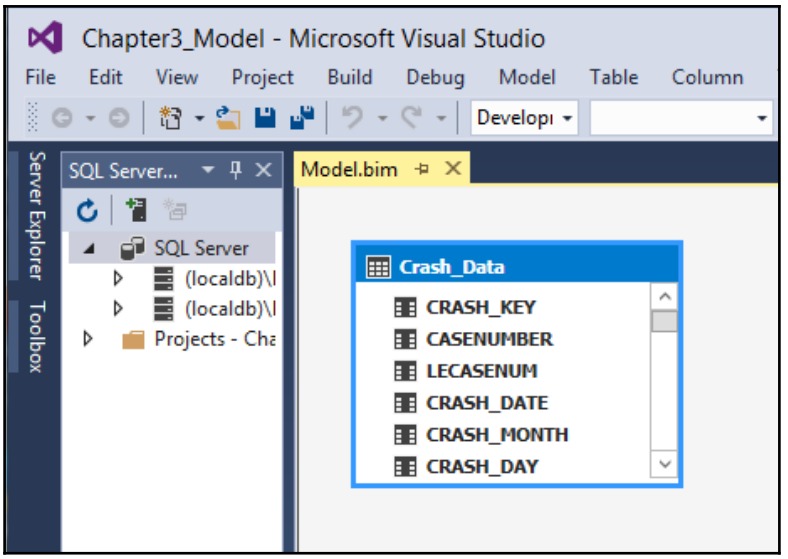

Model.bim*
[Calculated Colu...
=LEFT(Crash_Data[CRASH_DATE],10)
TOCCUPANTS
REPORT
XCOORD
YCOORD
OBJECTID
SHAPE
Calculated Column 1
Add Colu
1 2 8 448875 4604590 269 (41.591... 01/04/2006
2 2 8 448287 4603922 674 (41.585... 01/15/2006
3 2 8 448816 4607521 697 (41.617... 01/12/2006
4 2 8 447002 4599561 1869 (41.545... 01/31/2006
5 2 8 447814 4600609 2135 (41.555... 01/31/2006
6 2 8 453245 4606672 2136 (41.610... 02/01/2006
7 2 8 451864 4604780 2797 (41.593... 02/11/2006
8 2 8 449261 4605588 3070 (41.600... 03/03/2006
Crash_Data
MasterCalendar_T
Record: 1 of 559,227

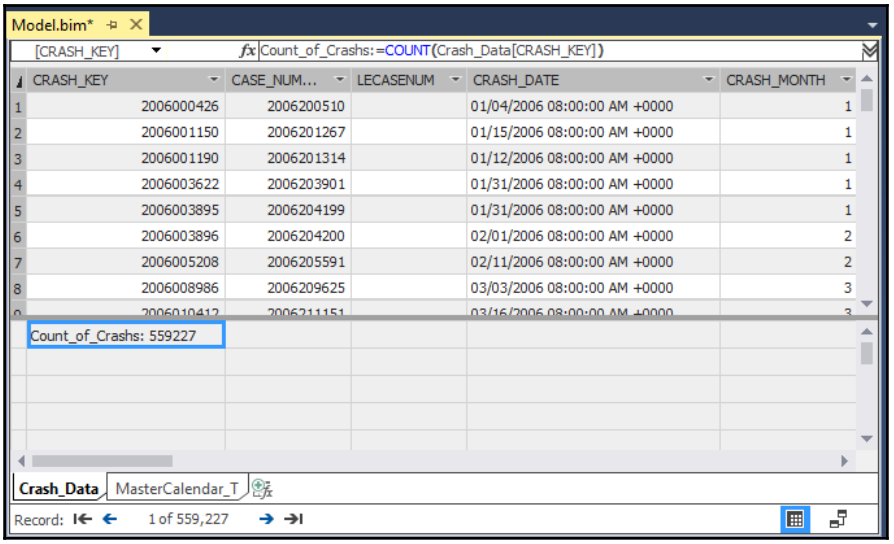

Model.bim*
[Crash_Date_fx]
=LEFT(Crash_Data[CRASH_DATE],10)
TOCCUPANTS
REPORT
XCOORD
YCOORD
OBJECTID
SHAPE
Crash_Date_fx
1 2 8 448875 4604590 269 (41.591... 1/4/2006 12:00:00 AM
2 2 8 448287 4603922 674 (41.585... 1/15/2006 12:00:00 AM
3 2 8 448816 4607521 697 (41.617... 1/12/2006 12:00:00 AM
4 2 8 447002 4599561 1869 (41.545... 1/31/2006 12:00:00 AM
5 2 8 447814 4600609 2135 (41.555... 1/31/2006 12:00:00 AM
6 2 8 453245 4606672 2136 (41.610... 2/1/2006 12:00:00 AM
7 2 8 451864 4604780 2797 (41.593... 2/11/2006 12:00:00 AM
8 2 8 449261 4605588 3070 (41.600... 3/3/2006 12:00:00 AM
Crash_Data
MasterCalendar_T
Record: 1 of 559,227
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter3_Model' (1 project)
Chapter3_Model
References
Model.bim
Solution Explor...
Team Explorer
Class View
Properties
Crash_Date_fx Calculated Column
Advanced
Display Folder
Basic
Column Name Crash_Date_fx
Data Format General
Data Type Date

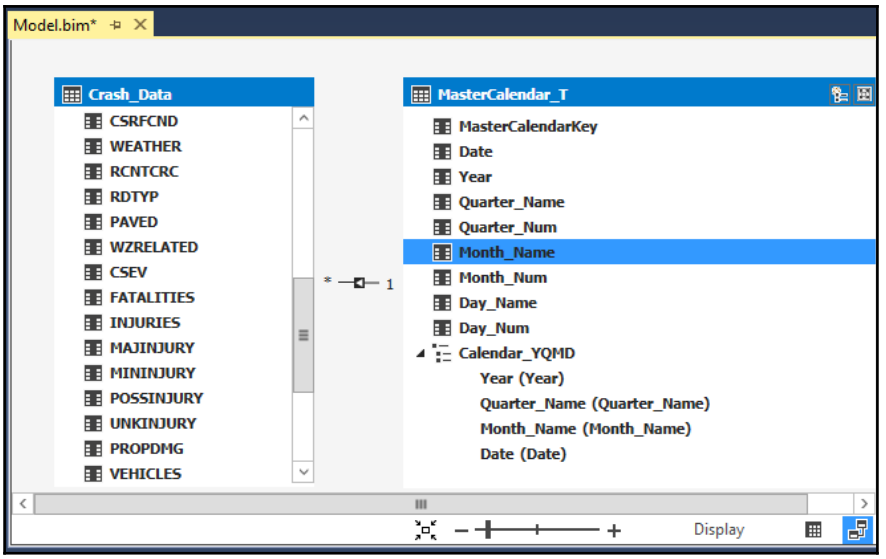

Model.bim
[CRASH_KEY]
Count_of_Crashes:=Count(Crash_Data[CRASH_KEY])
CRASH_KEY CASE_NUM... LECASENUM CRASH_DATE
1 2006000426 2006200510 01/04/2006 08:00:00 AM +0000
2 2006001150 2006201267 01/15/2006 08:00:00 AM +0000
3 2006001190 2006201314 01/12/2006 08:00:00 AM +0000
4 2006003622 2006203901 01/31/2006 08:00:00 AM +0000
5 2006003895 2006204199 01/31/2006 08:00:00 AM +0000

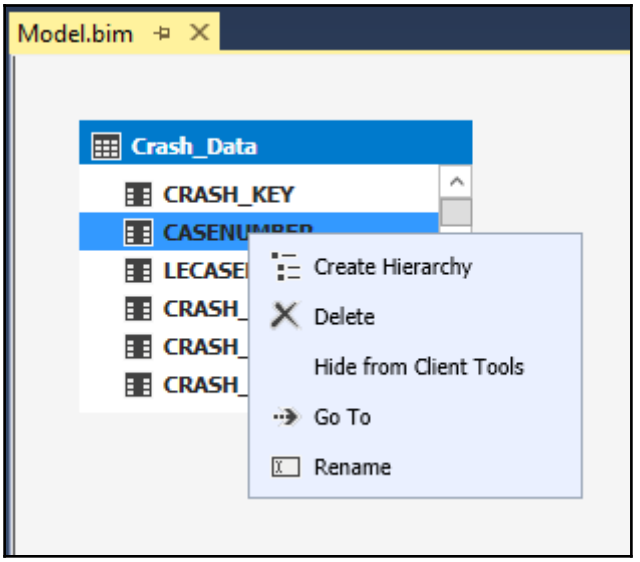

Model.bim*
[CRASH_KEY]
fx
CRASH_KEY
CASE_NUM...
LECASENUM
CRASH_DATE
CRASH_MONTH
1 2006000426 2006200510 01/04/2006 08:00:00 AM +0000 1
2 2006001150 2006201267 01/15/2006 08:00:00 AM +0000 1
3 2006001190 2006201314 01/12/2006 08:00:00 AM +0000 1
4 2006003622 2006203901 01/31/2006 08:00:00 AM +0000 1
5 2006003895 2006204199 01/31/2006 08:00:00 AM +0000 1
6 2006003896 2006204200 02/01/2006 08:00:00 AM +0000 2
7 2006005208 2006205591 02/11/2006 08:00:00 AM +0000 2
8 2006008986 2006209625 03/03/2006 08:00:00 AM +0000 3
Crash_Data
MasterCalendar_T

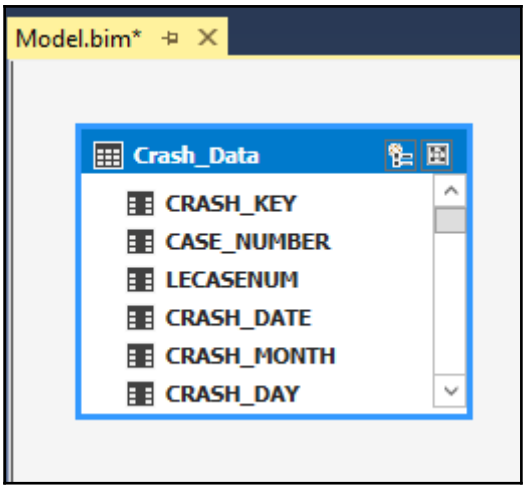

Model.bim*
[CRASH_KEY]
fx
Count_of_Crashs:=COUNT(Crash_Data[CRASH_KEY])
CRASH_KEY
CASE_NUM...
LECASENUM
CRASH_DATE
CRASH_MONTH
1 2006000426 2006200510 01/04/2006 08:00:00 AM +0000 1
2 2006001150 2006201267 01/15/2006 08:00:00 AM +0000 1
3 2006001190 2006201314 01/12/2006 08:00:00 AM +0000 1
4 2006003622 2006203901 01/31/2006 08:00:00 AM +0000 1
5 2006003895 2006204199 01/31/2006 08:00:00 AM +0000 1
6 2006003896 2006204200 02/01/2006 08:00:00 AM +0000 2
7 2006005208 2006205591 02/11/2006 08:00:00 AM +0000 2
8 2006008986 2006209625 03/03/2006 08:00:00 AM +0000 3
Count_of_Crashs: 559227


Chapter3_Model - Microsoft Visual Studio
File
Edit
View
Project
Build
Debug
Model
Table
Column
Server Explorer
Toolbox
SQL Server...
SQL Server
(localdb)\I
(localdb)\I
Projects - Cha
Model.bim
Crash_Data
CRASH_KEY
CASENUMBER
LECASENUM
CRASH_DATE
CRASH_MONTH
CRASH_DAY


Model.bim*
[CRASH_KEY]
Count_of_Crashs:=COUNT(Crash_Data[CRASH_KEY])
CRASH_KEY
CASE_NUM...
LECASENUM
CRASH_DATE
CRASH_MONTH
1 2006000426 2006200510 01/04/2006 08:00:00 AM +0000 1
2 2006001150 2006201267 01/15/2006 08:00:00 AM +0000 1
3 2006001190 2006201314 01/12/2006 08:00:00 AM +0000 1
4 2006003622 2006203901 01/31/2006 08:00:00 AM +0000 1
5 2006003895 2006204199 01/31/2006 08:00:00 AM +0000 1
6 2006003896 2006204200 02/01/2006 08:00:00 AM +0000 2
7 2006005208 2006205591 02/11/2006 08:00:00 AM +0000 2
8 2006008986 2006209625 03/03/2006 08:00:00 AM +0000 3
Count_of_Crashs: 559227
Crash_Data
MasterCalendar_T
Record:
1 of 559,227


Model.bim*
Crash_Data
CSRFCND
WEATHER
RCNTCRC
RDTYP
PAVED
WZRELATED
CSEV
FATALITIES
INJURIES
MAJINJURY
MININJURY
POSSINJURY
UNKINJURY
PROPDMG
VEHICLES
* 1
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Date (Date)
Display


Model.bim
Crash_Data
CRASH_KEY
CASENUMBER
LECASE
CRASH_
CRASH_
CRASH_
Create Hierarchy
Delete
Hide from Client Tools
Go To
Rename


Model.bim*
Crash_Data
CRASH_KEY
CASE_NUMBER
LECASENUM
CRASH_DATE
CRASH_MONTH
CRASH_DAY

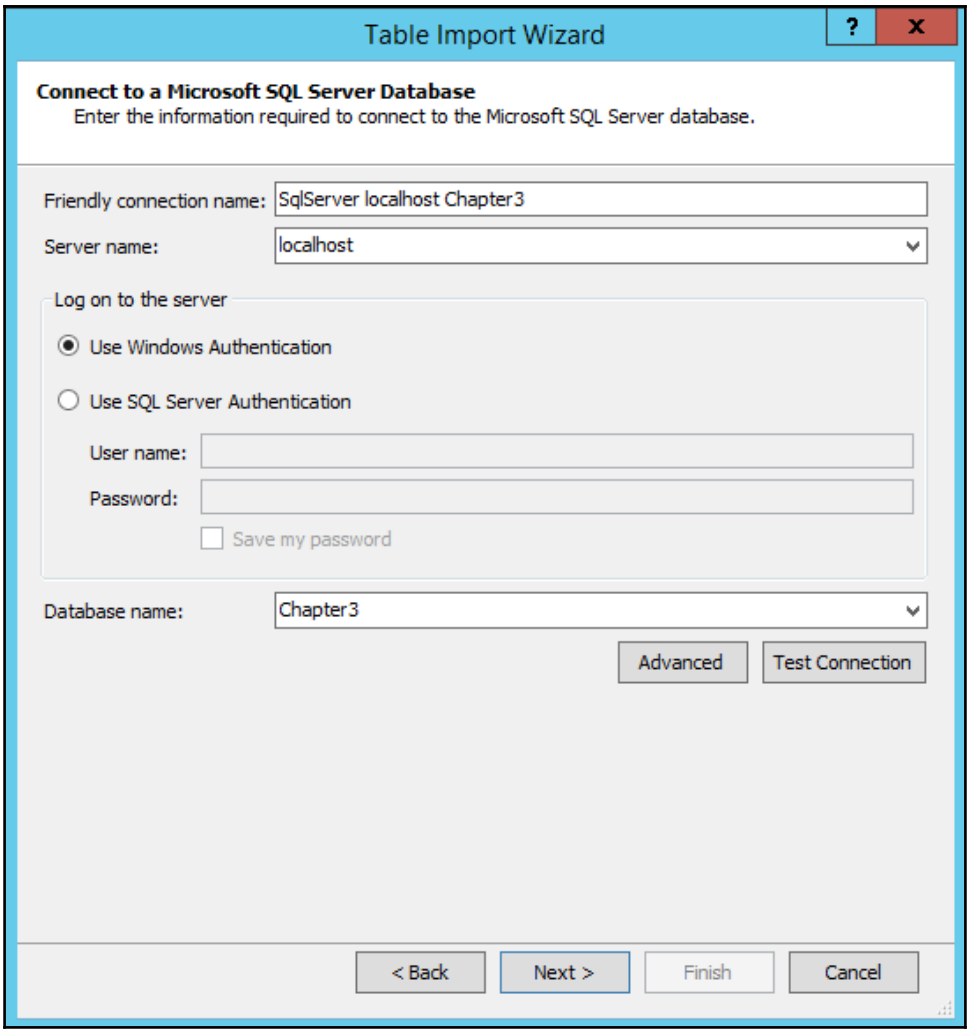


Table Import Wizard
?
X
Connect to a Microsoft SQL Server Database
Enter the information required to connect to the Microsoft SQL Server database.
Friendly connection name:
SqlServer localhost Chapter3
Server name:
localhost
Log on to the server
Use Windows Authentication
Use SQL Server Authentication
User name:
Password:
Save my password
Database name:
Chapter3
Advanced
Test Connection
< Back
Next >
Finish
Cancel

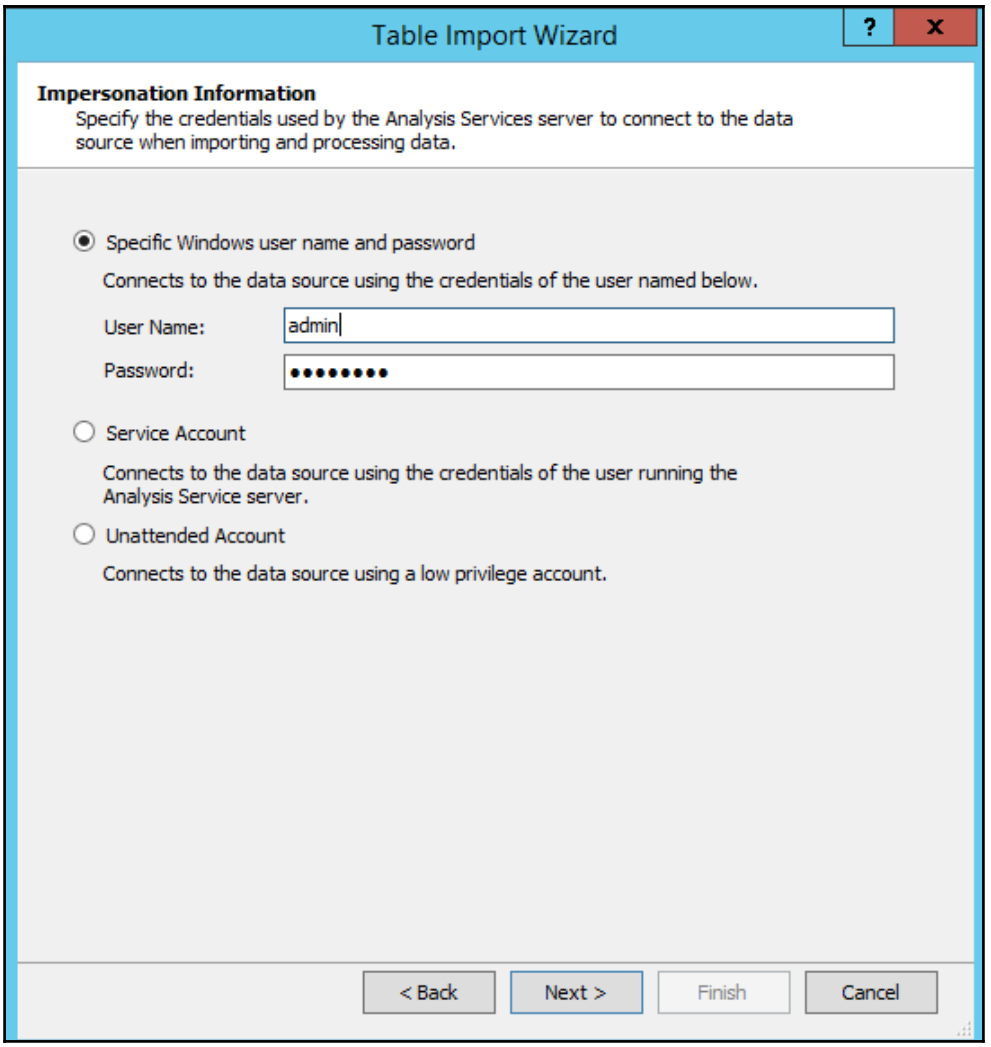
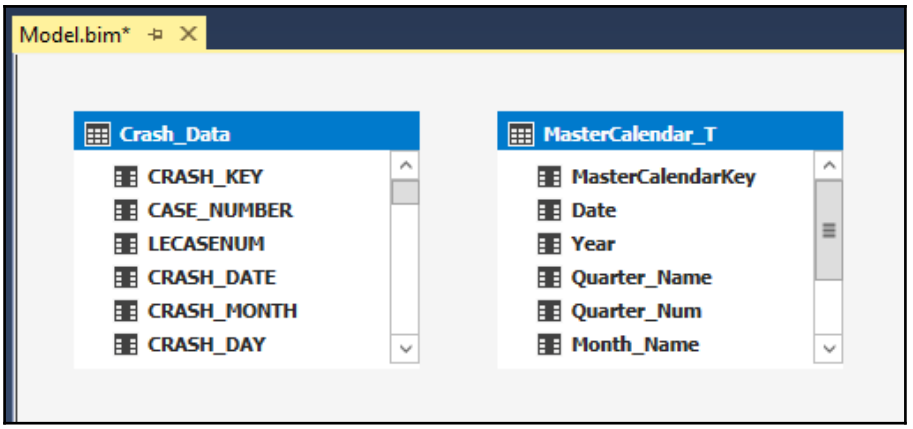


Table Import Wizard
?
x
Impersonation Information
Specify the credentials used by the Analysis Services server to connect to the data source when importing and processing data.
Specific Windows user name and password
Connects to the data source using the credentials of the user named below.
User Name:
admin
Password:
••••••••
Service Account
Connects to the data source using the credentials of the user running the Analysis Service server.
Unattended Account
Connects to the data source using a low privilege account.
< Back
Next >
Finish
Cancel


Model.bim*
Crash_Data
CRASH_KEY
CASE_NUMBER
LECASENUM
CRASH_DATE
CRASH_MONTH
CRASH_DAY
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name

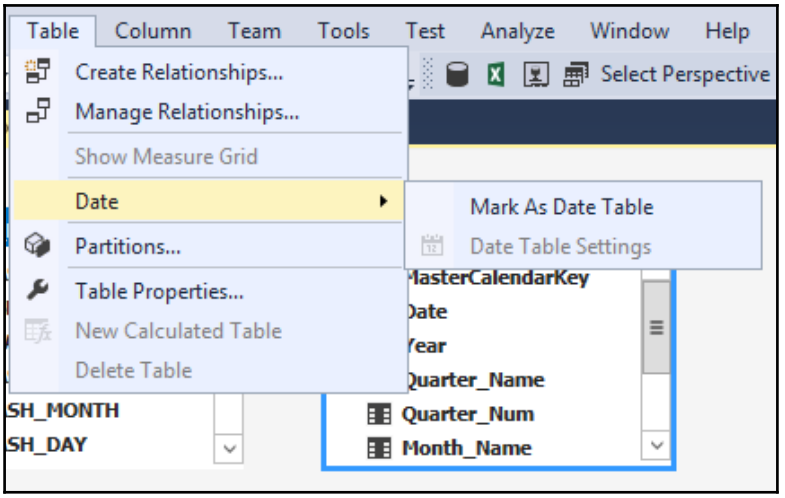
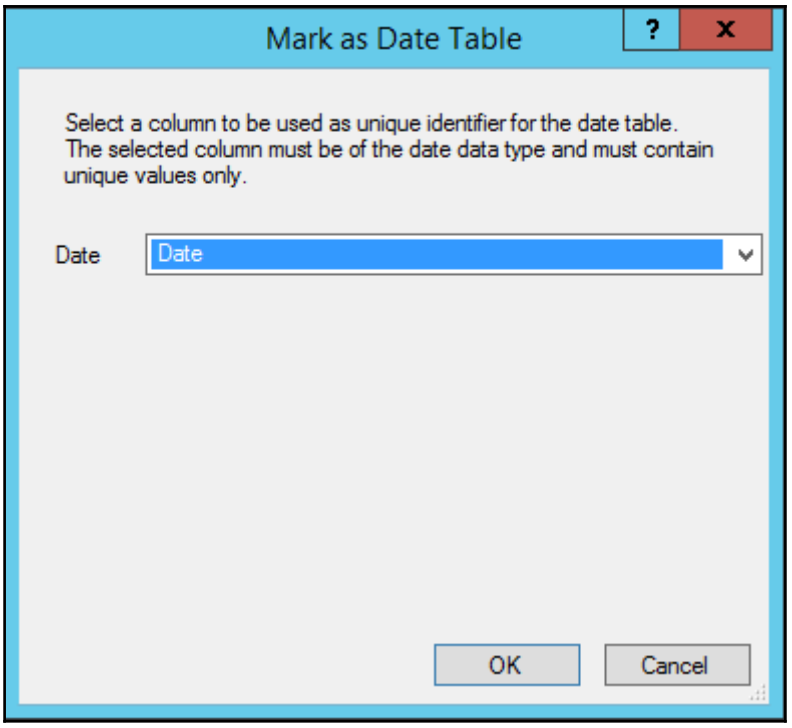
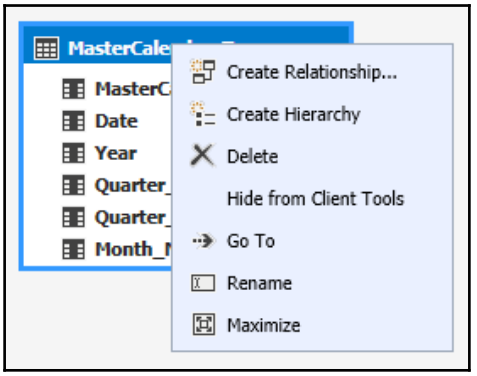
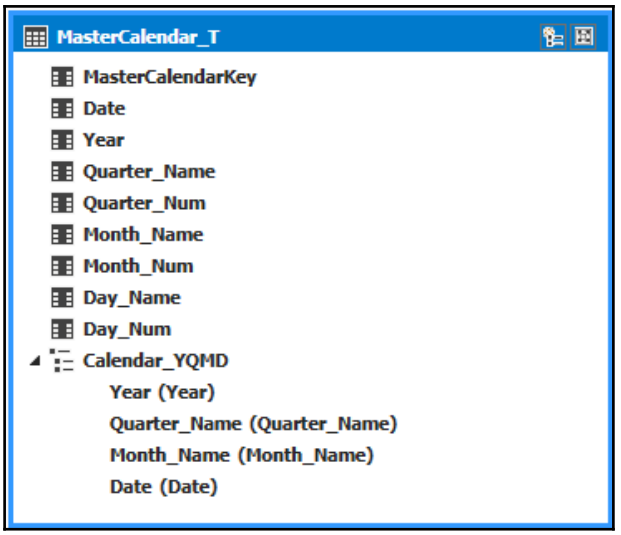
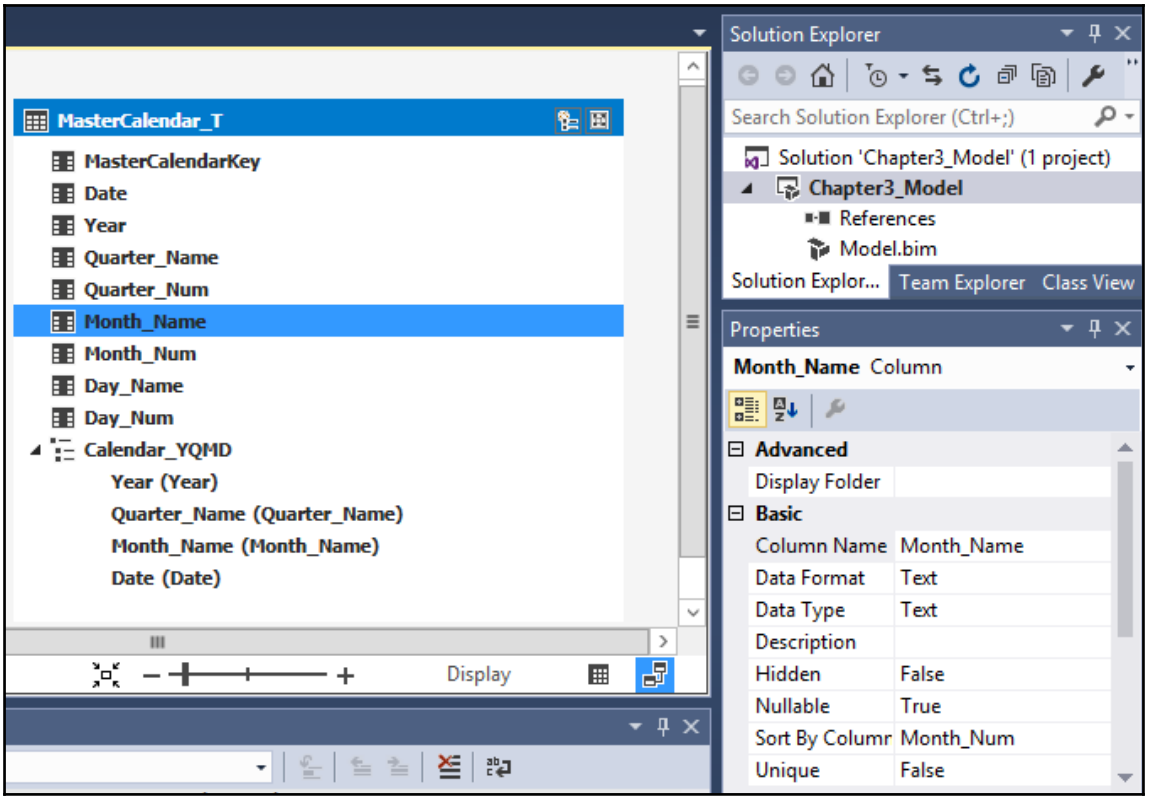


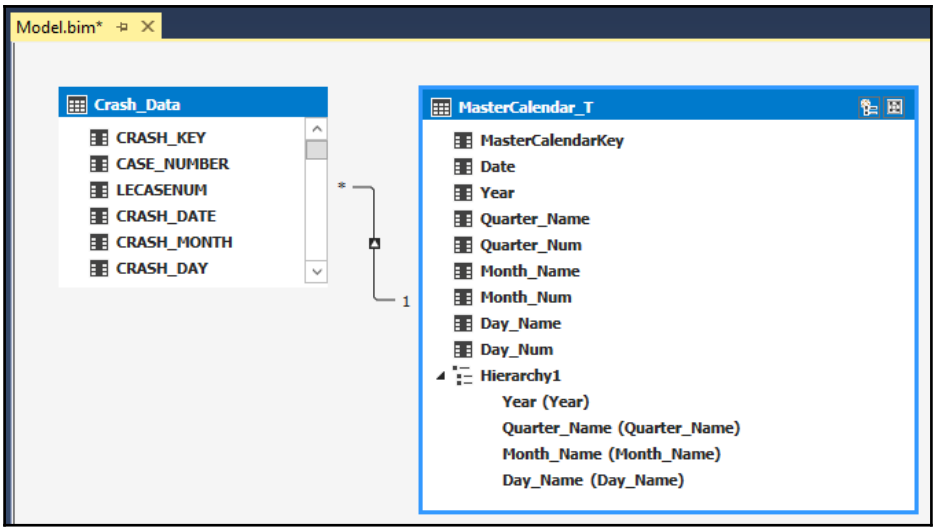
Table
Column
Team
Tools
Test
Analyze
Window
Help
Create Relationships...
Manage Relationships...
Show Measure Grid
Date
Partitions...
Table Properties...
New Calculated Table
Delete Table
Mark As Date Table
Date Table Settings
Select Perspective
SH_MONTH
SH_DAY
Quarter_Num
Month_Name

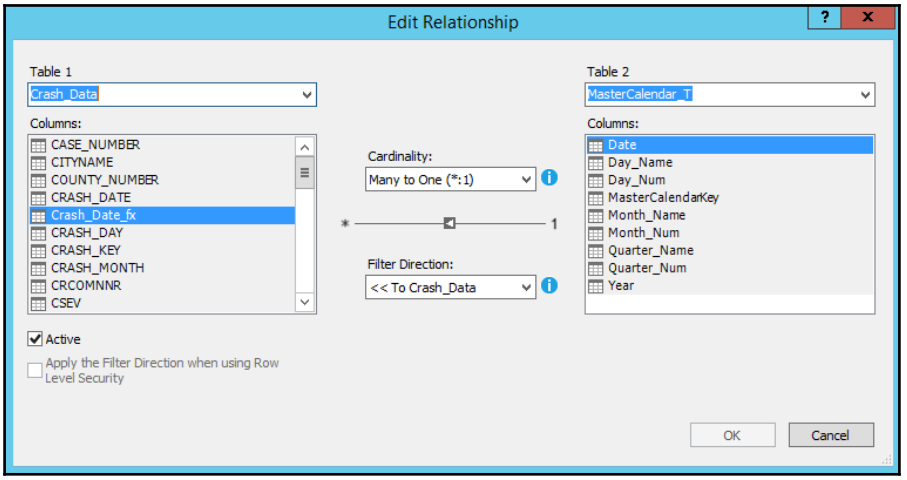

Mark as Date Table
Select a column to be used as unique identifier for the date table.
The selected column must be of the date data type and must contain unique values only.
Date
Date
OK
Cancel

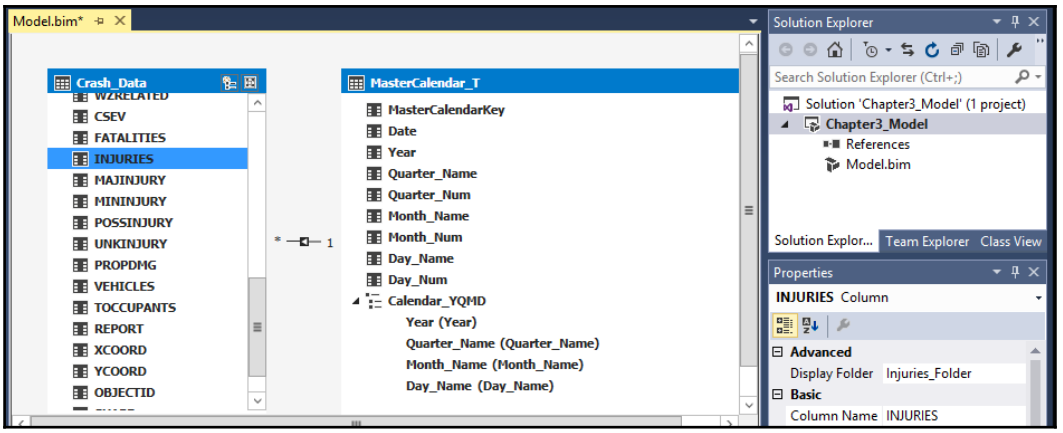

Date
Year
Create Relationship...
Create Hierarchy
Delete
Hide from Client Tools
Go To
Rename
Maximize

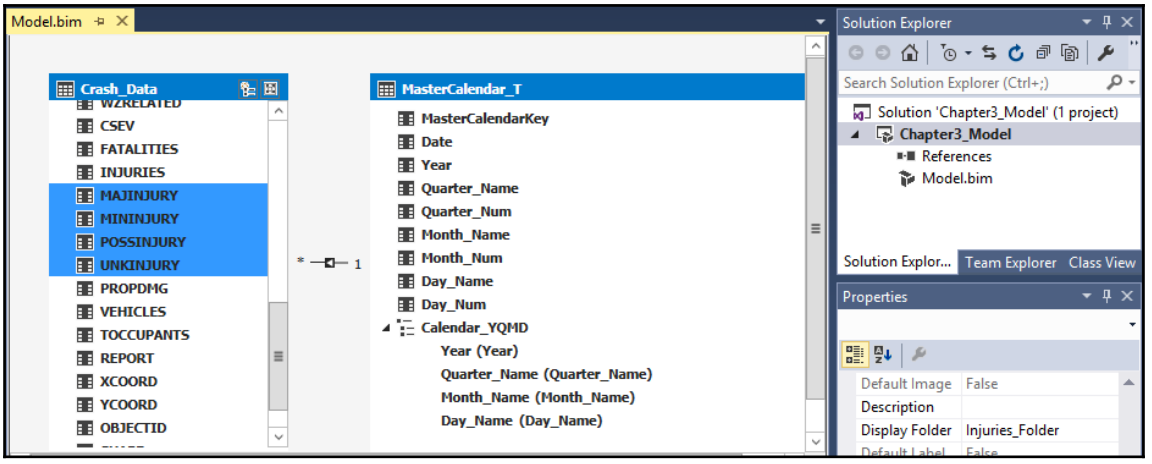

MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Date (Date)

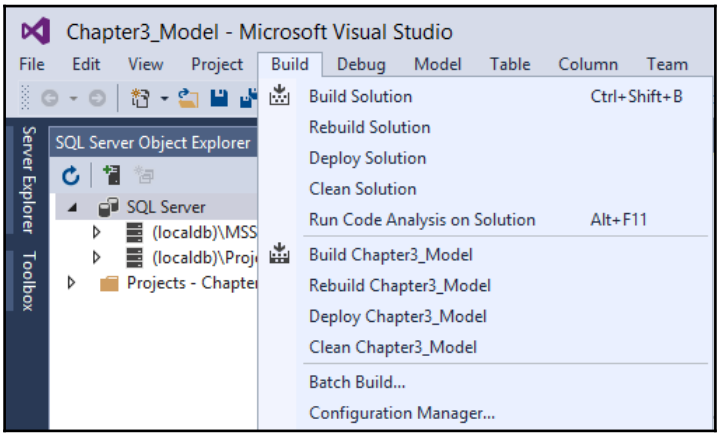

MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Date (Date)
Display
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter3_Model' (1 project)
Chapter3_Model
References
Model.bim
Solution Explor...
Team Explorer
Class View
Properties
Month_Name Column
Advanced
Display Folder
Basic
Column Name Month_Name
Data Format Text
Data Type Text
Description
Hidden False
Nullable True
Sort By Columr Month_Num
Unique False

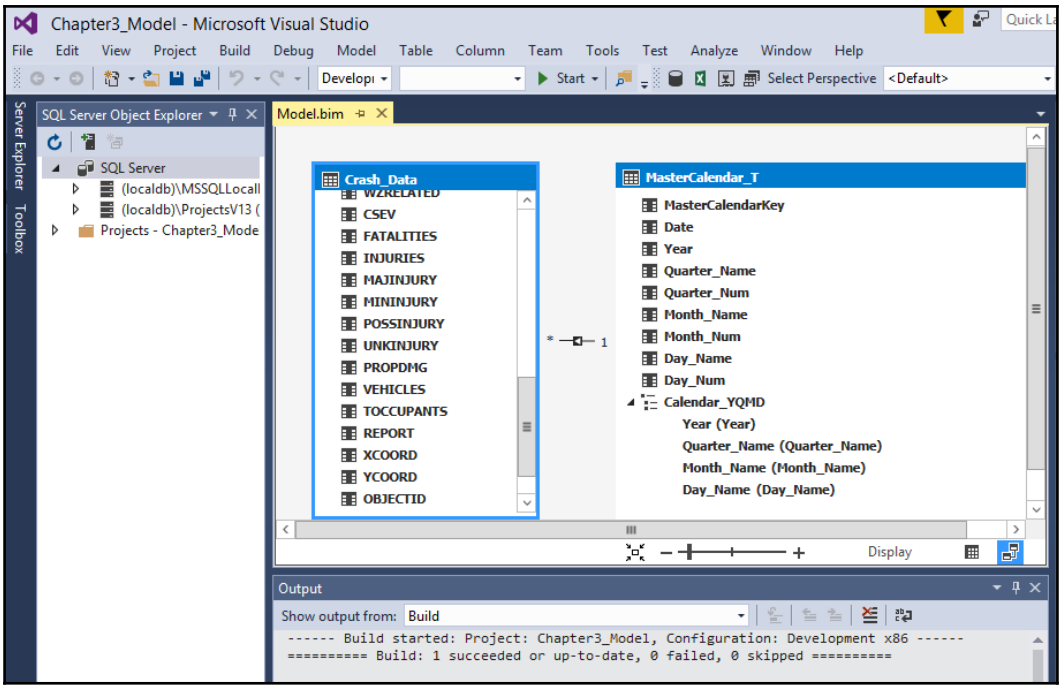

Model.bim*
Crash_Data
CRASH_KEY
CASE_NUMBER
LECASENUM
CRASH_DATE
CRASH_MONTH
CRASH_DAY
*
1
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Hierarchy1
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Day_Name (Day_Name)

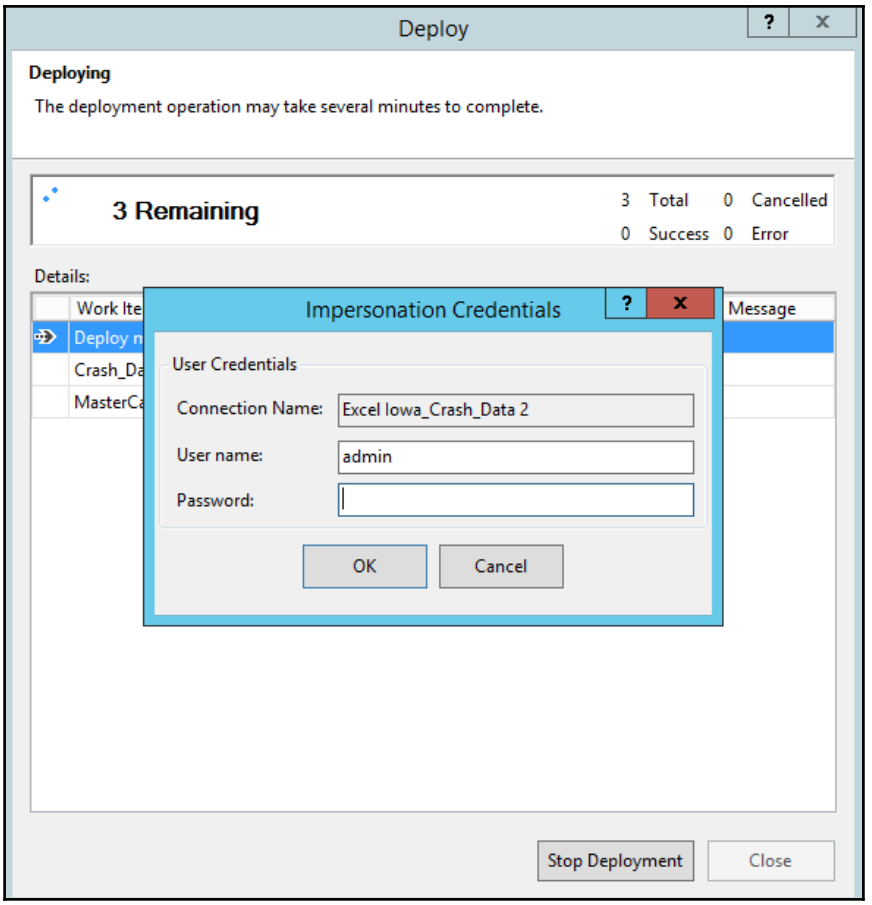

Edit Relationship
Table 1
Crash_Data
Columns:
CASE_NUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
Crash_Date_fx
CRASH_DAY
CRASH_KEY
CRASH_MONTH
CRCOMNNR
CSEV
Cardinality:
Many to One (*:1)
*
1
Filter Direction:
<< To Crash_Data
Table 2
MasterCalendar_T
Columns:
Date
Day_Name
Day_Num
MasterCalendarKey
Month_Name
Month_Num
Quarter_Name
Quarter_Num
Year
Active
Apply the Filter Direction when using Row Level Security
OK
Cancel

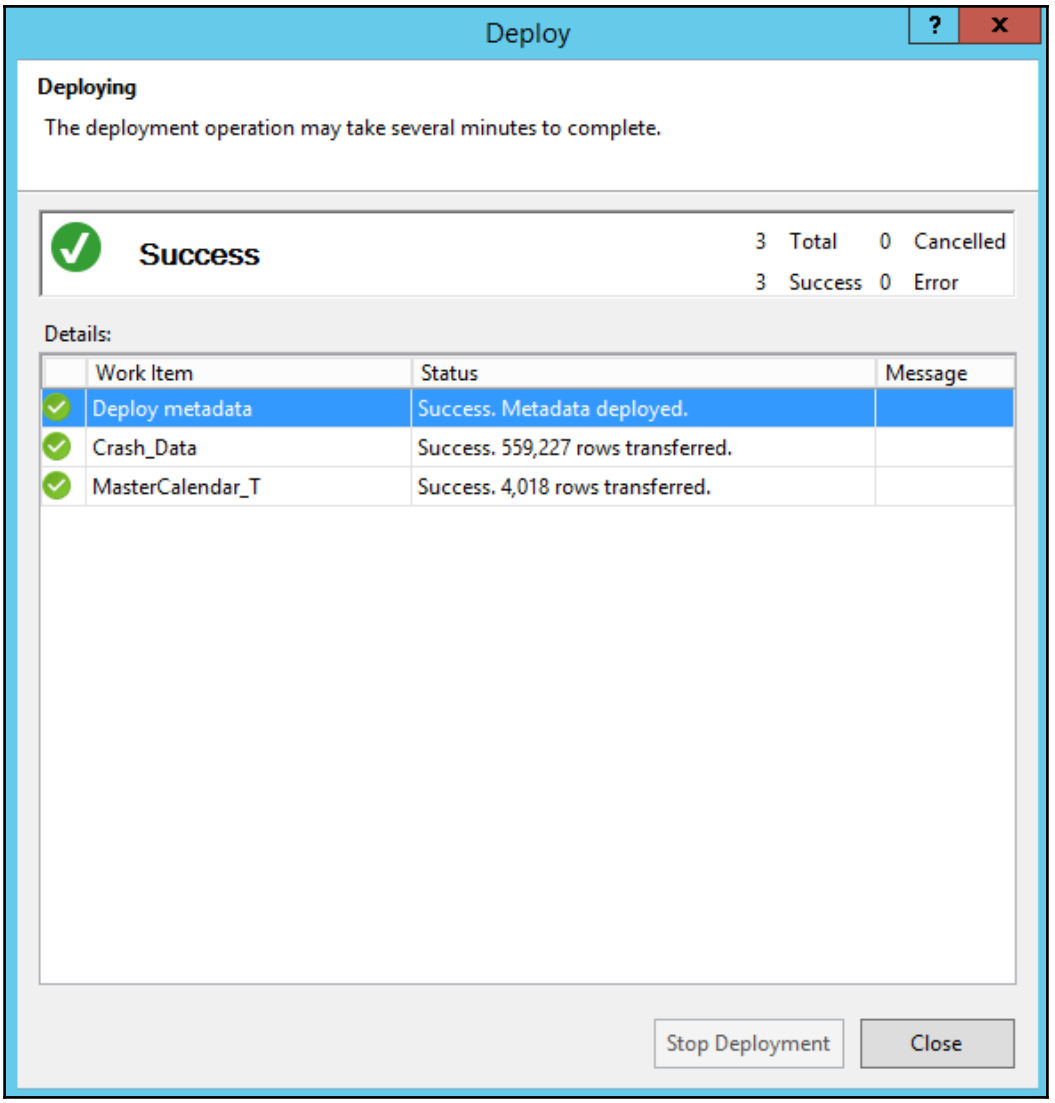

Model.bim*
Crash_Data
CSEV
FATALITIES
INJURIES
MAJINJURY
MININJURY
POSSINJURY
UNKINJURY
PROPDMG
VEHICLES
TOCCUPANTS
REPORT
XCOORD
YCOORD
OBJECTID
* 1
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Day_Name (Day_Name)
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter3_Model' (1 project)
Chapter3_Model
References
Model.bim
Solution Explor...
Team Explorer
Class View
Properties
INJURIES Column
Advanced
Display Folder
Injuries_Folder
Basic
Column Name
INJURIES

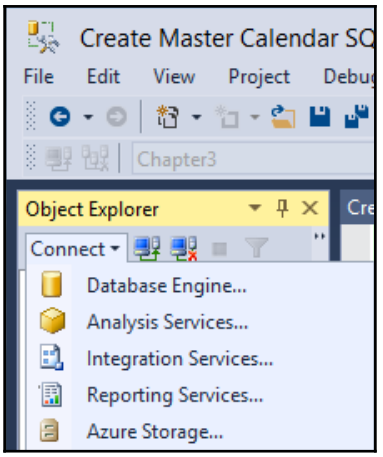

Model.bim
Crash_Data
CSEV
FATALITIES
INJURIES
MAJINJURY
MININJURY
POSSINJURY
UNKINJURY
PROPDMG
VEHICLES
TOCCUPANTS
REPORT
XCOORD
YCOORD
OBJECTID
* 1
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Day_Name (Day_Name)
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter3_Model' (1 project)
Chapter3_Model
References
Model.bim
Solution Explor...
Team Explorer
Class View
Properties
Default Image
False
Description
Display Folder
Injuries_Folder

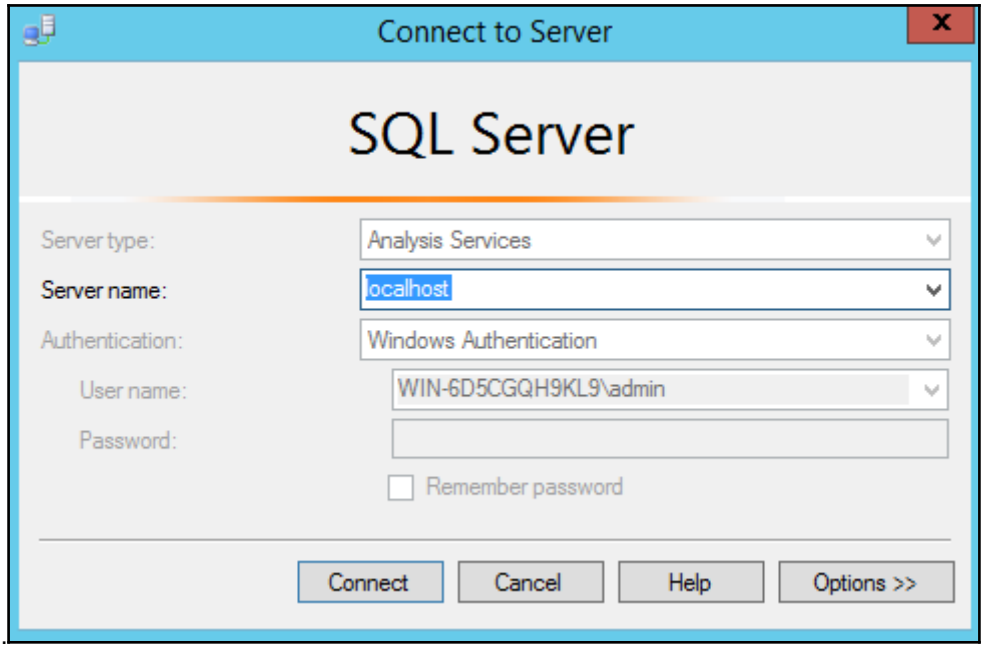

Chapter3_Model - Microsoft Visual Studio
File
Edit
View
Project
Build
Debug
Model
Table
Column
Team
Server Explorer
Toolbox
SQL Server Object Explorer
SQL Server
(localdb)\MSS
(localdb)\Proj
Projects - Chapte
Build Solution
Ctrl+Shift+B
Rebuild Solution
Deploy Solution
Clean Solution
Run Code Analysis on Solution
Alt+F11
Build Chapter3_Model
Rebuild Chapter3_Model
Deploy Chapter3_Model
Clean Chapter3_Model
Batch Build...
Configuration Manager...

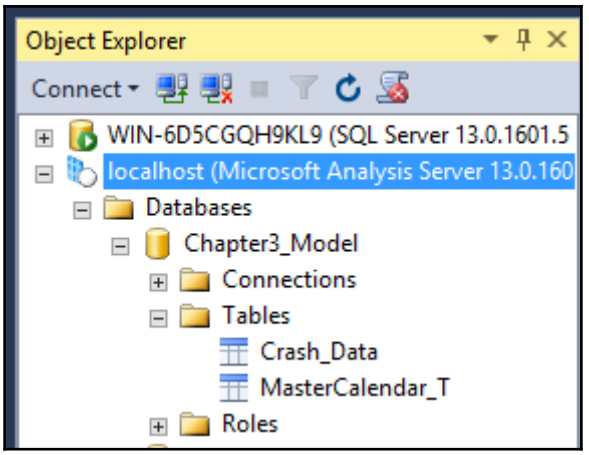

Chapter3_Model - Microsoft Visual Studio
File Edit View Project Build Debug Model Table Column Team Tools Test Analyze Window Help
Start
Select Perspective
<Default>
SQL Server Object Explorer
SQL Server
(localdb)\MSSQLLocall
(localdb)\ProjectsV13 (
Projects - Chapter3_Mode
Server Explorer
Toolbox
Model.bim
Crash_Data
CSEV
FATALITIES
INJURIES
MAJINJURY
MININJURY
POSSINJURY
UNKINJURY
PROPDMG
VEHICLES
TOCCUPANTS
REPORT
XCOORD
YCOORD
OBJECTID
* 1
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_Name)
Month_Name (Month_Name)
Day_Name (Day_Name)
Display
Output
Show output from: Build
------ Build started: Project: Chapter3_Model, Configuration: Development x86 ------
========== Build: 1 succeeded or up-to-date, 0 failed, 0 skipped ==========

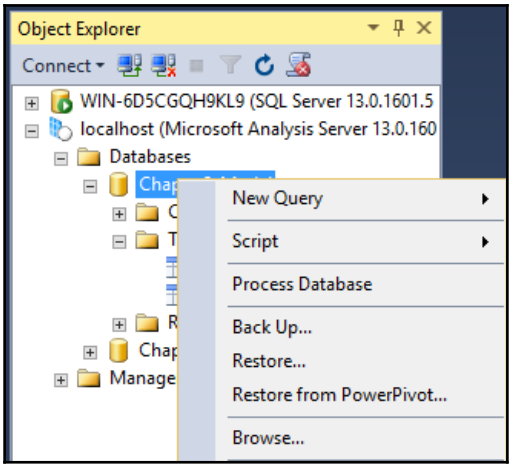

Deploy
Deploying
The deployment operation may take several minutes to complete.
3 Remaining
3 Total
0 Cancelled
0 Success
0 Error
Details:
Work Ite
Message
Deploy n
Crash_Da
MasterCa
Impersonation Credentials
User Credentials
Connection Name:
Excel Iowa_Crash_Data 2
User name:
admin
Password:
OK
Cancel
Stop Deployment
Close

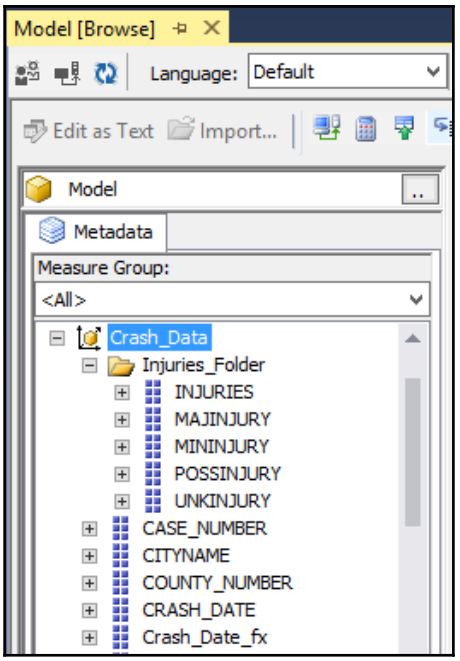

Deploy
Deploying
The deployment operation may take several minutes to complete.
Success
3 Total 0 Cancelled
3 Success 0 Error
Details:
Work Item
Status
Message
Deploy metadata
Success. Metadata deployed.
Crash_Data
Success. 559,227 rows transferred.
MasterCalendar_T
Success. 4,018 rows transferred.
Stop Deployment
Close

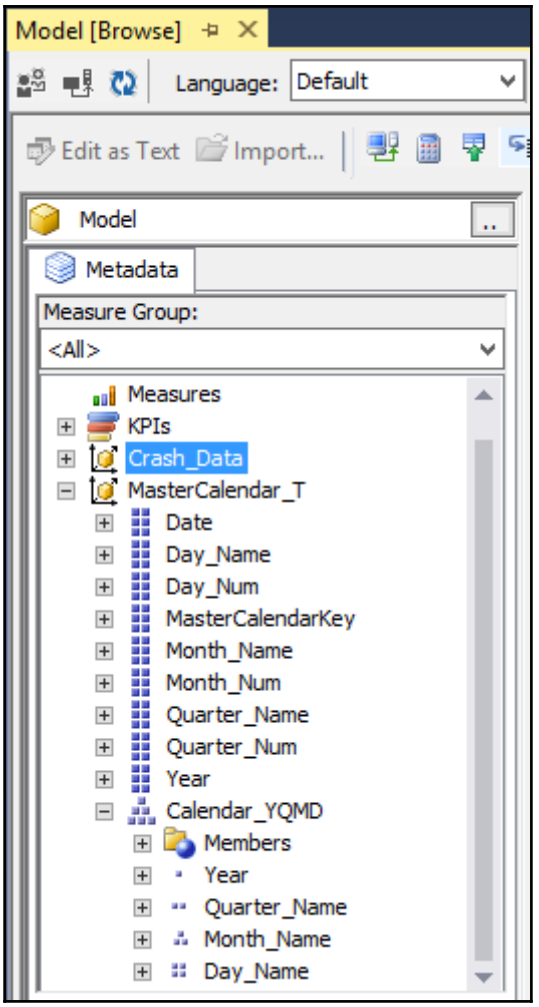

Create Master Calendar SQ
File
Edit
View
Project
Debu
Chapter3
Object Explorer
Connect
Database Engine...
Analysis Services...
Integration Services...
Reporting Services...
Azure Storage...

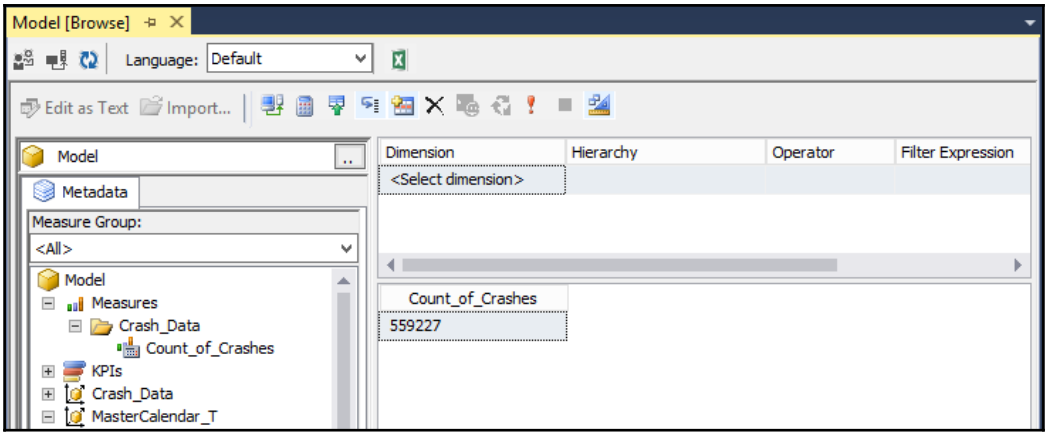

Connect to Server
SQL Server
Server type:
Analysis Services
Server name:
localhost
Authentication:
Windows Authentication
User name:
WIN-6D5CGQH9KL9\admin
Password:
Remember password
Connect
Cancel
Help
Options >>

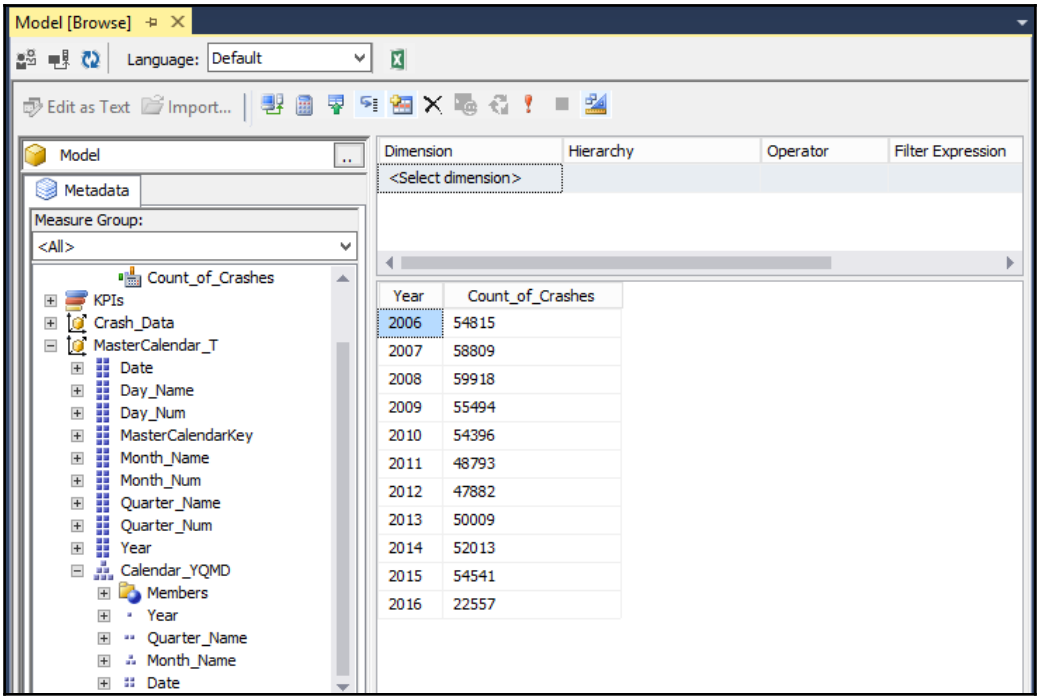

Object Explorer
Connect
WIN-6D5CGQH9KL9 (SQL Server 13.0.1601.5
localhost (Microsoft Analysis Server 13.0.160
Databases
Chapter3_Model
Connections
Tables
Crash_Data
MasterCalendar_T
Roles

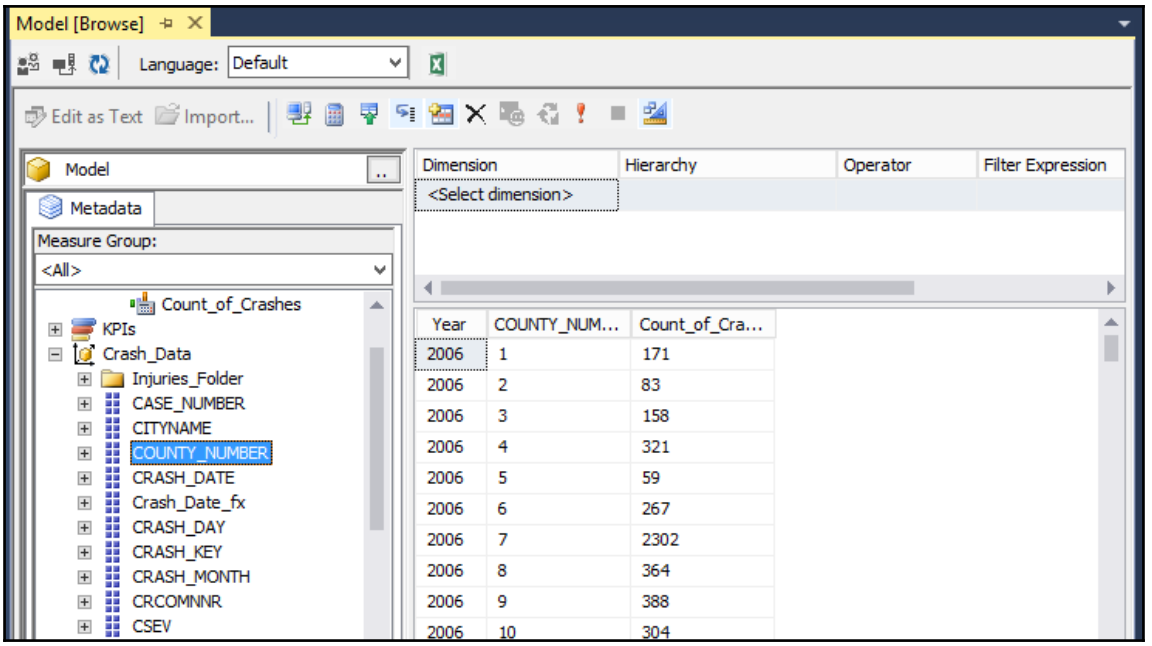

Object Explorer
Connect
WIN-6D5CGQH9KL9 (SQL Server 13.0.1601.5
localhost (Microsoft Analysis Server 13.0.160
Databases
New Query
Script
Process Database
Back Up...
Restore...
Restore from PowerPivot...
Browse...

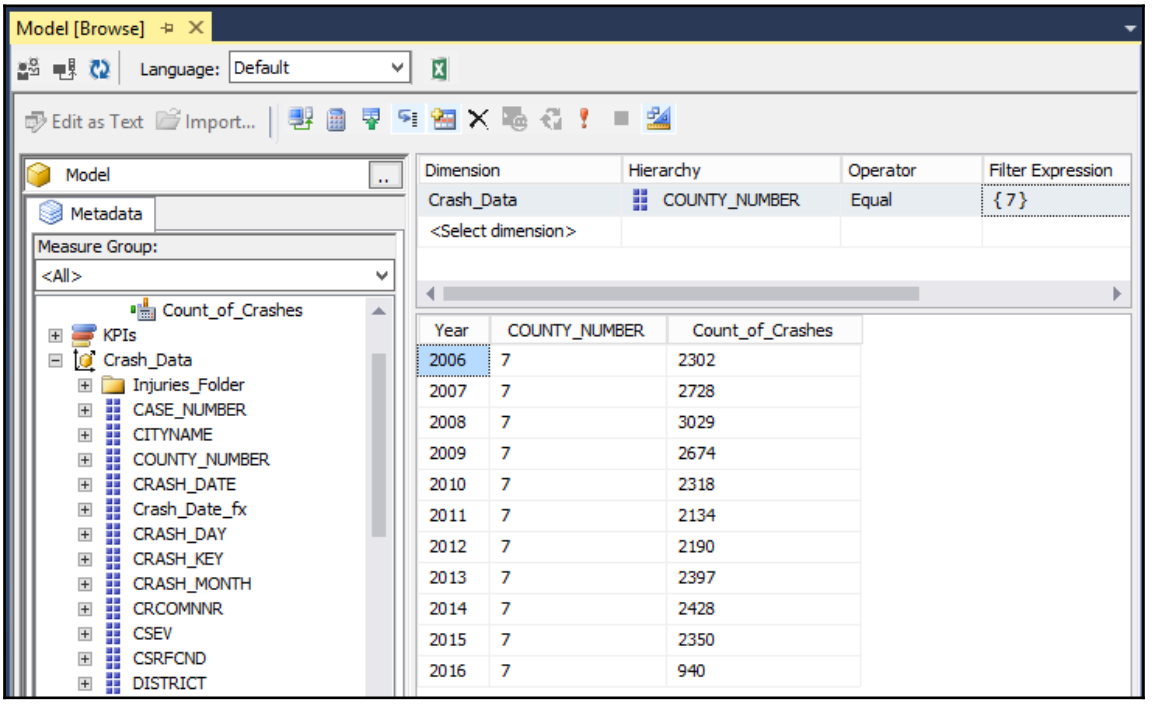

Model [Browse]
Language:
Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Crash_Data
Injuries_Folder
INJURIES
MAJINJURY
MININJURY
POSSINJURY
UNKINJURY
CASE_NUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
Crash_Date_fx

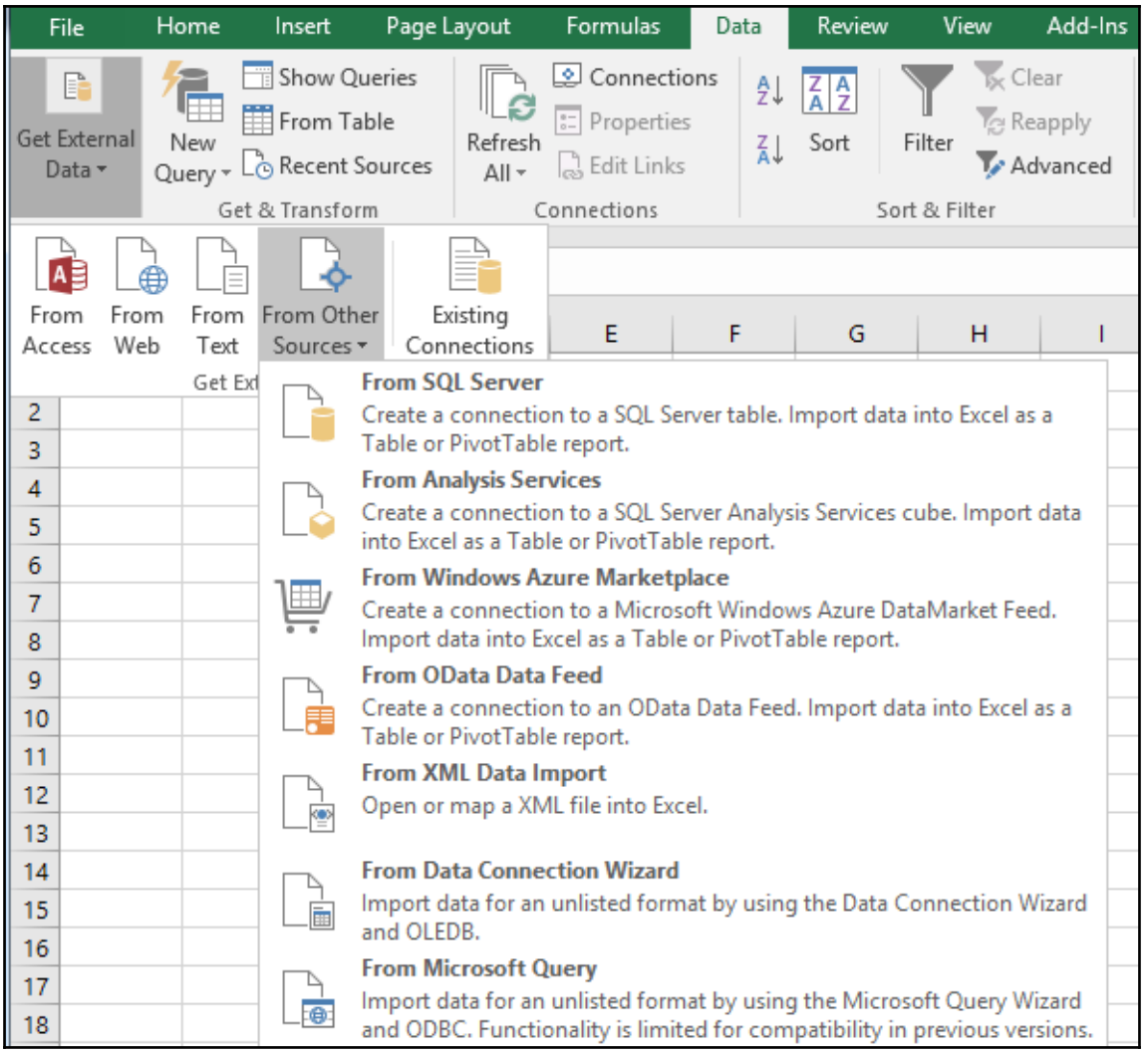

Model [Browse]
Language:
Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Measures
KPIs
Crash_Data
MasterCalendar_T
Date
Day_Name
Day_Num
MasterCalendarKey
Month_Name
Month_Num
Quarter_Name
Quarter_Num
Year
Calendar_YQMD
Members
Year
Quarter_Name
Month_Name
Day_Name

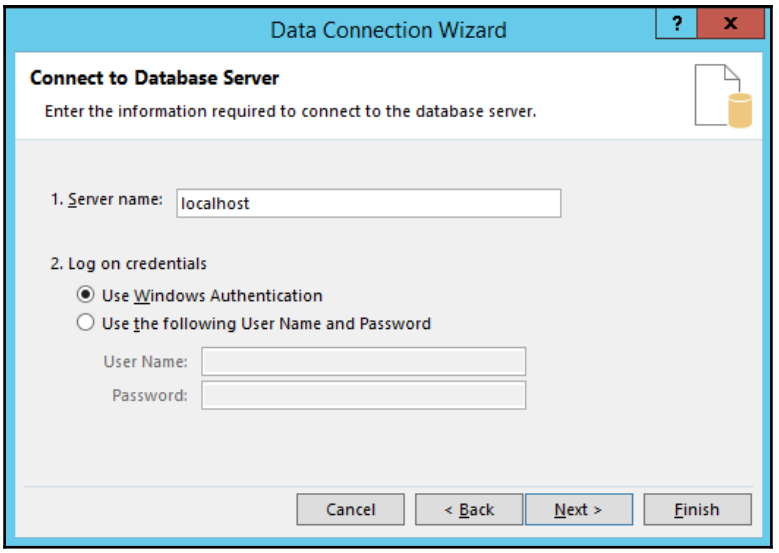

Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Model
Measures
Crash_Data
Count_of_Crashes
KPIs
Crash_Data
MasterCalendar_T
Dimension
Hierarchy
Operator
Filter Expression
<Select dimension>
Count_of_Crashes
559227

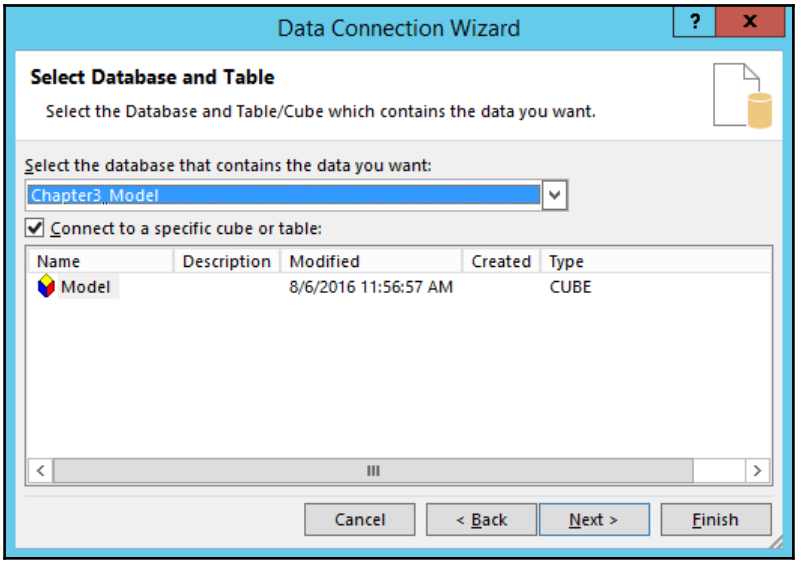

Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Count_of_Crashes
KPIs
Crash_Data
MasterCalendar_T
Date
Day_Name
Day_Num
MasterCalendarKey
Month_Name
Month_Num
Quarter_Name
Quarter_Num
Year
Calendar_YQMD
Members
Year
Quarter_Name
Month_Name
Date
Dimension
Hierarchy
Operator
Filter Expression
<Select dimension>
Year
Count_of_Crashes
2006 54815
2007 58809
2008 59918
2009 55494
2010 54396
2011 48793
2012 47882
2013 50009
2014 52013
2015 54541
2016 22557

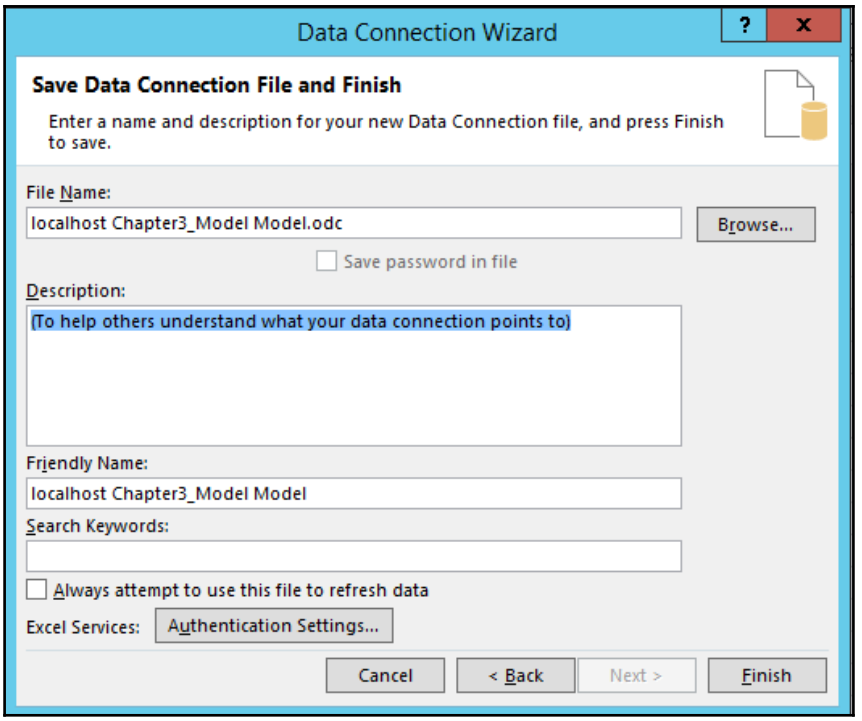

Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Count_of_Crashes
KPIs
Crash_Data
Injuries_Folder
CASE_NUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
Crash_Date_fx
CRASH_DAY
CRASH_KEY
CRASH_MONTH
CRCOMNNR
CSEV
Dimension
Hierarchy
Operator
Filter Expression
<Select dimension>
Year
COUNTY_NUM...
Count_of_Cra...
2006 1 171
2006 2 83
2006 3 158
2006 4 321
2006 5 59
2006 6 267
2006 7 2302
2006 8 364
2006 9 388
2006 10 304

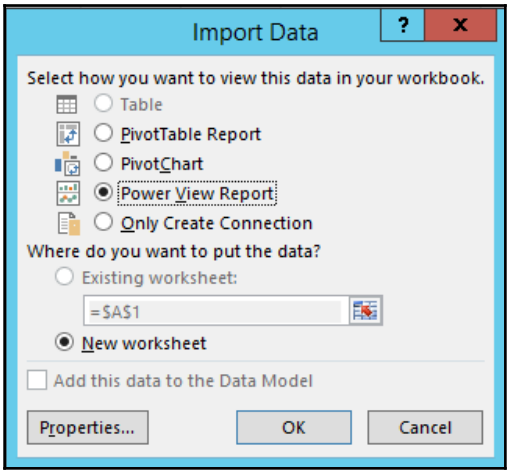

Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Count_of_Crashes
KPIs
Crash_Data
Injuries_Folder
CASE_NUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
Crash_Date_fx
CRASH_DAY
CRASH_KEY
CRASH_MONTH
CRCOMNNR
CSEV
CSRFCND
DISTRICT
Dimension
Hierarchy
Operator
Filter Expression
Crash_Data
COUNTY_NUMBER
Equal
{7}
<Select dimension>
Year
COUNTY_NUMBER
Count_of_Crashes
2006 7 2302
2007 7 2728
2008 7 3029
2009 7 2674
2010 7 2318
2011 7 2134
2012 7 2190
2013 7 2397
2014 7 2428
2015 7 2350
2016 7 940

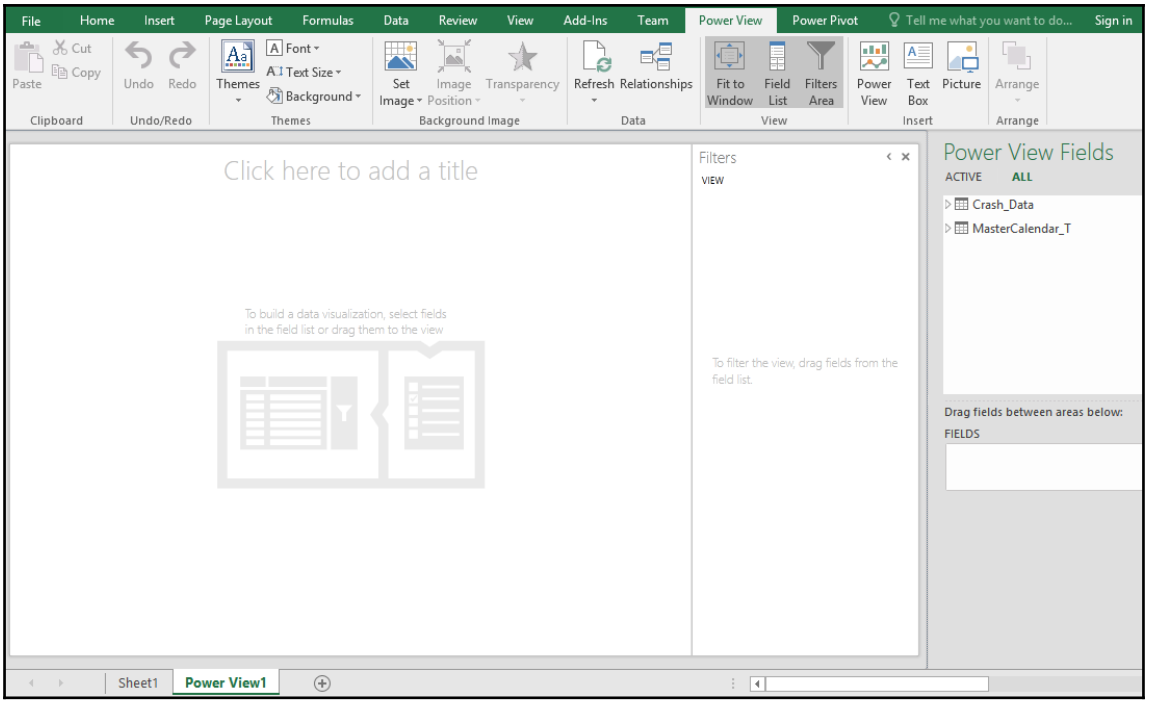

File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-Ins
Get External Data
New Query
Show Queries
From Table
Recent Sources
Get & Transform
Refresh All
Connections
Properties
Edit Links
Connections
Sort
Filter
Clear
Reapply
Advanced
Sort & Filter
From Access
From Web
From Text
From Other Sources
Existing Connections
Get Ext
E
F
G
H
I
From SQL Server
Create a connection to a SQL Server table. Import data into Excel as a Table or PivotTable report.
From Analysis Services
Create a connection to a SQL Server Analysis Services cube. Import data into Excel as a Table or PivotTable report.
From Windows Azure Marketplace
Create a connection to a Microsoft Windows Azure DataMarket Feed. Import data into Excel as a Table or PivotTable report.
From OData Data Feed
Create a connection to an OData Data Feed. Import data into Excel as a Table or PivotTable report.
From XML Data Import
Open or map a XML file into Excel.
From Data Connection Wizard
Import data for an unlisted format by using the Data Connection Wizard and OLEDB.
From Microsoft Query
Import data for an unlisted format by using the Microsoft Query Wizard and ODBC. Functionality is limited for compatibility in previous versions.
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

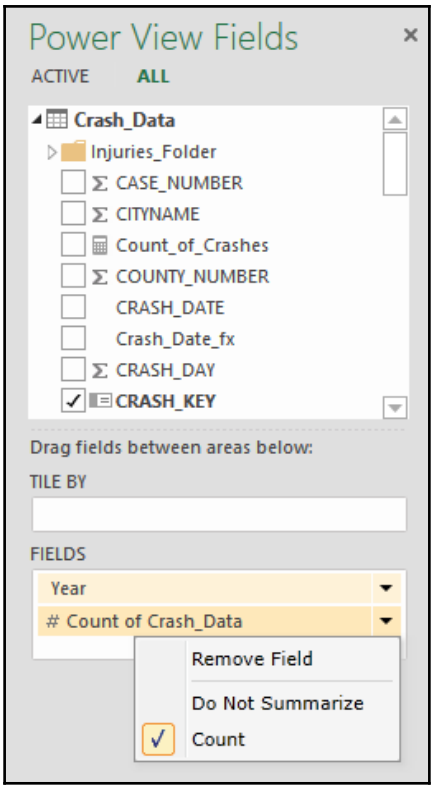

Data Connection Wizard
Connect to Database Server
Enter the information required to connect to the database server.
1. Server name:
localhost
2. Log on credentials
Use Windows Authentication
Use the following User Name and Password
User Name:
Password:
Cancel
< Back
Next >
Finish


Data Connection Wizard
Select Database and Table
Select the Database and Table/Cube which contains the data you want.
Select the database that contains the data you want:
Chapter3_Model
Connect to a specific cube or table:
Name
Description
Modified
Created
Type
Model
8/6/2016 11:56:57 AM
CUBE
Cancel
< Back
Next >
Finish

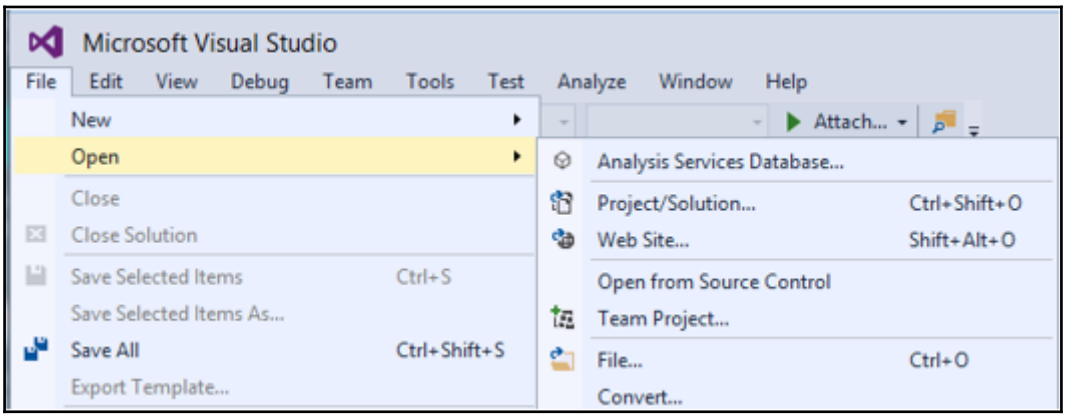

Data Connection Wizard
Save Data Connection File and Finish
Enter a name and description for your new Data Connection file, and press Finish to save.
File Name:
localhost Chapter3_Model Model.odc
Browse...
Save password in file
Description:
(To help others understand what your data connection points to)
Friendly Name:
localhost Chapter3_Model Model
Search Keywords:
Always attempt to use this file to refresh data
Excel Services:
Authentication Settings...
Cancel
< Back
Next >
Finish


Import Data
Select how you want to view this data in your workbook.
Table
PivotTable Report
PivotChart
Power View Report
Only Create Connection
Where do you want to put the data?
Existing worksheet:
=$A$1
New worksheet
Add this data to the Data Model
Properties...
OK
Cancel


File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-Ins
Team
Power View
Power Pivot
Tell me what you want to do...
Sign in
Paste
Cut
Copy
Undo
Redo
Themes
Font
Text Size
Background
Set Image
Image Position
Transparency
Refresh
Relationships
Fit to Window
Field List
Filters Area
Power View
Text Box
Picture
Arrange
Clipboard
Undo/Redo
Themes
Background Image
Data
View
Insert
Arrange
Click here to add a title
To build a data visualization, select fields in the field list or drag them to the view
Filters
VIEW
To filter the view, drag fields from the field list.
Power View Fields
ACTIVE
ALL
Crash_Data
MasterCalendar_T
Drag fields between areas below:
FIELDS
Sheet1
Power View1


Power View Fields
ACTIVE
ALL
Crash_Data
Injuries_Folder
CASE_NUMBER
CITYNAME
Count_of_Crashes
COUNTY_NUMBER
CRASH_DATE
Crash_Date_fx
CRASH_DAY
CRASH_KEY
Drag fields between areas below:
TILE BY
FIELDS
Year
Count of Crash_Data
Remove Field
Do Not Summarize
Count

Chapter 4: Working in Tabular Models



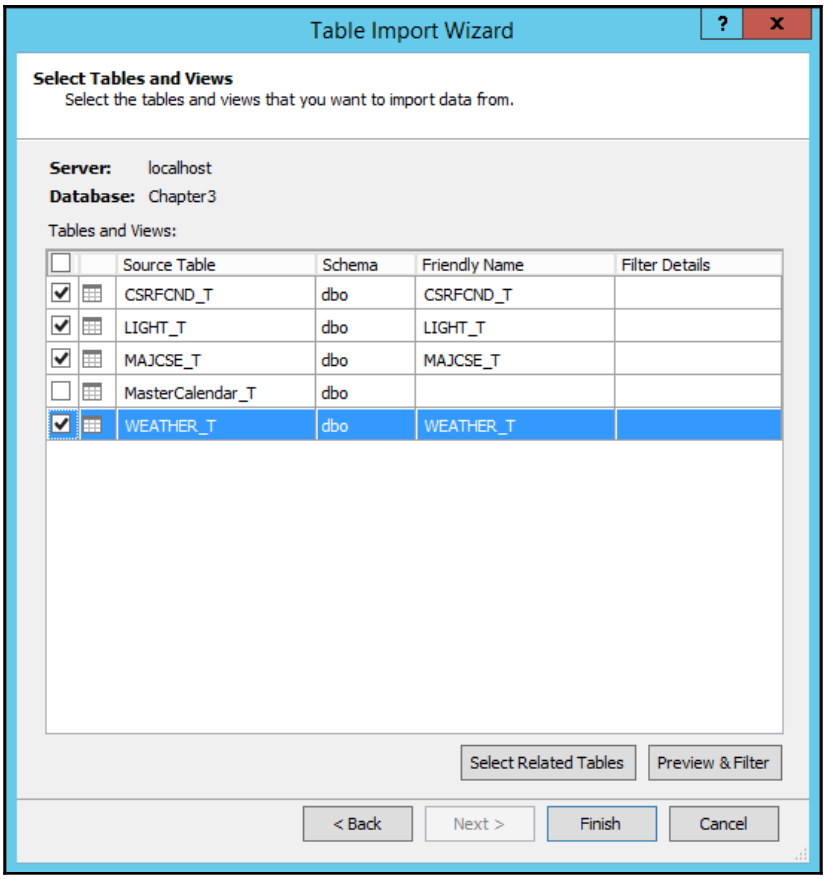
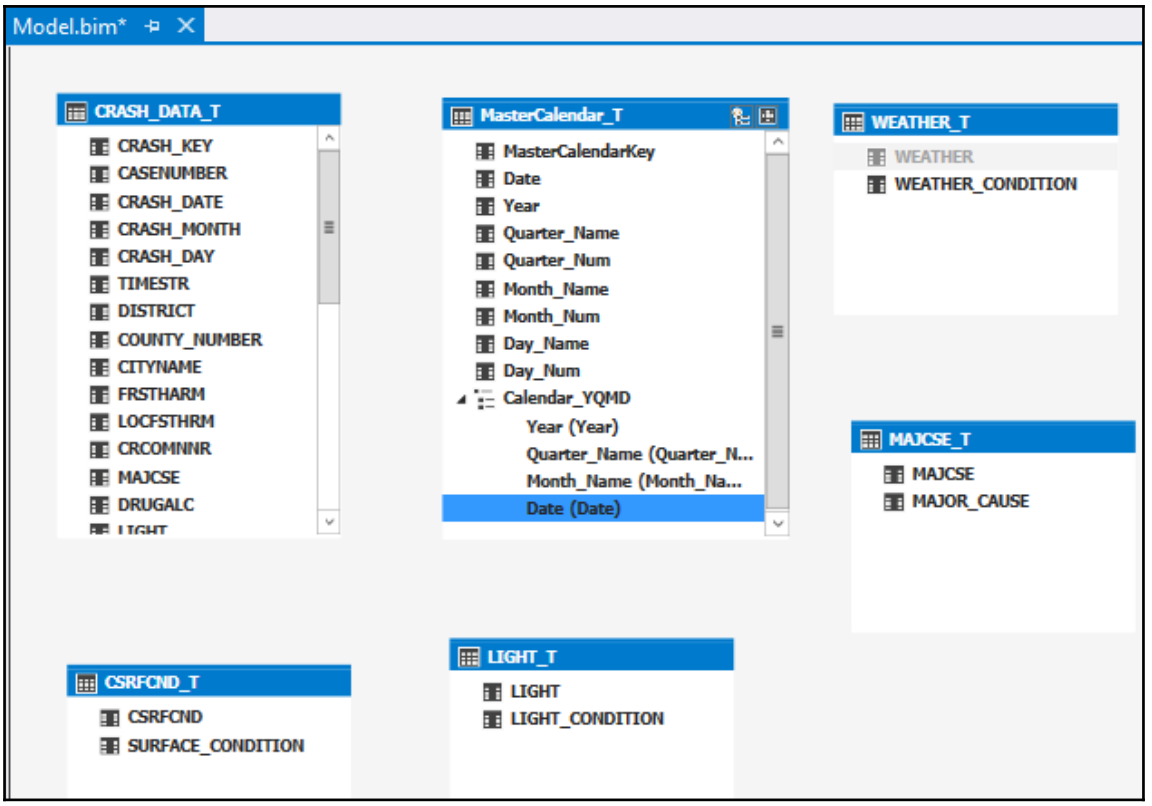
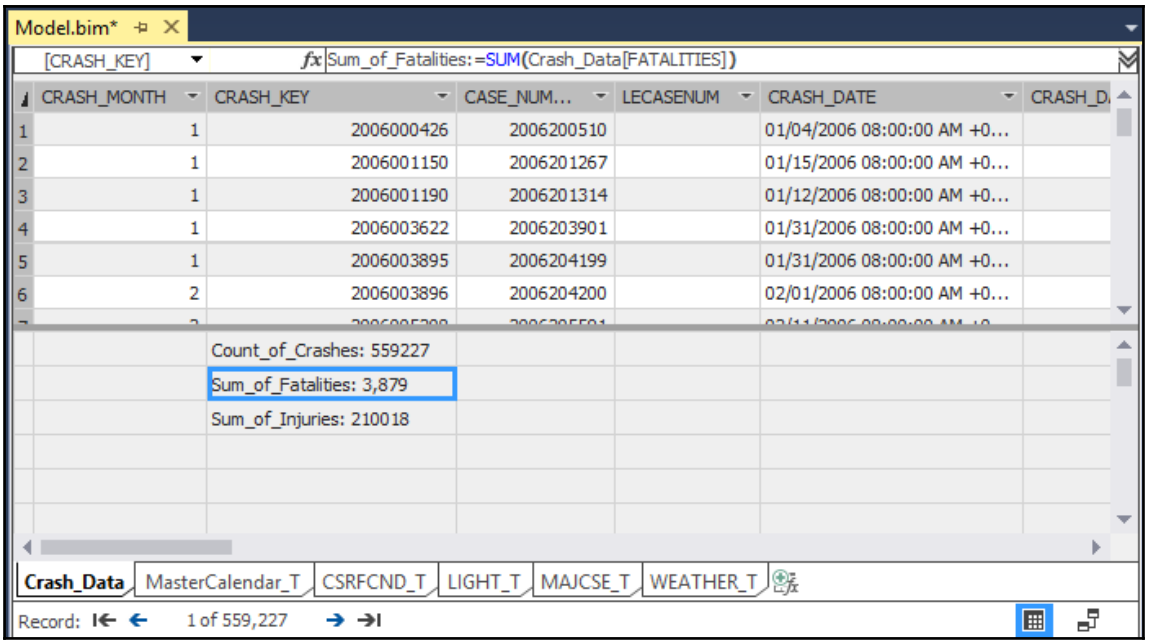
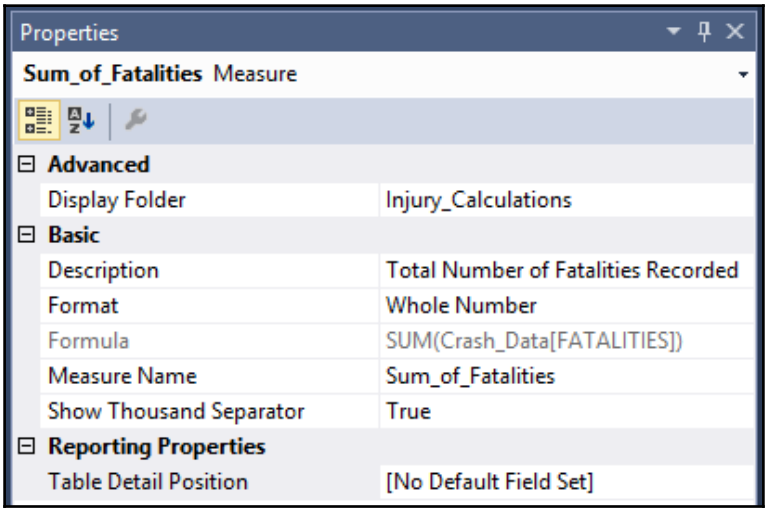
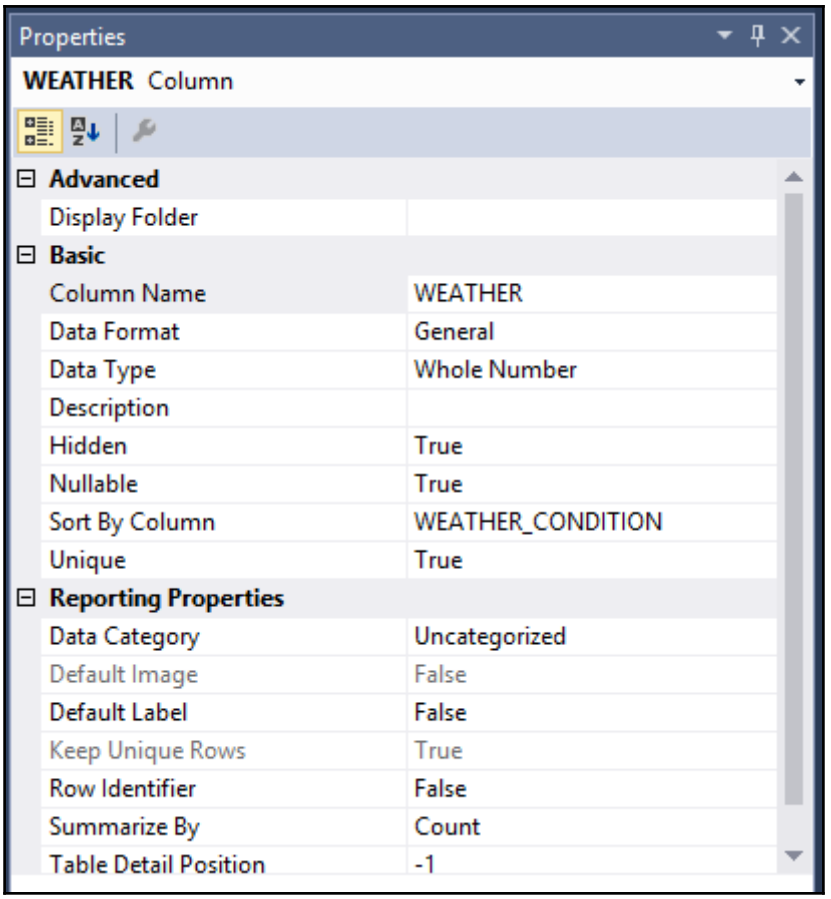


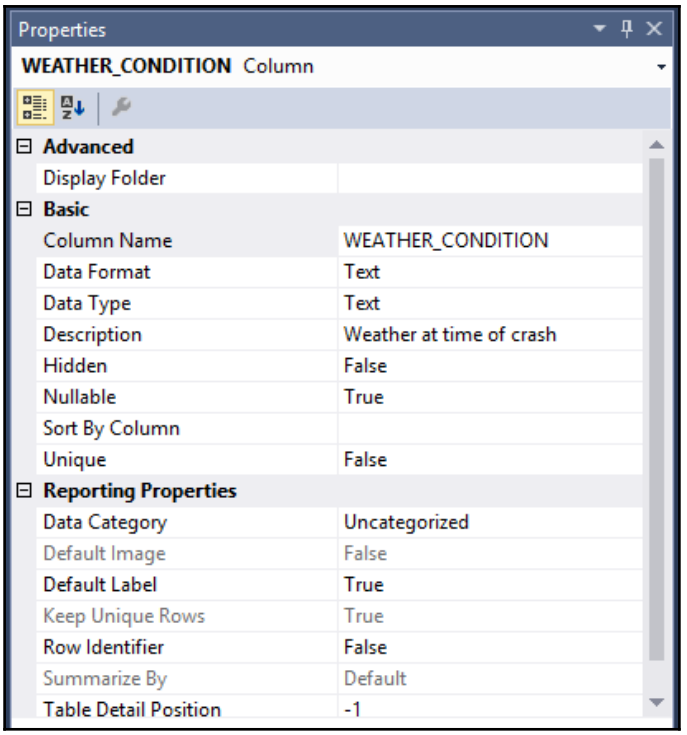
Table Import Wizard
Select Tables and Views
Select the tables and views that you want to import data from.
Server: localhost
Database: Chapter3
Tables and Views:
Source Table
Schema
Friendly Name
Filter Details
CSRFCND_T
dbo
CSRFCND_T
LIGHT_T
dbo
LIGHT_T
MAJCSE_T
dbo
MAJCSE_T
MasterCalendar_T
dbo
WEATHER_T
dbo
WEATHER_T
Select Related Tables
Preview & Filter
< Back
Next >
Finish
Cancel

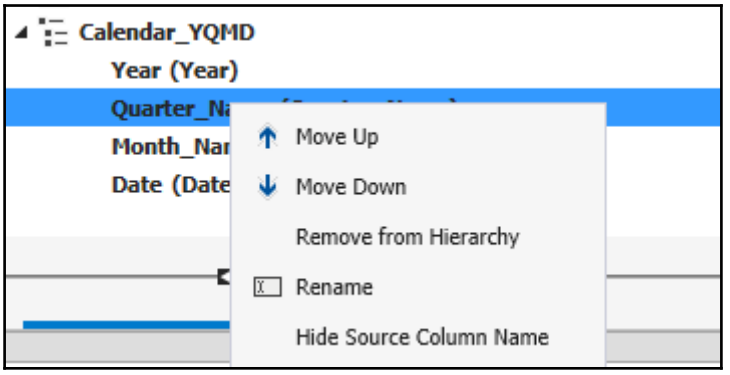

Model.bim*
CRASH_DATA_T
CRASH_KEY
CASENUMBER
CRASH_DATE
CRASH_MONTH
CRASH_DAY
TIMESTR
DISTRICT
COUNTY_NUMBER
CITYNAME
FRSTHARM
LOCFSTHRM
CRCOMNNR
MAJCSE
DRUGALC
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
Month_Num
Day_Name
Day_Num
Calendar_YQMD
Year (Year)
Quarter_Name (Quarter_N...
Month_Name (Month_Na...
Date (Date)
WEATHER_T
WEATHER
WEATHER_CONDITION
MAJCSE_T
MAJCSE
MAJOR_CAUSE
CSRFCND_T
CSRFCND
SURFACE_CONDITION
LIGHT_T
LIGHT
LIGHT_CONDITION

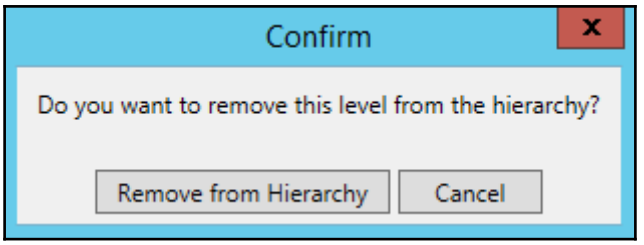

Model.bim*
[CRASH_KEY]
Sum_of_Fatalities:=SUM(Crash_Data[FATALITIES])
CRASH_MONTH
CRASH_KEY
CASE_NUM...
LECASENUM
CRASH_DATE
CRASH_D
1 1 2006000426 2006200510 01/04/2006 08:00:00 AM +0...
2 1 2006001150 2006201267 01/15/2006 08:00:00 AM +0...
3 1 2006001190 2006201314 01/12/2006 08:00:00 AM +0...
4 1 2006003622 2006203901 01/31/2006 08:00:00 AM +0...
5 1 2006003895 2006204199 01/31/2006 08:00:00 AM +0...
6 2 2006003896 2006204200 02/01/2006 08:00:00 AM +0...
Count_of_Crashes: 559227
Sum_of_Fatalities: 3,879
Sum_of_Injuries: 210018
Crash_Data
MasterCalendar_T
CSRFCND_T
LIGHT_T
MAJCSE_T
WEATHER_T
Record:
1 of 559,227

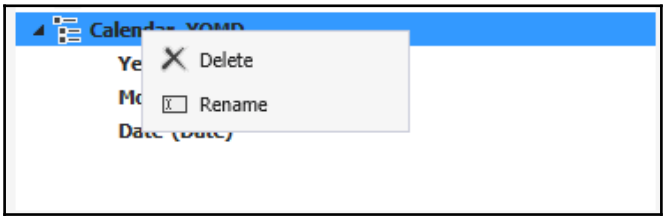

Properties
Sum_of_Fatalities Measure
Advanced
Display Folder
Injury_Calculations
Basic
Description
Total Number of Fatalities Recorded
Format
Whole Number
Formula
SUM(Crash_Data[FATALITIES])
Measure Name
Sum_of_Fatalities
Show Thousand Separator
True
Reporting Properties
Table Detail Position
[No Default Field Set]

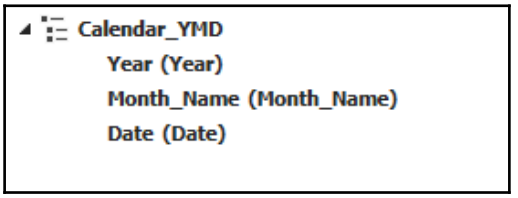

Properties
WEATHER Column
Advanced
Display Folder
Basic
Column Name
WEATHER
Data Format
General
Data Type
Whole Number
Description
Hidden
True
Nullable
True
Sort By Column
WEATHER_CONDITION
Unique
True
Reporting Properties
Data Category
Uncategorized
Default Image
False
Default Label
False
Keep Unique Rows
True
Row Identifier
False
Summarize By
Count
Table Detail Position
-1


Properties
WEATHER_CONDITION Column
Advanced
Display Folder
Basic
Column Name WEATHER_CONDITION
Data Format Text
Data Type Text
Description Weather at time of crash
Hidden False
Nullable True
Sort By Column
Unique False
Reporting Properties
Data Category Uncategorized
Default Image False
Default Label True
Keep Unique Rows True
Row Identifier False
Summarize By Default
Table Detail Position -1


Calendar_YQMD
Year (Year)
Quarter_Na
Month_Nar
Date (Date
Move Up
Move Down
Remove from Hierarchy
Rename
Hide Source Column Name


Confirm
Do you want to remove this level from the hierarchy?
Remove from Hierarchy
Cancel


Delete
Rename


Calendar_YMD
Year (Year)
Month_Name (Month_Name)
Date (Date)

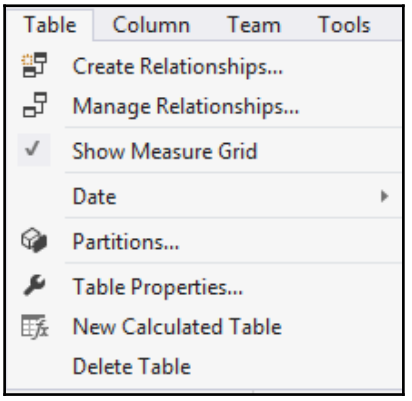
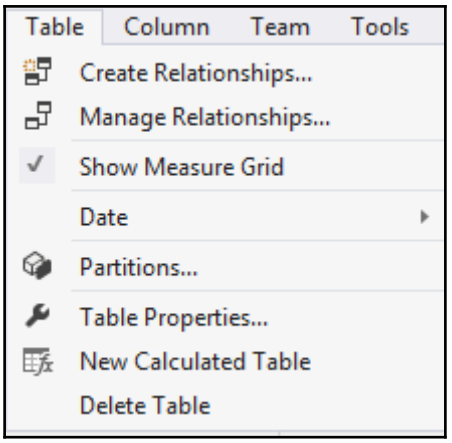
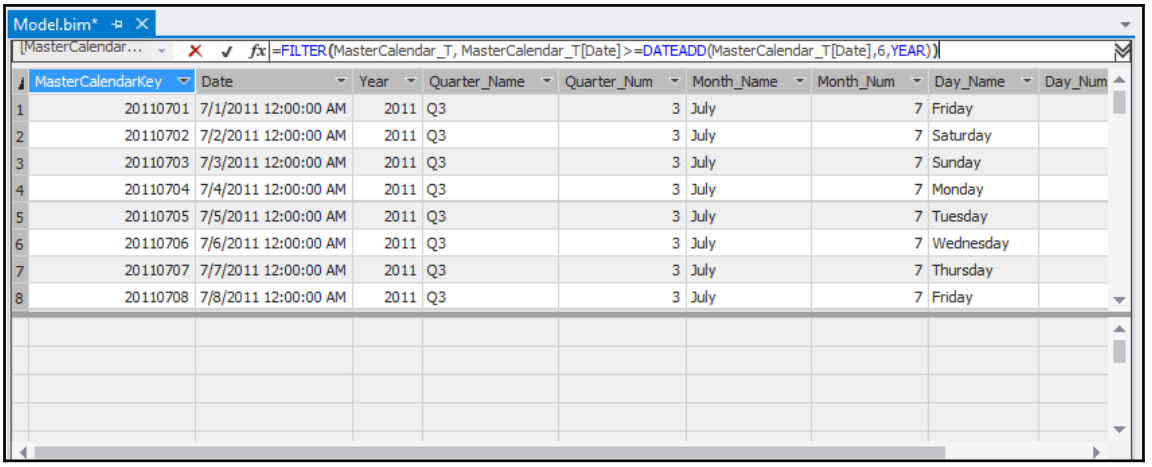
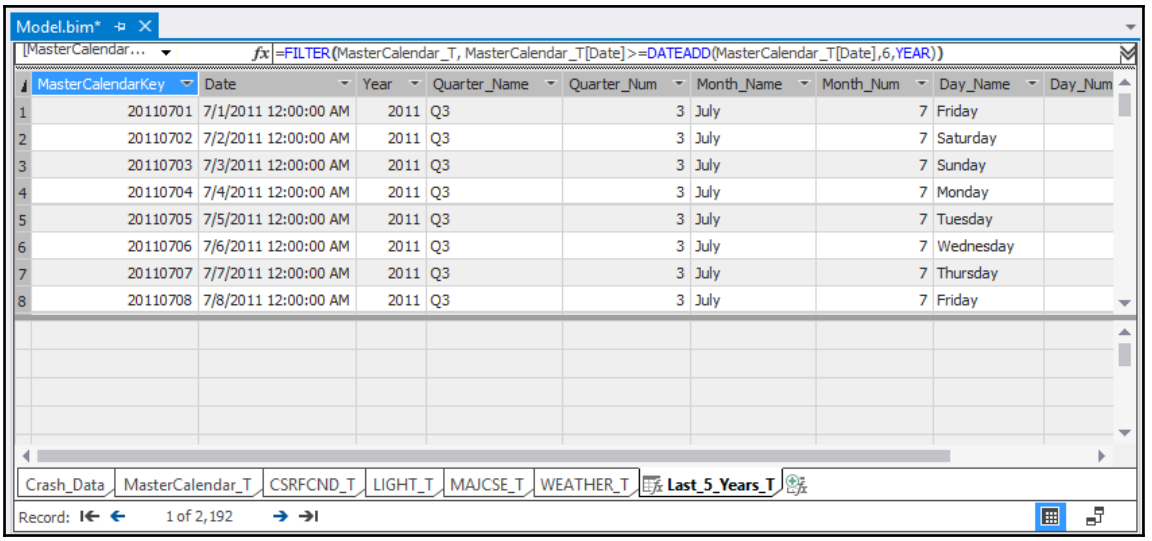


Table
Column
Team
Tools
Create Relationships...
Manage Relationships...
Show Measure Grid
Date
Partitions...
Table Properties...
New Calculated Table
Delete Table

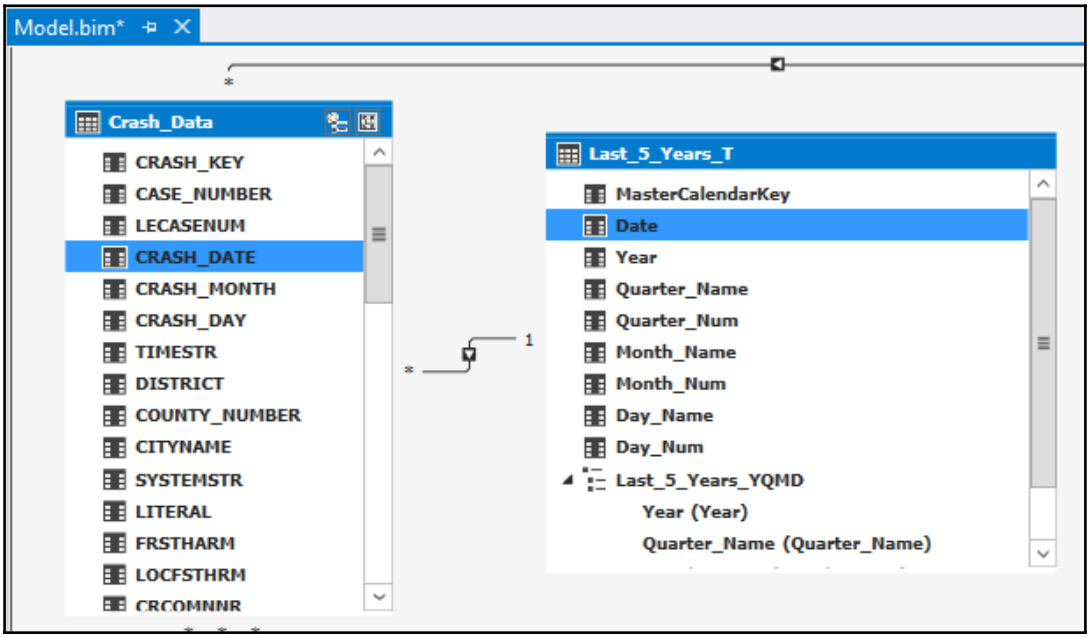


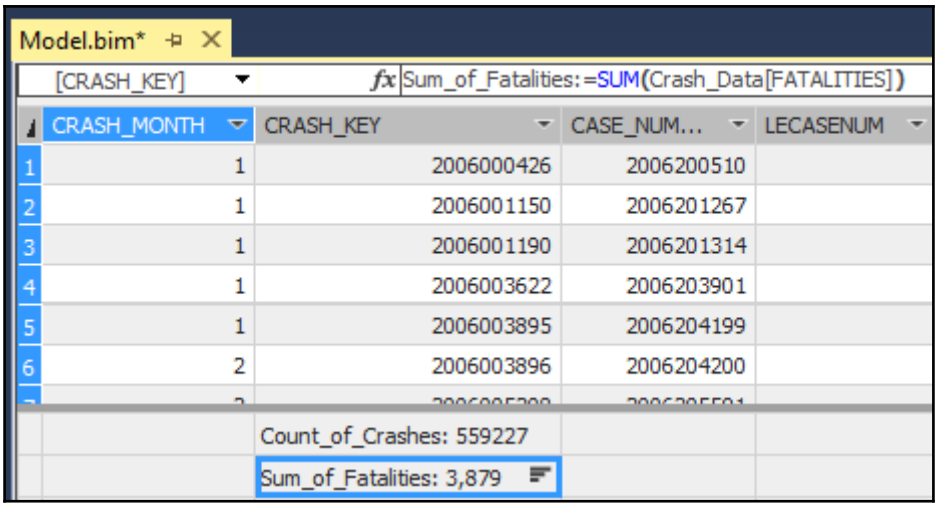


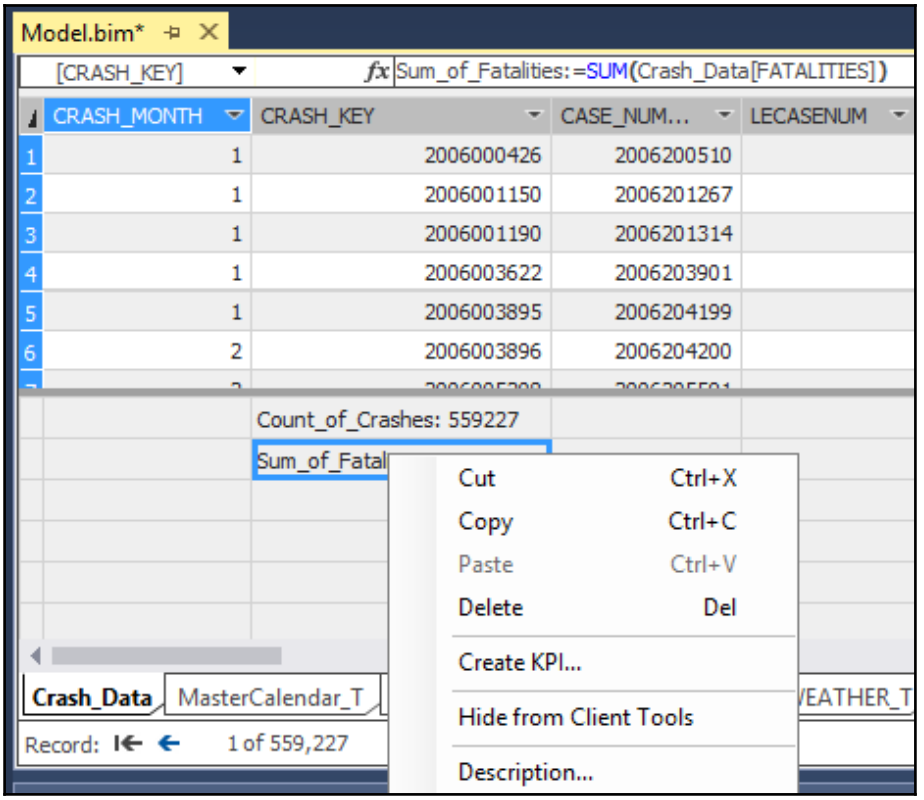
	MasterCalendarKey	Date	Year	Quarter_Name	Quarter_Num	Month_Name	Month_Num	Day_Name	Day_Num
1	20110701	7/1/2011 12:00:00 AM	2011	Q3	3	July	7	Friday	
2	20110702	7/2/2011 12:00:00 AM	2011	Q3	3	July	7	Saturday	
3	20110703	7/3/2011 12:00:00 AM	2011	Q3	3	July	7	Sunday	
4	20110704	7/4/2011 12:00:00 AM	2011	Q3	3	July	7	Monday	
5	20110705	7/5/2011 12:00:00 AM	2011	Q3	3	July	7	Tuesday	
6	20110706	7/6/2011 12:00:00 AM	2011	Q3	3	July	7	Wednesday	
7	20110707	7/7/2011 12:00:00 AM	2011	Q3	3	July	7	Thursday	
8	20110708	7/8/2011 12:00:00 AM	2011	Q3	3	July	7	Friday	

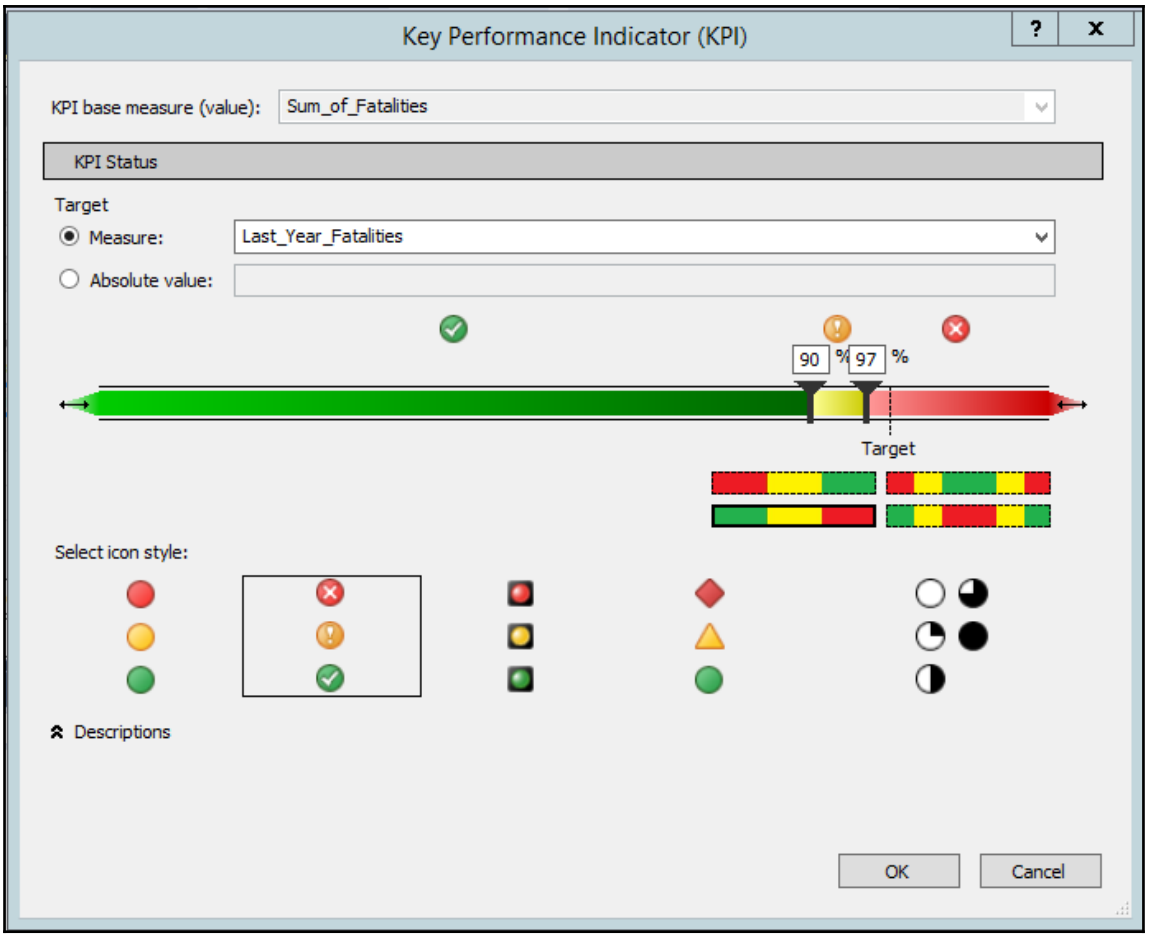


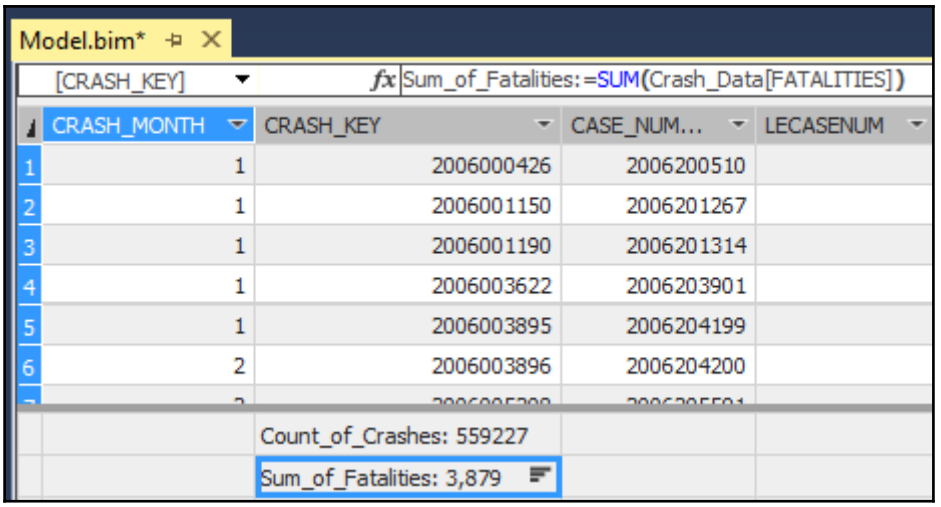
	MasterCalendarKey	Date	Year	Quarter_Name	Quarter_Num	Month_Name	Month_Num	Day_Name	Day_Num
1	20110701	7/1/2011 12:00:00 AM	2011	Q3	3	July	7	Friday	
2	20110702	7/2/2011 12:00:00 AM	2011	Q3	3	July	7	Saturday	
3	20110703	7/3/2011 12:00:00 AM	2011	Q3	3	July	7	Sunday	
4	20110704	7/4/2011 12:00:00 AM	2011	Q3	3	July	7	Monday	
5	20110705	7/5/2011 12:00:00 AM	2011	Q3	3	July	7	Tuesday	
6	20110706	7/6/2011 12:00:00 AM	2011	Q3	3	July	7	Wednesday	
7	20110707	7/7/2011 12:00:00 AM	2011	Q3	3	July	7	Thursday	
8	20110708	7/8/2011 12:00:00 AM	2011	Q3	3	July	7	Friday	

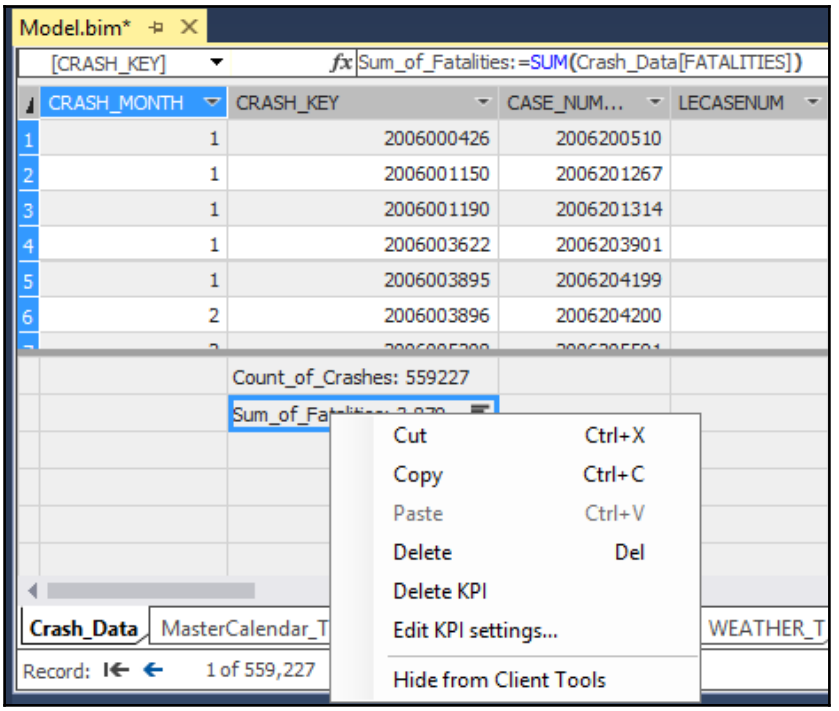


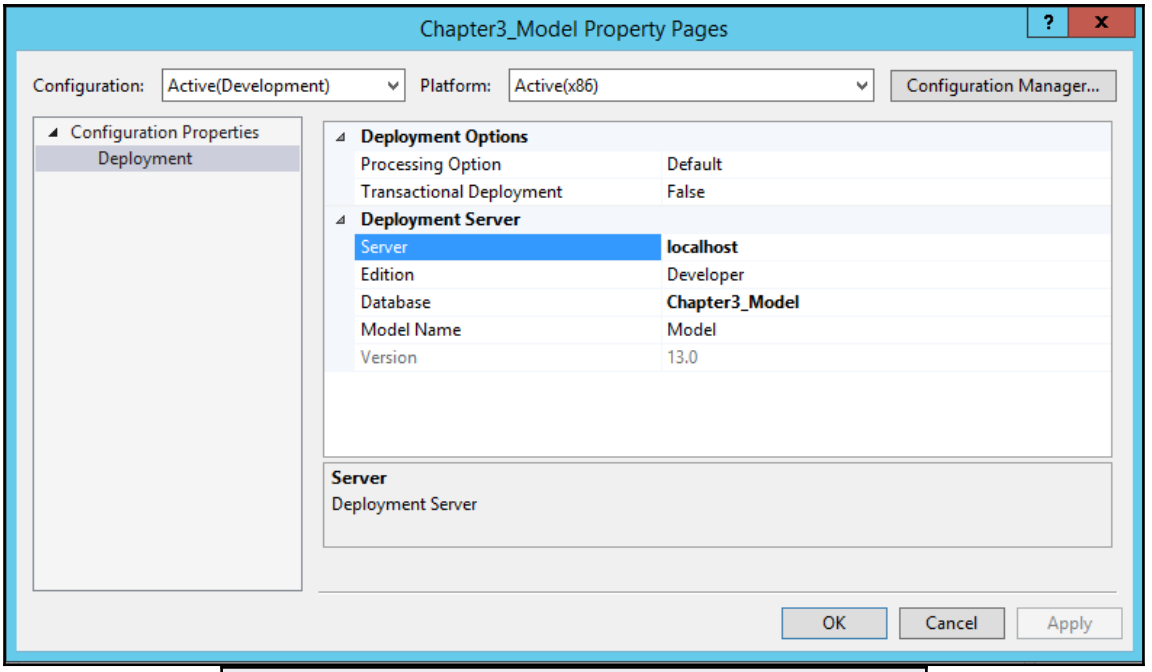

Model.bim*
[CRASH_KEY]
fx
Sum_of_Fatalities:=SUM(Crash_Data[FATALITIES])
CRASH_MONTH
CRASH_KEY
CASE_NUM...
LECASENUM
1 1 2006000426 2006200510
2 1 2006001150 2006201267
3 1 2006001190 2006201314
4 1 2006003622 2006203901
5 1 2006003895 2006204199
6 2 2006003896 2006204200
Count_of_Crashes: 559227
Sum_of_Fatalities: 3,879

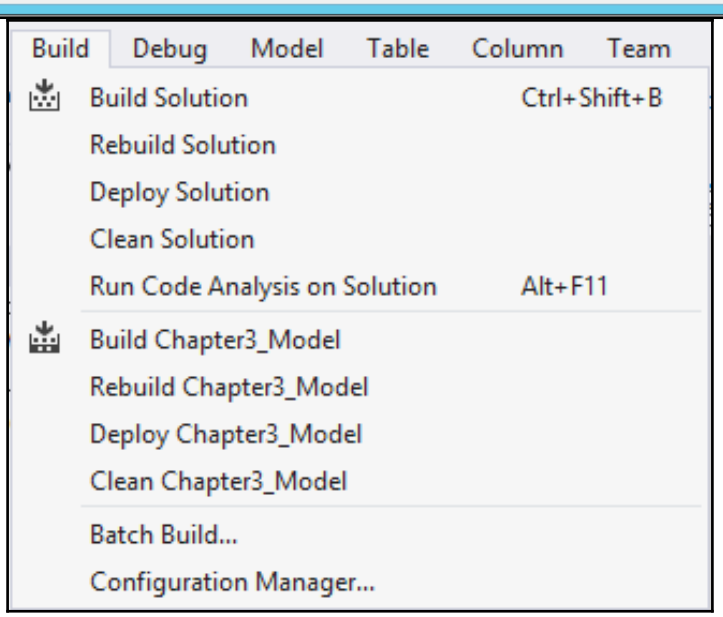

Model.bim*
[CRASH_KEY]
fx
Sum_of_Fatalities:=SUM(Crash_Data[FATALITIES])
CRASH_MONTH
CRASH_KEY
CASE_NUM...
LECASENUM
1 1 2006000426 2006200510
2 1 2006001150 2006201267
3 1 2006001190 2006201314
4 1 2006003622 2006203901
5 1 2006003895 2006204199
6 2 2006003896 2006204200
Count_of_Crashes: 559227
Sum_of_Fatal
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Del
Create KPI...
Hide from Client Tools
Description...
Crash_Data
MasterCalendar_T
EATHER_T
Record: 1 of 559,227

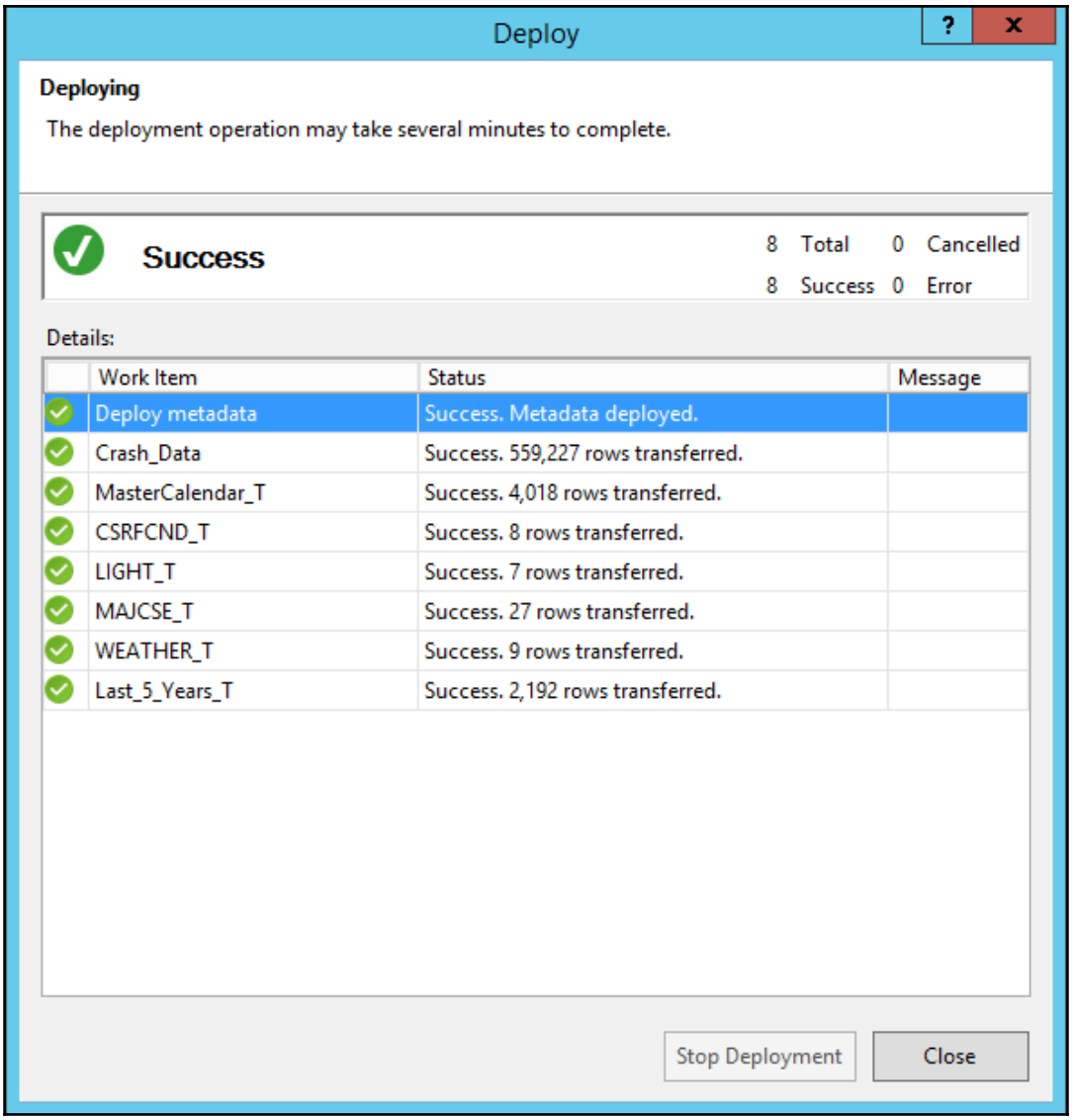

Key Performance Indicator (KPI)
KPI base measure (value):
Sum_of_Fatalities
KPI Status
Target
Measure:
Last_Year_Fatalities
Absolute value:
90
%
97
%
Target
Select icon style:
Descriptions
OK
Cancel

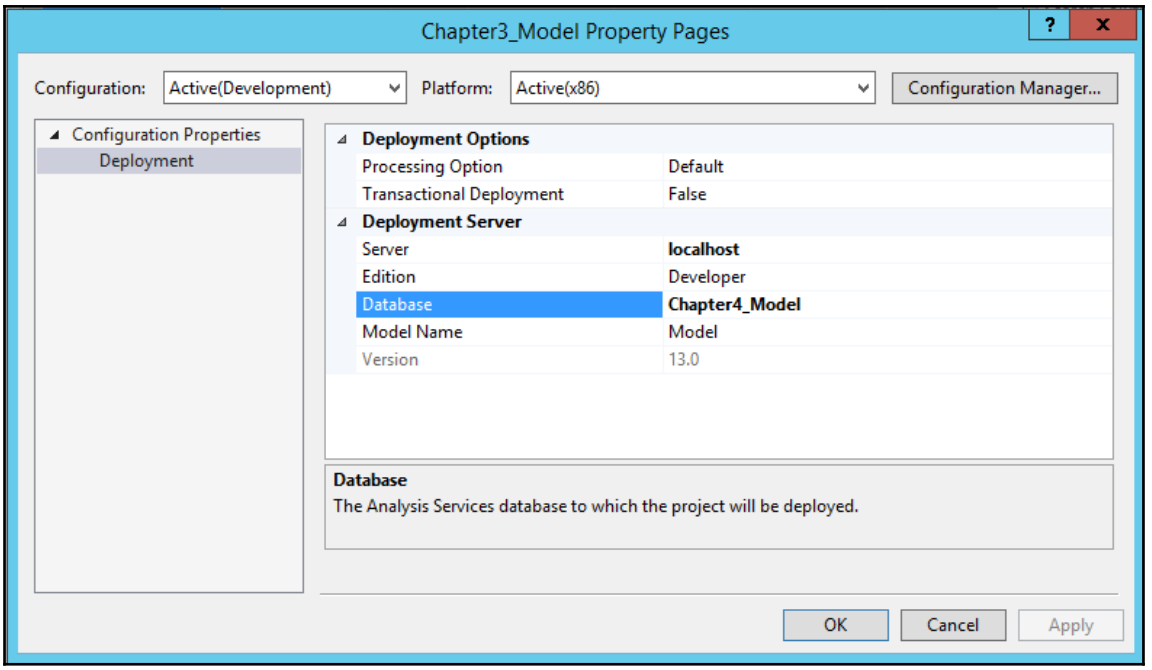

Model.bim*
[CRASH_KEY]
fx
Sum_of_Fatalities:=SUM(Crash_Data[FATALITIES])
CRASH_MONTH
CRASH_KEY
CASE_NUM...
LECASENUM
1 1 2006000426 2006200510
2 1 2006001150 2006201267
3 1 2006001190 2006201314
4 1 2006003622 2006203901
5 1 2006003895 2006204199
6 2 2006003896 2006204200
Count_of_Crashes: 559227
Sum_of_Fatalities: 3,879

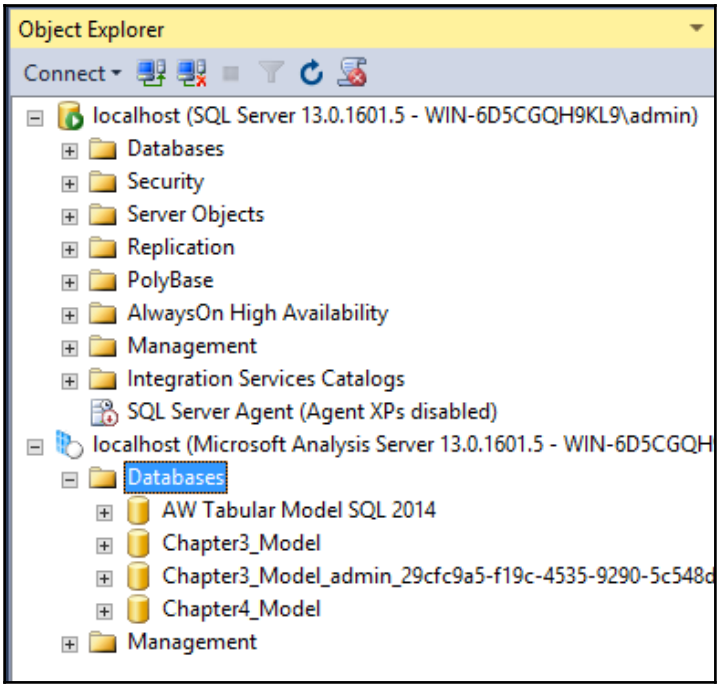

Model.bim*
[CRASH_KEY]
fx
Sum_of_Fatalities:=SUM(Crash_Data[FATALITIES])
CRASH_MONTH
CRASH_KEY
CASE_NUM...
LECASENUM
1 1 2006000426 2006200510
2 1 2006001150 2006201267
3 1 2006001190 2006201314
4 1 2006003622 2006203901
5 1 2006003895 2006204199
6 2 2006003896 2006204200
Count_of_Crashes: 559227
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Del
Delete KPI
Edit KPI settings...
Hide from Client Tools
Crash_Data
MasterCalendar_T
WEATHER_T
Record:
1 of 559,227


Chapter3_Model Property Pages
Configuration: Active(Development)
Platform: Active(x86)
Configuration Manager...
Configuration Properties
Deployment
Deployment Options
Processing Option
Default
Transactional Deployment
False
Deployment Server
Server
localhost
Edition
Developer
Database
Chapter3_Model
Model Name
Model
Version
13.0
Server
Deployment Server
OK
Cancel
Apply

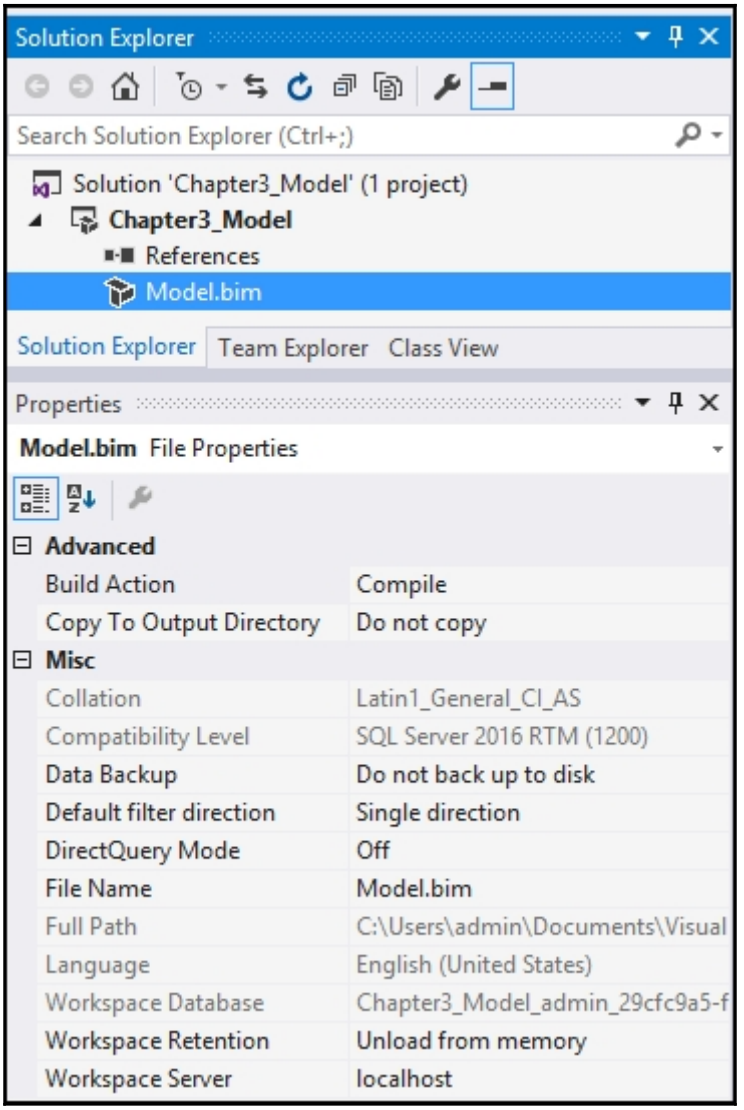

Build
Debug
Model
Table
Column
Team
Build Solution
Ctrl+Shift+B
Rebuild Solution
Deploy Solution
Clean Solution
Run Code Analysis on Solution
Alt+F11
Build Chapter3_Model
Rebuild Chapter3_Model
Deploy Chapter3_Model
Clean Chapter3_Model
Batch Build...
Configuration Manager...

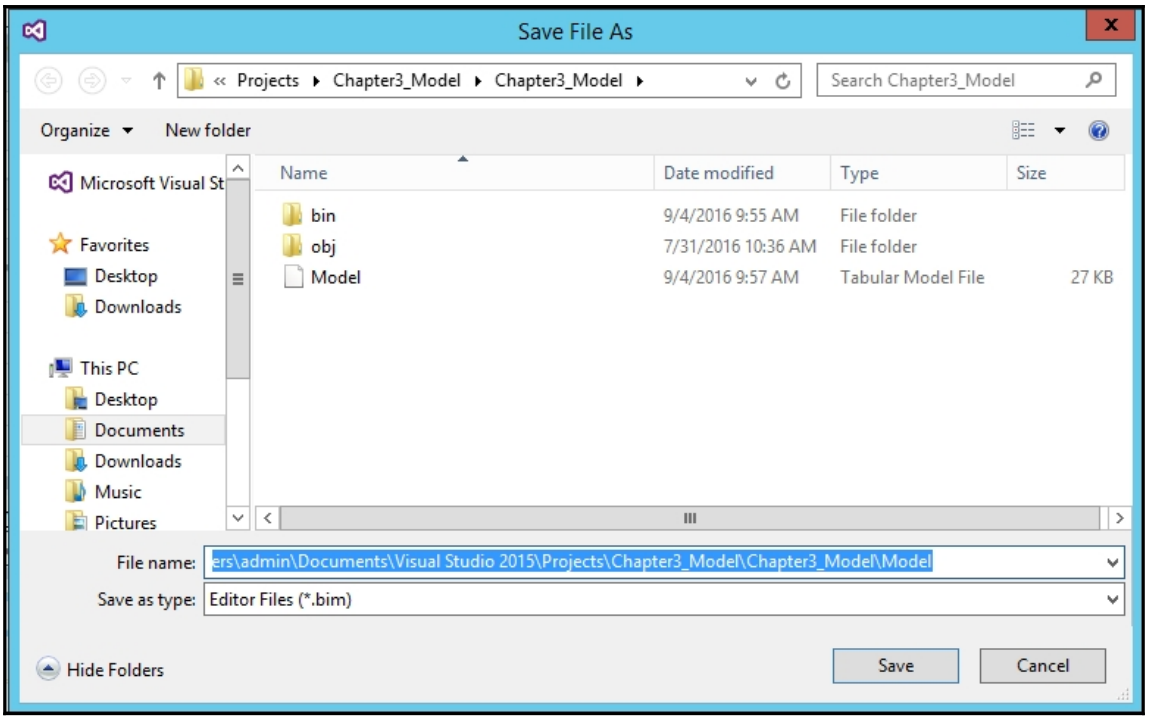

Deploy
Deploying
The deployment operation may take several minutes to complete.
Success
8 Total 0 Cancelled
8 Success 0 Error
Details:
Work Item
Status
Message
Deploy metadata
Success. Metadata deployed.
Crash_Data
Success. 559,227 rows transferred.
MasterCalendar_T
Success. 4,018 rows transferred.
CSRFCND_T
Success. 8 rows transferred.
LIGHT_T
Success. 7 rows transferred.
MAJCSE_T
Success. 27 rows transferred.
WEATHER_T
Success. 9 rows transferred.
Last_5_Years_T
Success. 2,192 rows transferred.
Stop Deployment
Close

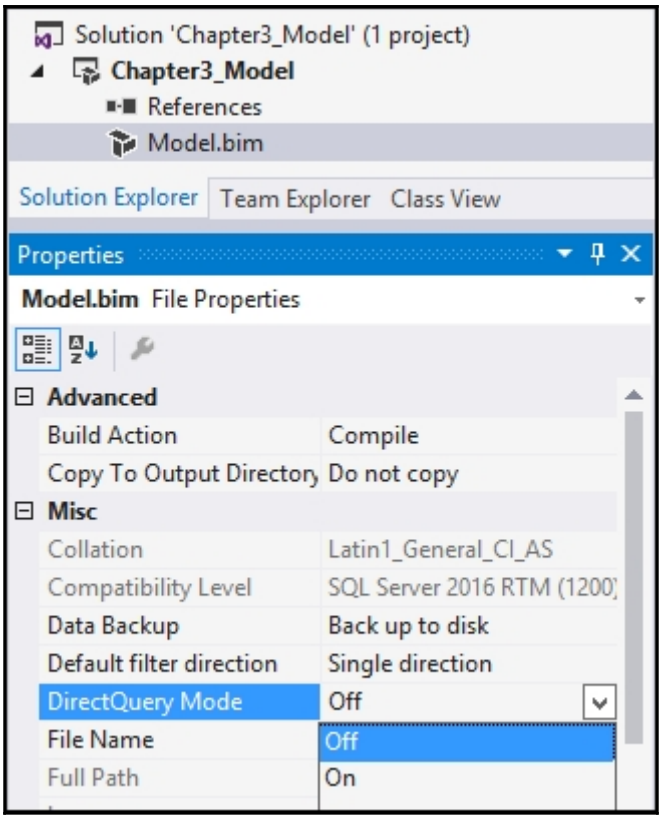

Chapter3_Model Property Pages
Configuration: Active(Development)
Platform: Active(x86)
Configuration Manager...
Configuration Properties
Deployment
Deployment Options
Processing Option
Default
Transactional Deployment
False
Deployment Server
Server
localhost
Edition
Developer
Database
Chapter4_Model
Model Name
Model
Version
13.0
Database
The Analysis Services database to which the project will be deployed.
OK
Cancel
Apply

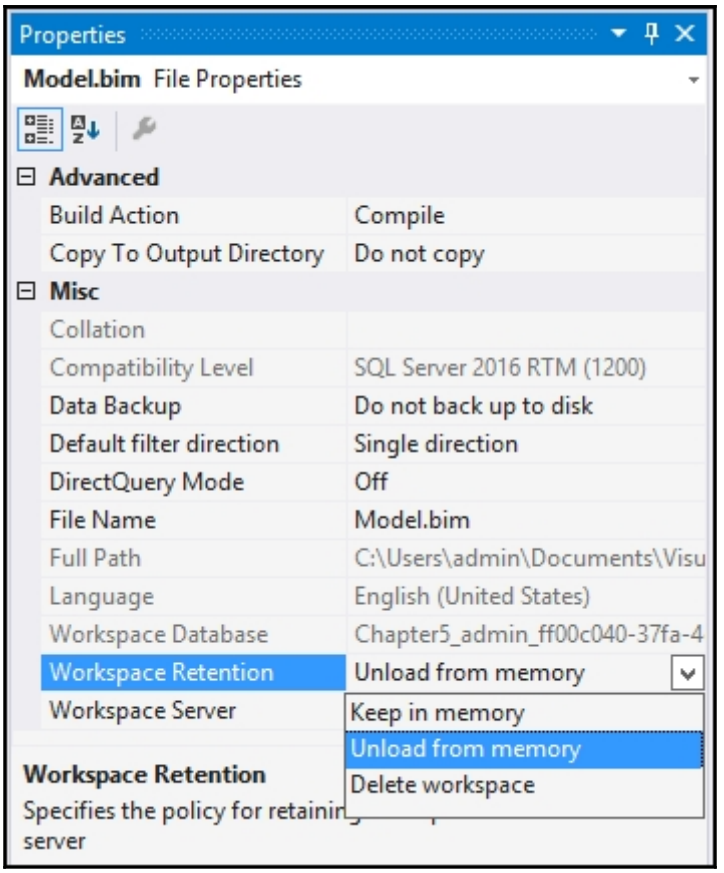

Object Explorer
Connect
localhost (SQL Server 13.0.1601.5 - WIN-6D5CGQH9KL9\admin)
Databases
Security
Server Objects
Replication
PolyBase
AlwaysOn High Availability
Management
Integration Services Catalogs
SQL Server Agent (Agent XPs disabled)
localhost (Microsoft Analysis Server 13.0.1601.5 - WIN-6D5CGQH
Databases
AW Tabular Model SQL 2014
Chapter3_Model
Chapter3_Model_admin_29cfc9a5-f19c-4535-9290-5c548d
Chapter4_Model
Management

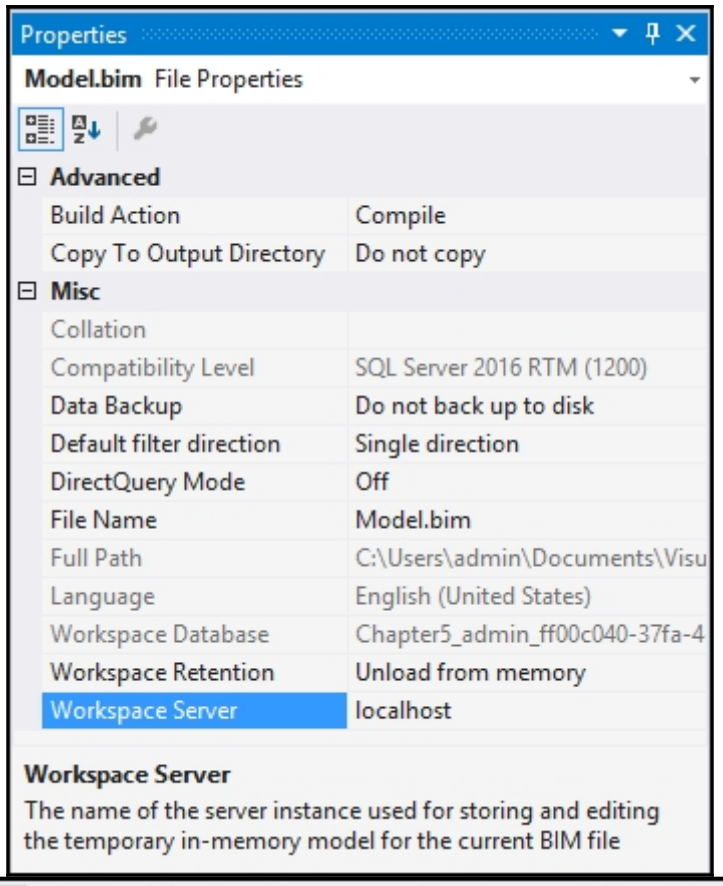
Chapter 5: Administration of Tabular Models

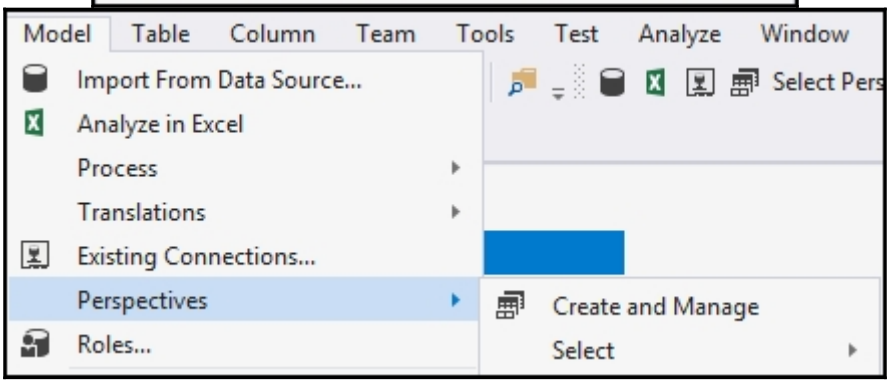


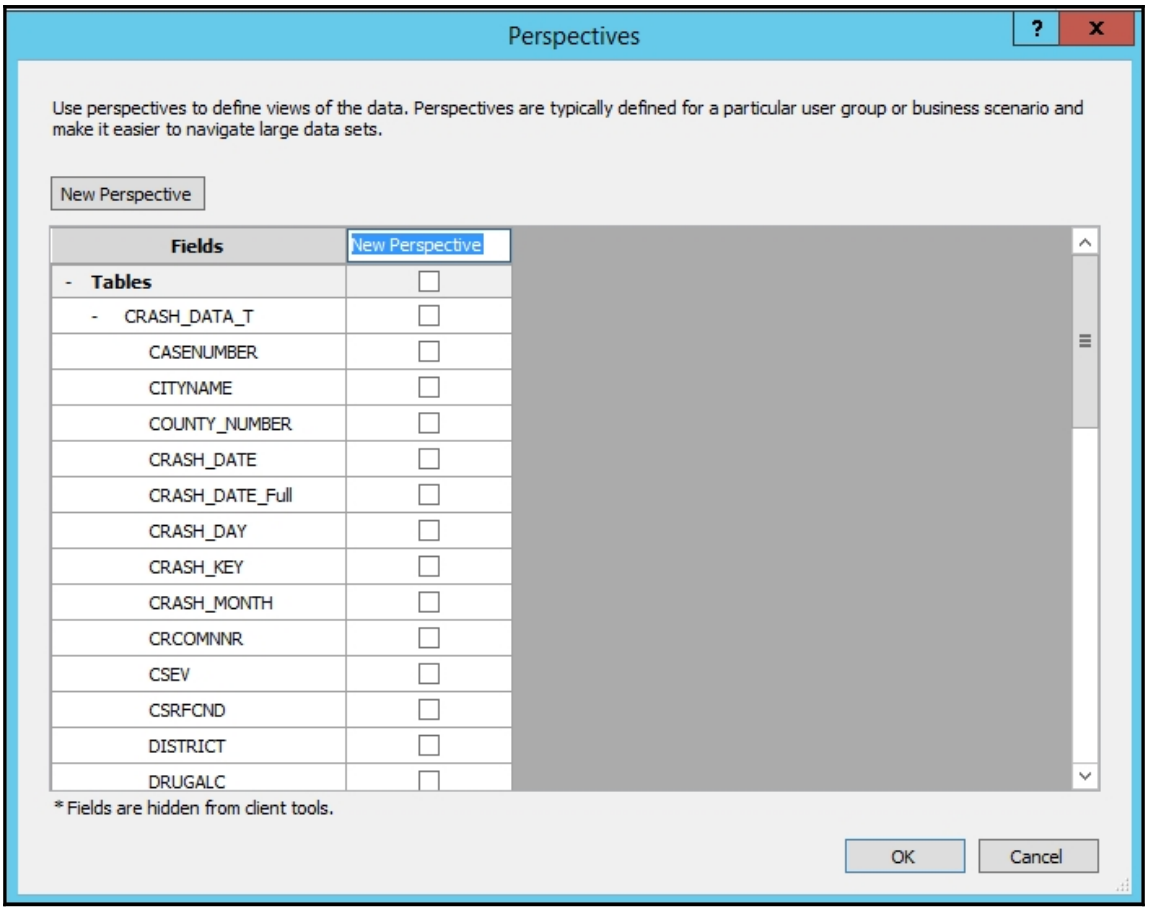

Save File As
Projects ▸ Chapter3_Model ▸ Chapter3_Model ▸
Search Chapter3_Model
Organize
New folder
Microsoft Visual St
Favorites
Desktop
Downloads
This PC
Desktop
Documents
Downloads
Music
Pictures
Name
Date modified
Type
Size
bin
9/4/2016 9:55 AM
File folder
obj
7/31/2016 10:36 AM
File folder
Model
9/4/2016 9:57 AM
Tabular Model File
27 KB
File name:
ers\admin\Documents\Visual Studio 2015\Projects\Chapter3_Model\Chapter3_Model\Model
Save as type:
Editor Files (*.bim)
Hide Folders
Save
Cancel

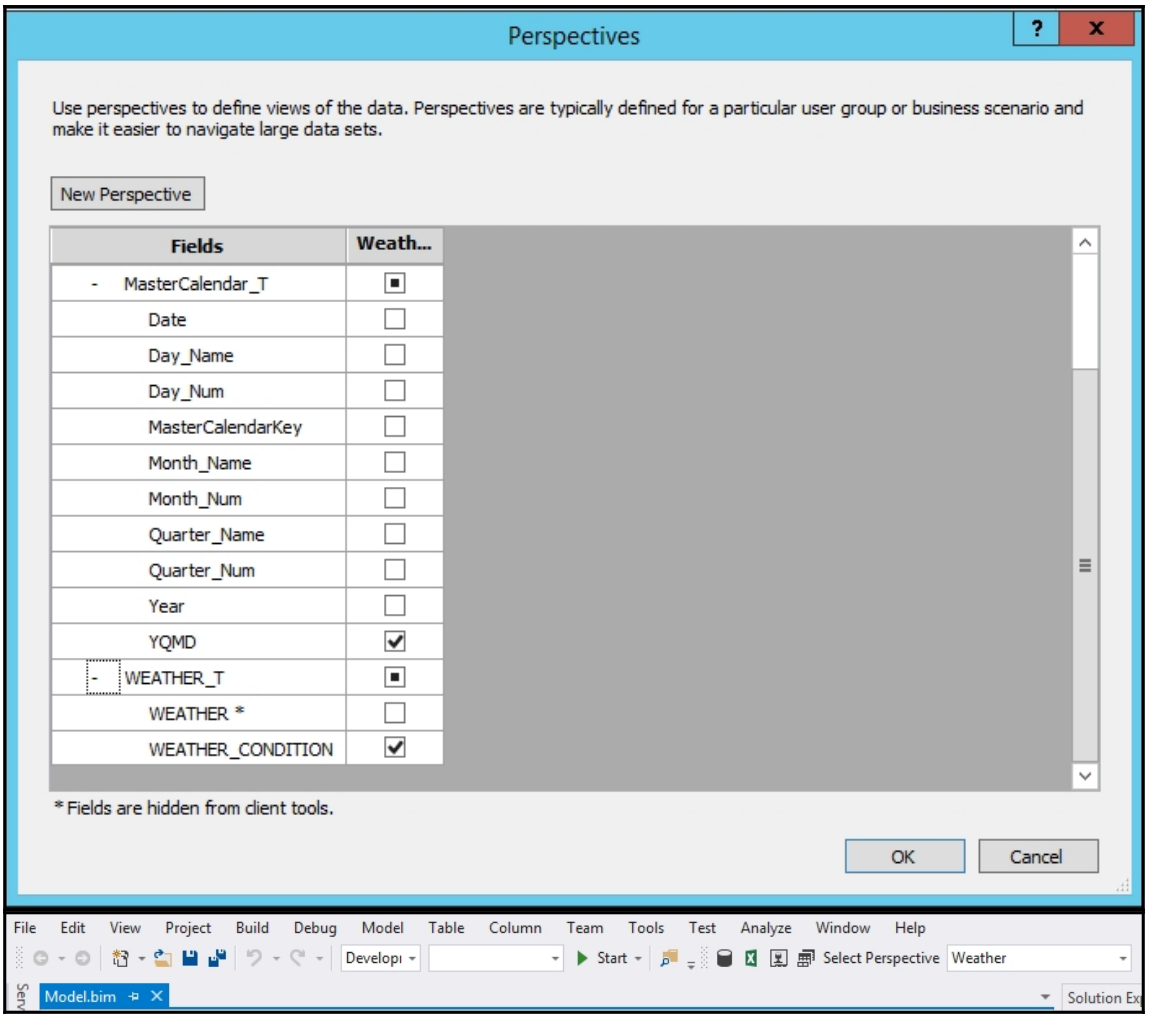

Solution 'Chapter3_Model' (1 project)
Chapter3_Model
References
Model.bim
Solution Explorer
Team Explorer
Class View
Properties
Model.bim File Properties
Advanced
Build Action
Compile
Copy To Output Directory
Do not copy
Misc
Collation
Latin1_General_CI_AS
Compatibility Level
SQL Server 2016 RTM (1200)
Data Backup
Back up to disk
Default filter direction
Single direction
DirectQuery Mode
Off
File Name
Off
Full Path
On

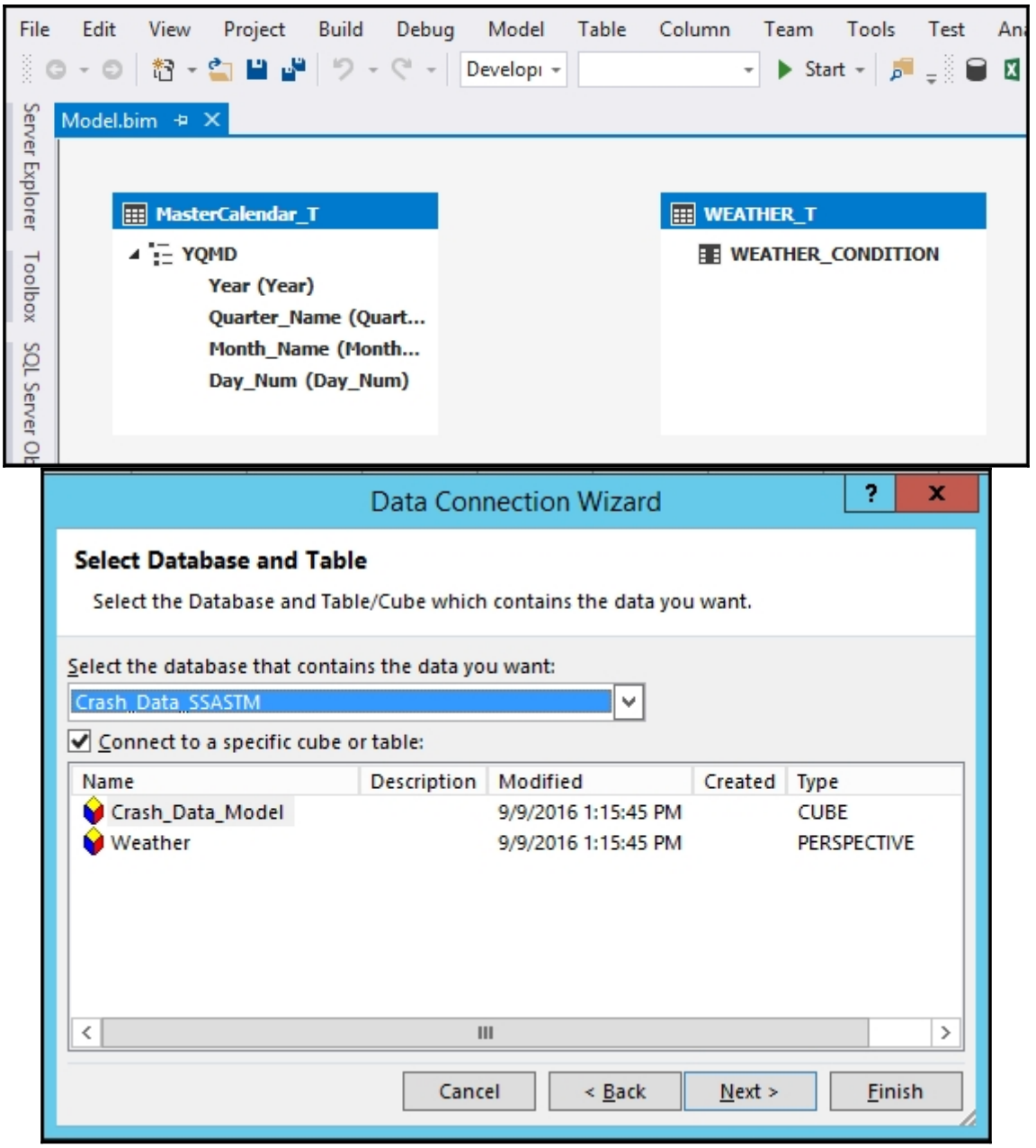

Properties
Model.bim File Properties
Advanced
Build Action
Compile
Copy To Output Directory
Do not copy
Misc
Collation
Compatibility Level
SQL Server 2016 RTM (1200)
Data Backup
Do not back up to disk
Default filter direction
Single direction
DirectQuery Mode
Off
File Name
Model.bim
Full Path
C:\Users\admin\Documents\Visu
Language
English (United States)
Workspace Database
Chapter5_admin_ff00c040-37fa-4
Workspace Retention
Unload from memory
Workspace Server
Keep in memory
Unload from memory
Delete workspace
Workspace Retention
Specifies the policy for retainin
server

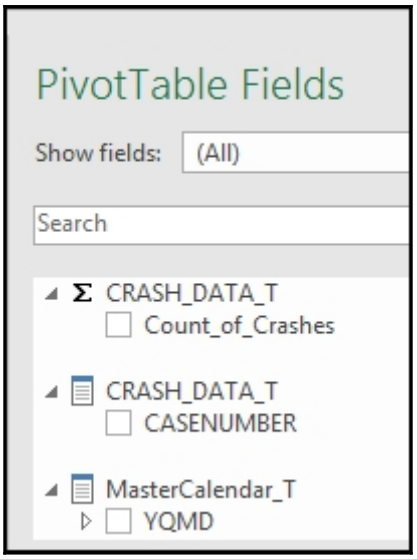

Properties
Model.bim File Properties
Advanced
Build Action
Compile
Copy To Output Directory
Do not copy
Misc
Collation
Compatibility Level
SQL Server 2016 RTM (1200)
Data Backup
Do not back up to disk
Default filter direction
Single direction
DirectQuery Mode
Off
File Name
Model.bim
Full Path
C:\Users\admin\Documents\Visu
Language
English (United States)
Workspace Database
Chapter5_admin_ff00c040-37fa-4
Workspace Retention
Unload from memory
Workspace Server
localhost
Workspace Server
The name of the server instance used for storing and editing the temporary in-memory model for the current BIM file

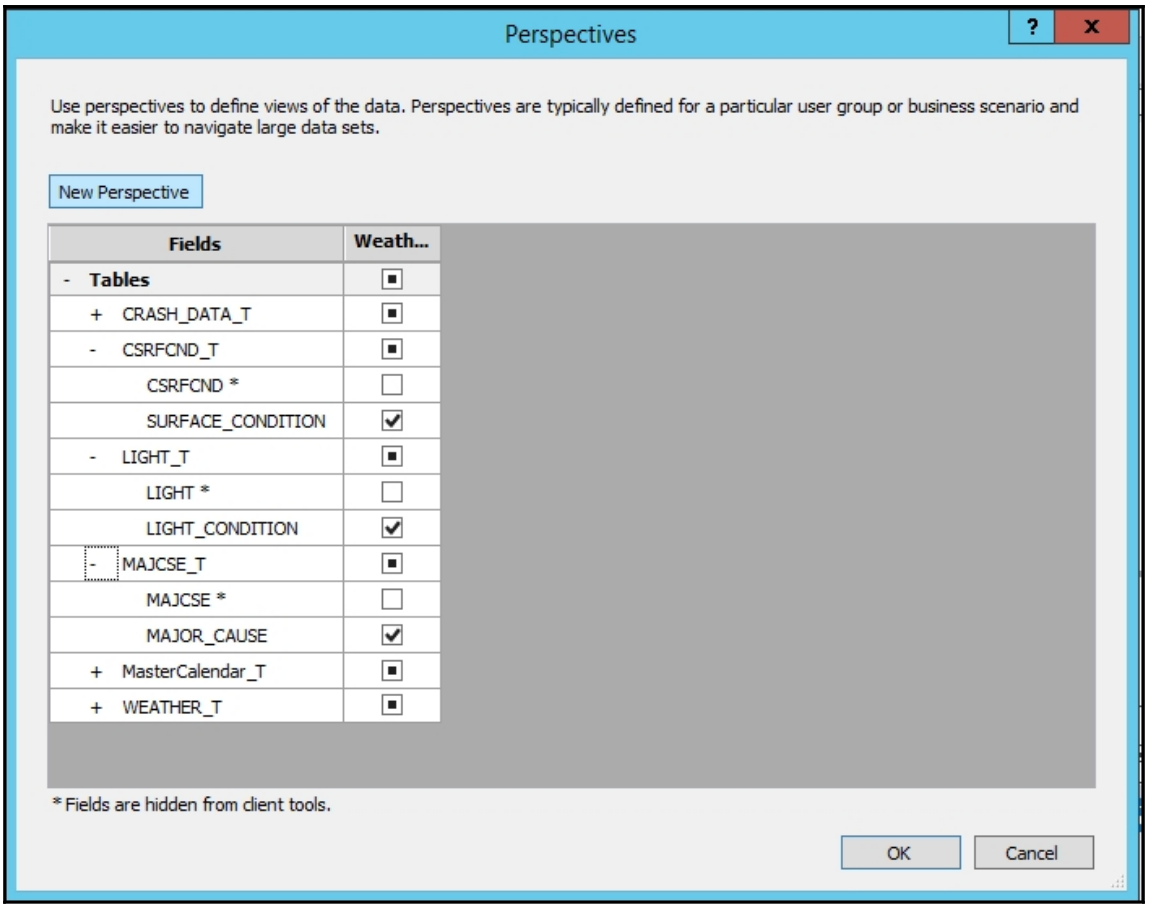

Model
Table
Column
Team
Tools
Test
Analyze
Window
Import From Data Source...
Analyze in Excel
Process
Translations
Existing Connections...
Perspectives
Roles...
Select Pers
Create and Manage
Select

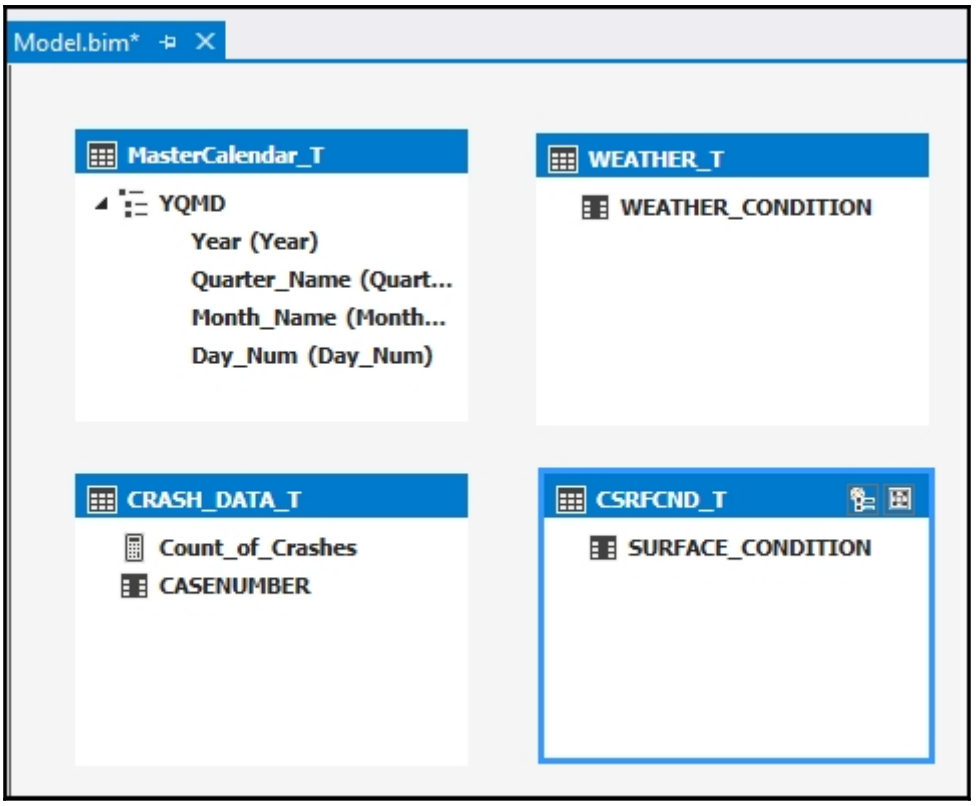

Perspectives
Use perspectives to define views of the data. Perspectives are typically defined for a particular user group or business scenario and make it easier to navigate large data sets.
New Perspective
Fields
New Perspective
- Tables
- CRASH_DATA_T
CASENUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
CRASH_DATE_Full
CRASH_DAY
CRASH_KEY
CRASH_MONTH
CRCOMNNR
CSEV
CSRFCND
DISTRICT
DRUGALC
* Fields are hidden from client tools.
OK
Cancel

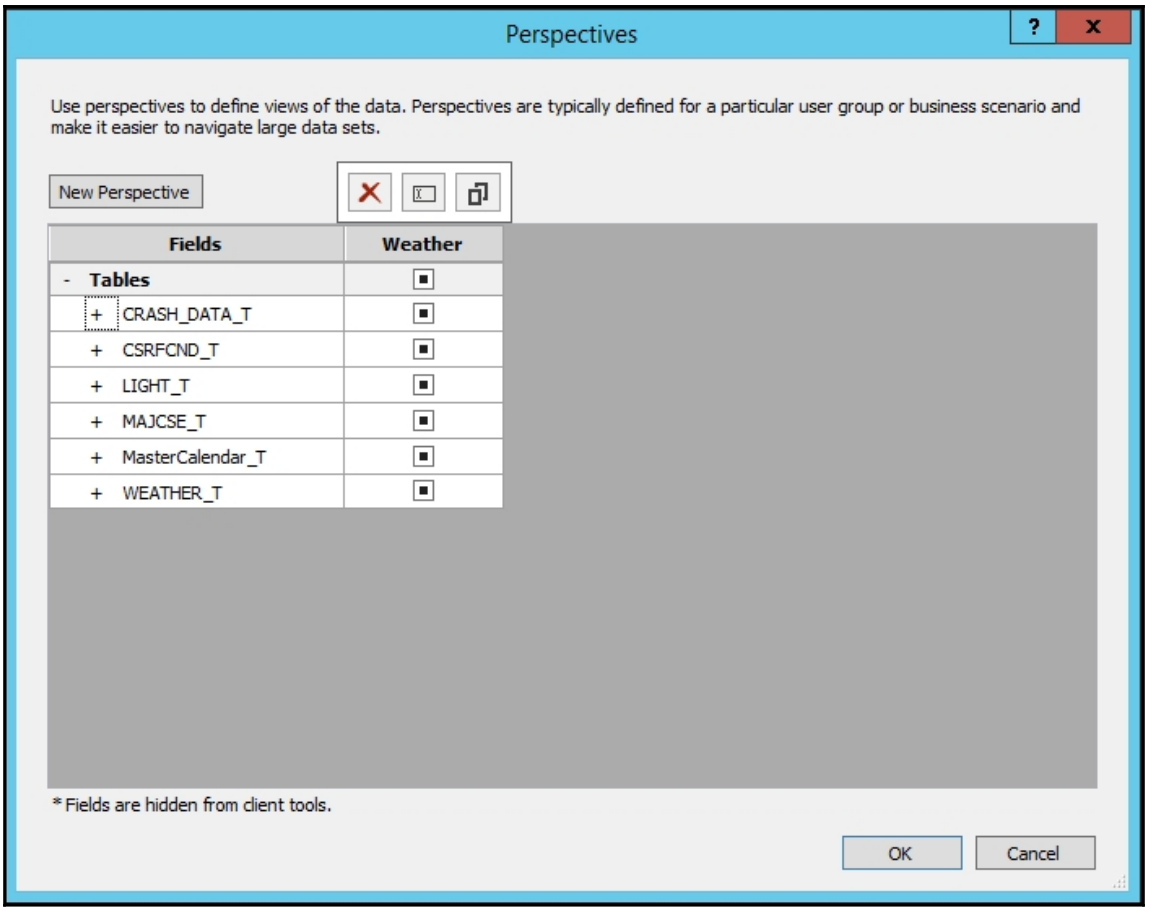

Perspectives
Use perspectives to define views of the data. Perspectives are typically defined for a particular user group or business scenario and make it easier to navigate large data sets.
New Perspective
Fields
Weath...
MasterCalendar_T
Date
Day_Name
Day_Num
MasterCalendarKey
Month_Name
Month_Num
Quarter_Name
Quarter_Num
Year
YQMD
WEATHER_T
WEATHER *
WEATHER_CONDITION
* Fields are hidden from client tools.
OK
Cancel
File Edit View Project Build Debug Model Table Column Team Tools Test Analyze Window Help
Start
Select Perspective
Weather
Model.bim
Solution Ex

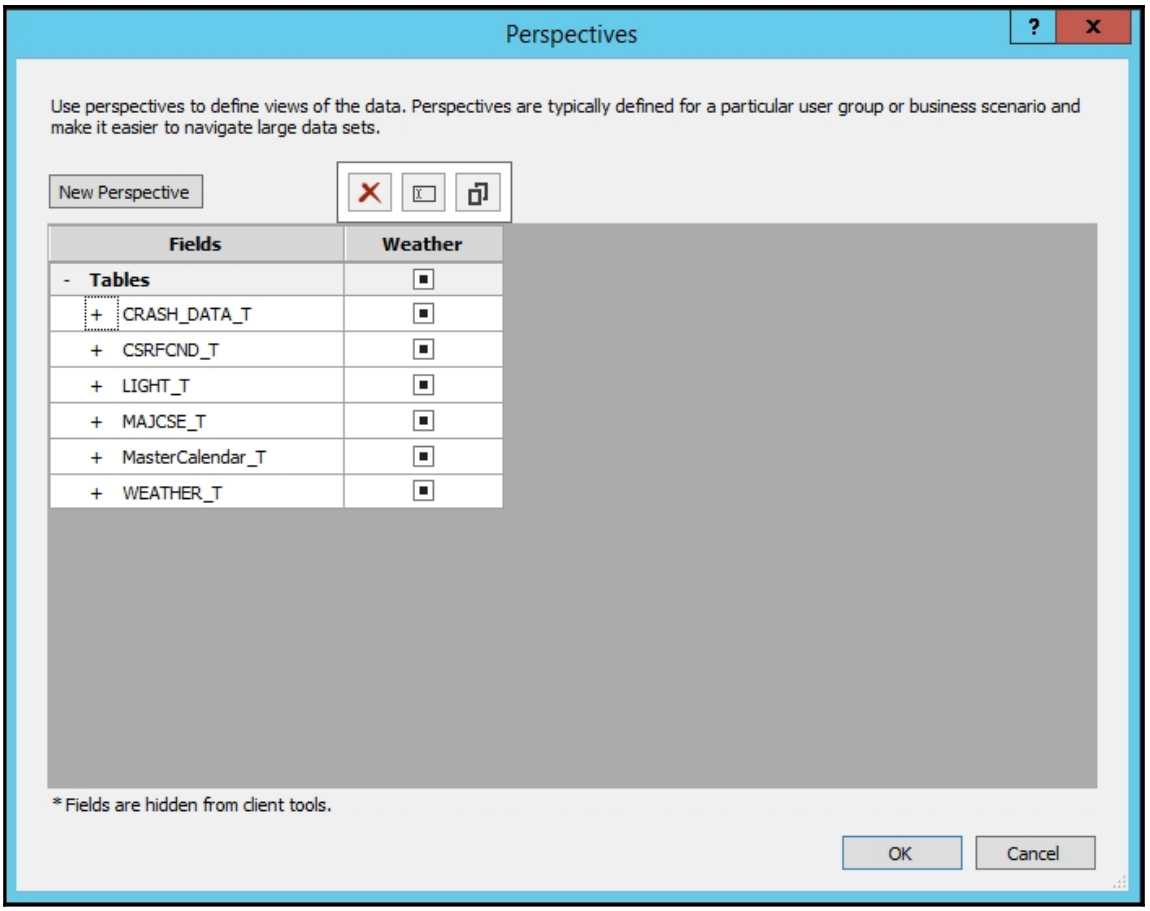

File Edit View Project Build Debug Model Table Column Team Tools Test
Start
Server Explorer
Toolbox
SQL Server Ob
Model.bim
MasterCalendar_T
YQMD
Year (Year)
Quarter_Name (Quart...
Month_Name (Month...
Day_Num (Day_Num)
WEATHER_T
WEATHER_CONDITION
Data Connection Wizard
Select Database and Table
Select the Database and Table/Cube which contains the data you want.
Select the database that contains the data you want:
Crash_Data_SSASTM
Connect to a specific cube or table:
Name
Description
Modified
Created
Type
Crash_Data_Model
9/9/2016 1:15:45 PM
CUBE
Weather
9/9/2016 1:15:45 PM
PERSPECTIVE
Cancel
< Back
Next >
Finish


PivotTable Fields
Show fields:
(All)
Search
CRASH_DATA_T
Count_of_Crashes
CRASH_DATA_T
CASENUMBER
MasterCalendar_T
YQMD


Perspectives
Use perspectives to define views of the data. Perspectives are typically defined for a particular user group or business scenario and make it easier to navigate large data sets.
New Perspective
Fields
Weath...
- Tables
+ CRASH_DATA_T
- CSRFCND_T
CSRFCND *
SURFACE_CONDITION
- LIGHT_T
LIGHT *
LIGHT_CONDITION
- MAJCSE_T
MAJCSE *
MAJOR_CAUSE
+ MasterCalendar_T
+ WEATHER_T
* Fields are hidden from client tools.
OK
Cancel


Model.bim*
MasterCalendar_T
YQMD
Year (Year)
Quarter_Name (Quart...
Month_Name (Month...
Day_Num (Day_Num)
WEATHER_T
WEATHER_CONDITION
CRASH_DATA_T
Count_of_Crashes
CASENUMBER
CSRFCND_T
SURFACE_CONDITION


Perspectives
Use perspectives to define views of the data. Perspectives are typically defined for a particular user group or business scenario and make it easier to navigate large data sets.
New Perspective
Fields
Weather
- Tables
+ CRASH_DATA_T
+ CSRFCND_T
+ LIGHT_T
+ MAJCSE_T
+ MasterCalendar_T
+ WEATHER_T
* Fields are hidden from client tools.
OK
Cancel


Perspectives
Use perspectives to define views of the data. Perspectives are typically defined for a particular user group or business scenario and make it easier to navigate large data sets.
New Perspective
Fields
Weather
- Tables
+ CRASH_DATA_T
+ CSRFCND_T
+ LIGHT_T
+ MAJCSE_T
+ MasterCalendar_T
+ WEATHER_T
* Fields are hidden from client tools.
OK
Cancel

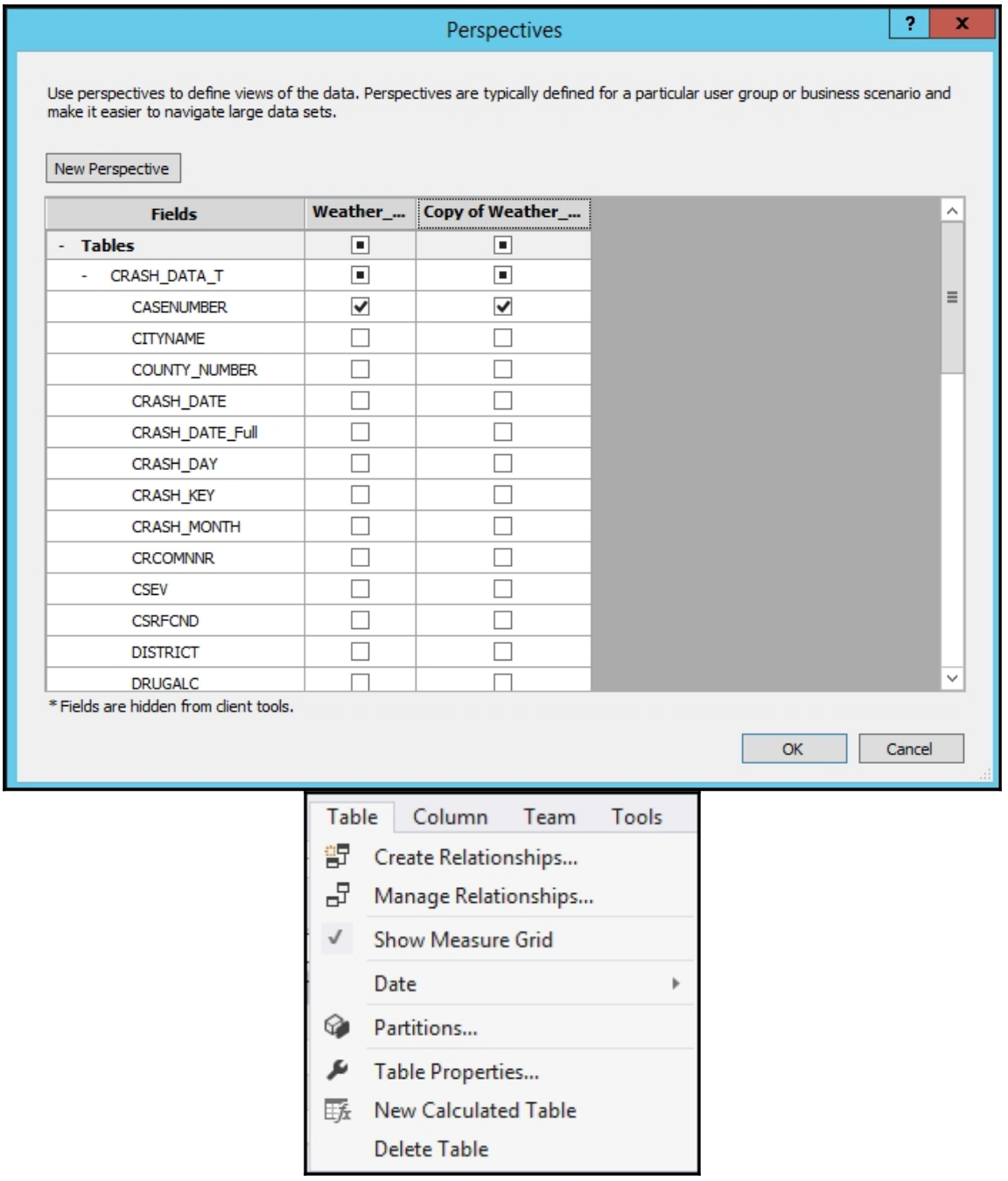
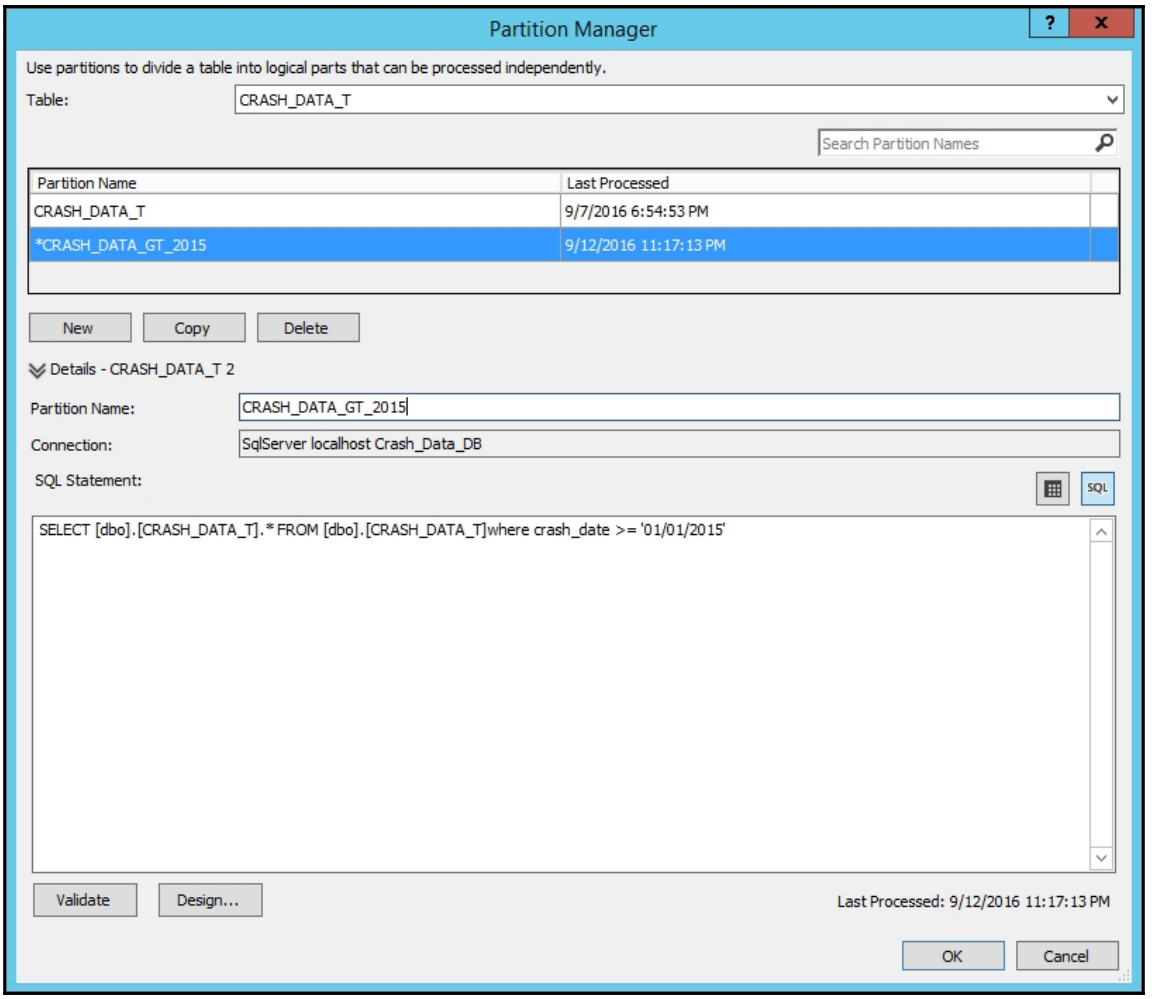
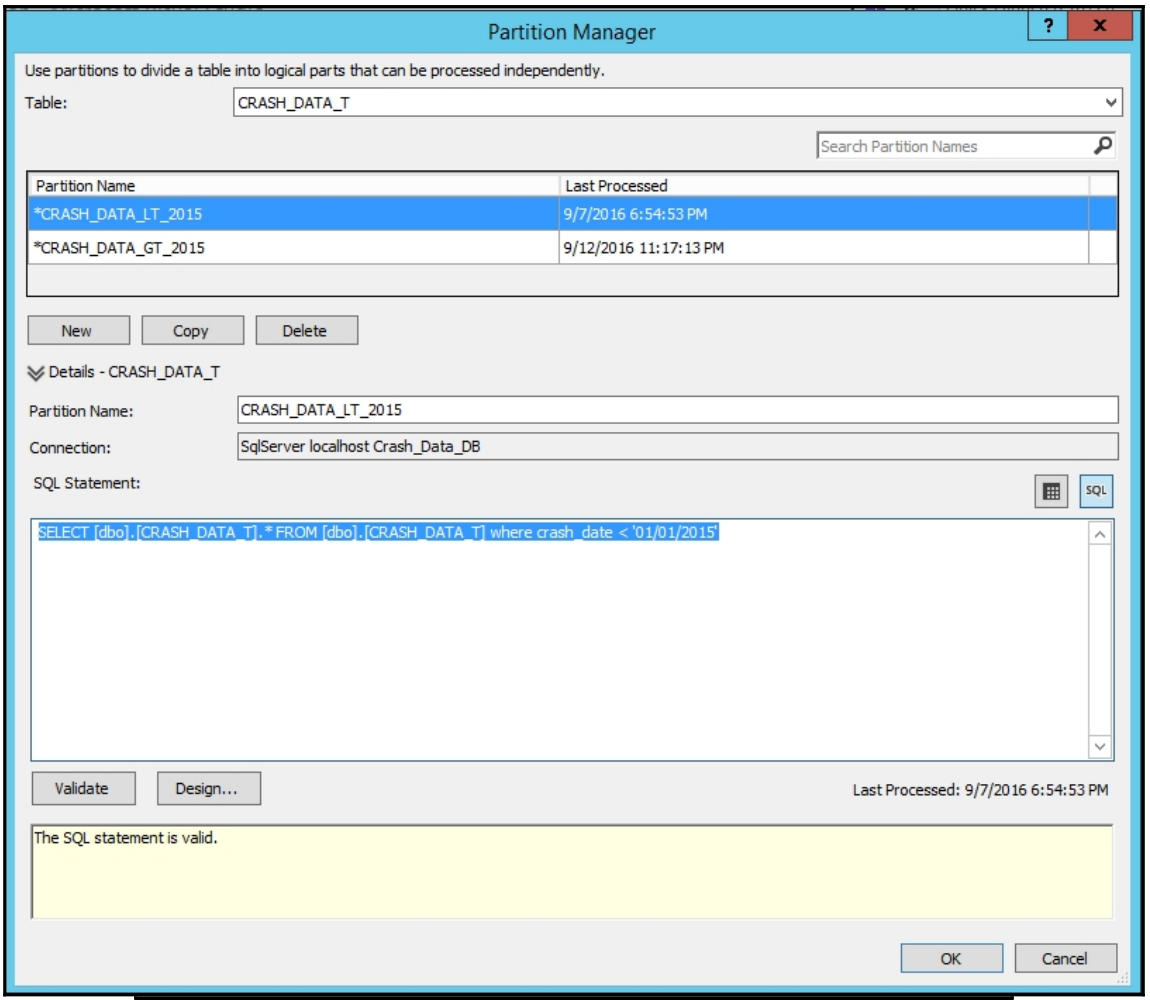
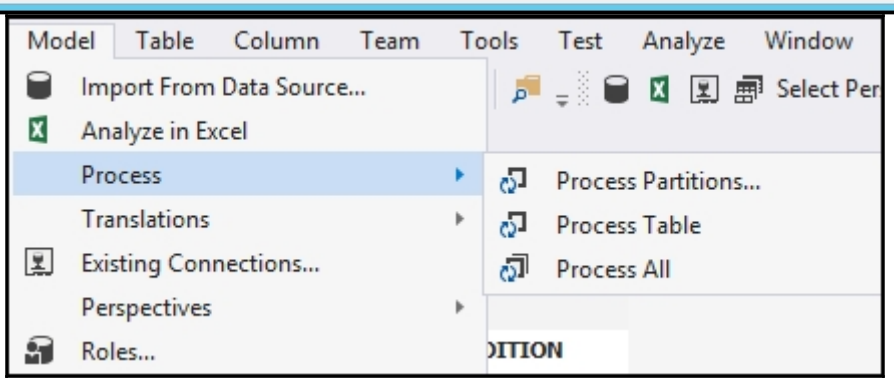
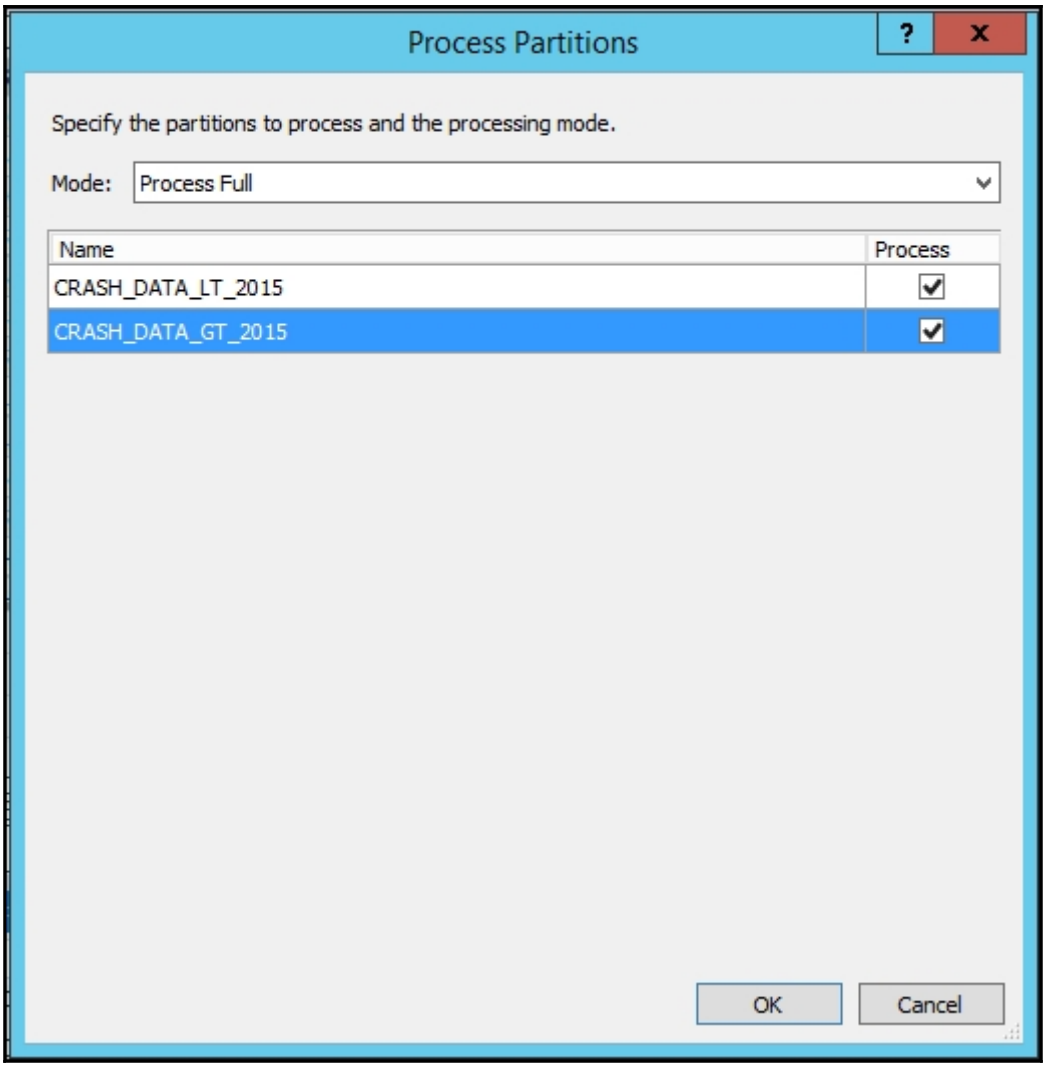

Perspectives
Use perspectives to define views of the data. Perspectives are typically defined for a particular user group or business scenario and make it easier to navigate large data sets.
New Perspective
Fields
Weather_...
Copy of Weather_...
- Tables
- CRASH_DATA_T
CASENUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
CRASH_DATE_Full
CRASH_DAY
CRASH_KEY
CRASH_MONTH
CRCOMNNR
CSEV
CSRFCND
DISTRICT
DRUGALC
* Fields are hidden from client tools.
OK
Cancel

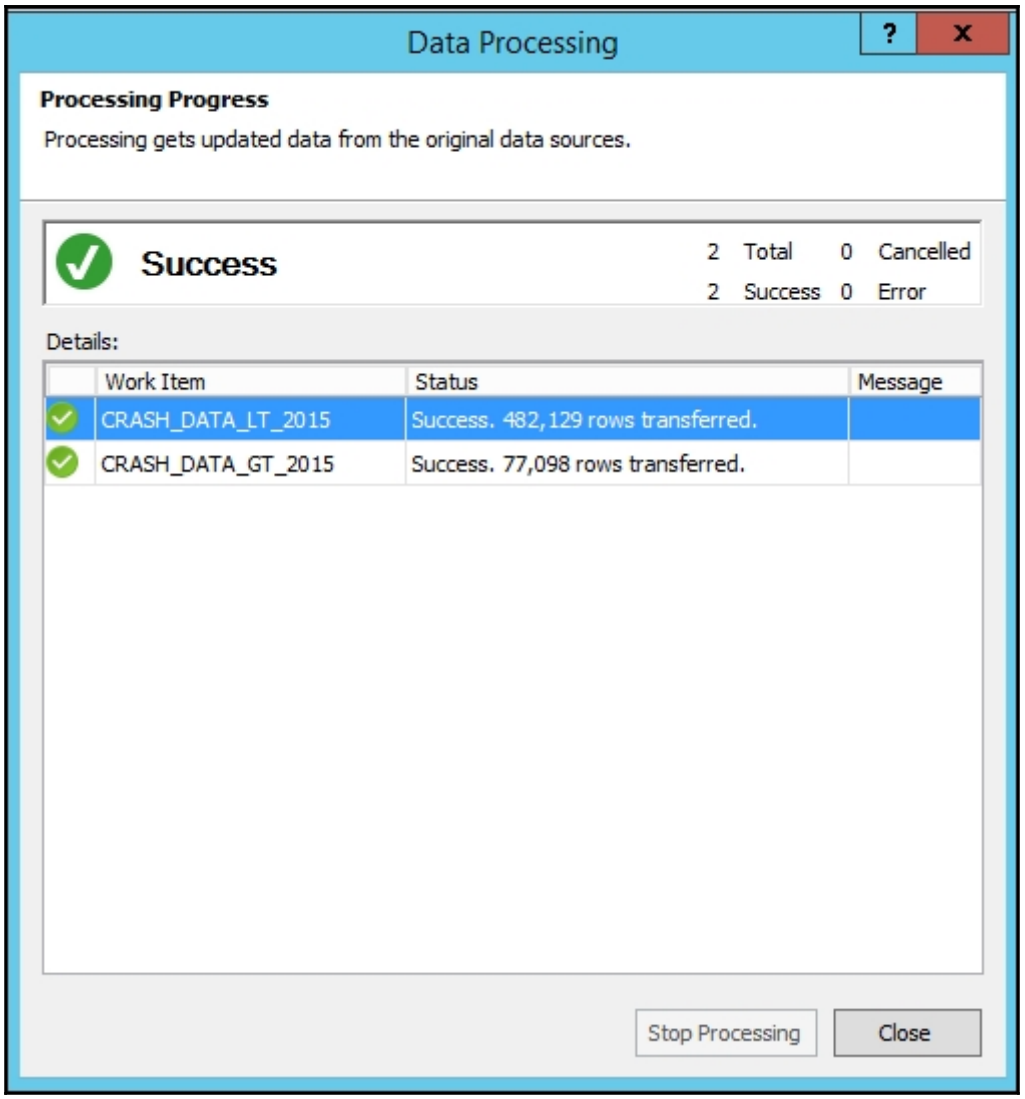
Table
Column
Team
Tools
Create Relationships...
Manage Relationships...
Show Measure Grid
Date
Partitions...
Table Properties...
New Calculated Table
Delete Table

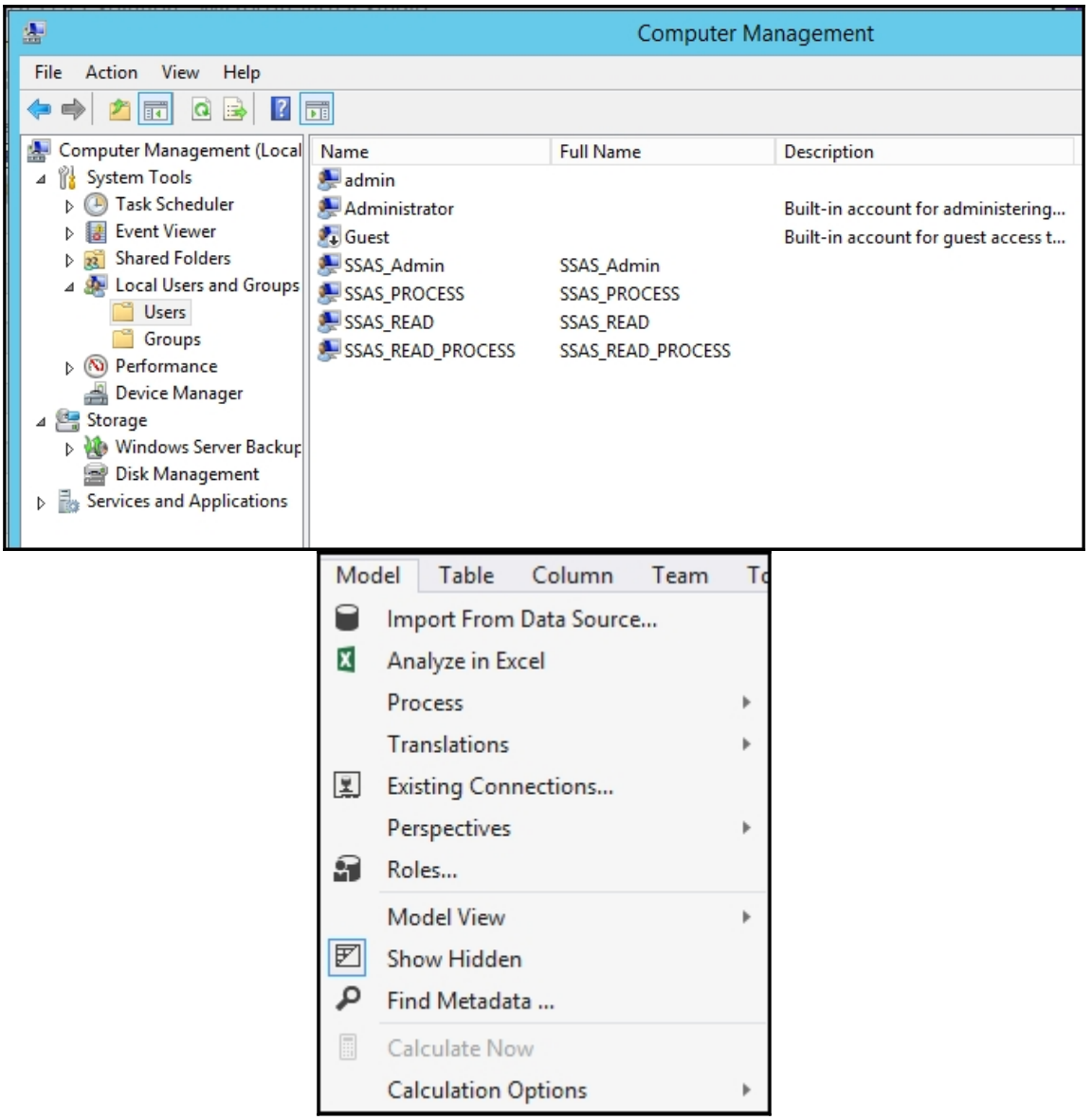

Partition Manager
Use partitions to divide a table into logical parts that can be processed independently.
Table:
CRASH_DATA_T
Search Partition Names
Partition Name
Last Processed
CRASH_DATA_T
9/7/2016 6:54:53 PM
*CRASH_DATA_GT_2015
9/12/2016 11:17:13 PM
New
Copy
Delete
Details - CRASH_DATA_T 2
Partition Name:
CRASH_DATA_GT_2015
Connection:
SqlServer localhost Crash_Data_DB
SQL Statement:
SQL
SELECT [dbo].[CRASH_DATA_T].* FROM [dbo].[CRASH_DATA_T]where crash_date >= '01/01/2015'
Validate
Design...
Last Processed: 9/12/2016 11:17:13 PM
OK
Cancel


Partition Manager
Use partitions to divide a table into logical parts that can be processed independently.
Table:
CRASH_DATA_T
Search Partition Names
Partition Name
Last Processed
*CRASH_DATA_LT_2015
9/7/2016 6:54:53 PM
*CRASH_DATA_GT_2015
9/12/2016 11:17:13 PM
New
Copy
Delete
Details - CRASH_DATA_T
Partition Name:
CRASH_DATA_LT_2015
Connection:
SqlServer localhost Crash_Data_DB
SQL Statement:
SQL
SELECT [dbo].[CRASH_DATA_T].* FROM [dbo].[CRASH_DATA_T] where crash_date < '01/01/2015'
Validate
Design...
Last Processed: 9/7/2016 6:54:53 PM
The SQL statement is valid.
OK
Cancel

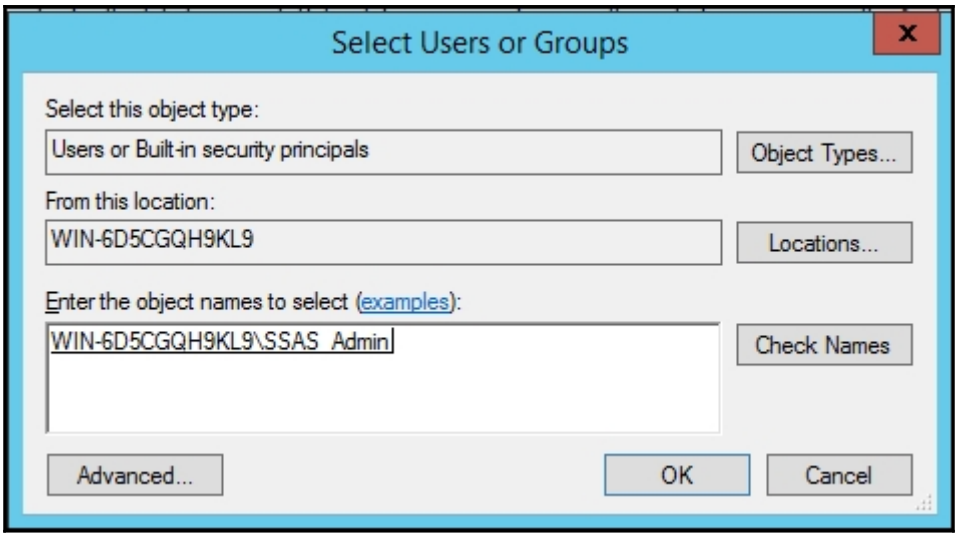

Model
Table
Column
Team
Tools
Test
Analyze
Window
Import From Data Source...
Analyze in Excel
Process
Translations
Existing Connections...
Perspectives
Roles...
Process Partitions...
Process Table
Process All

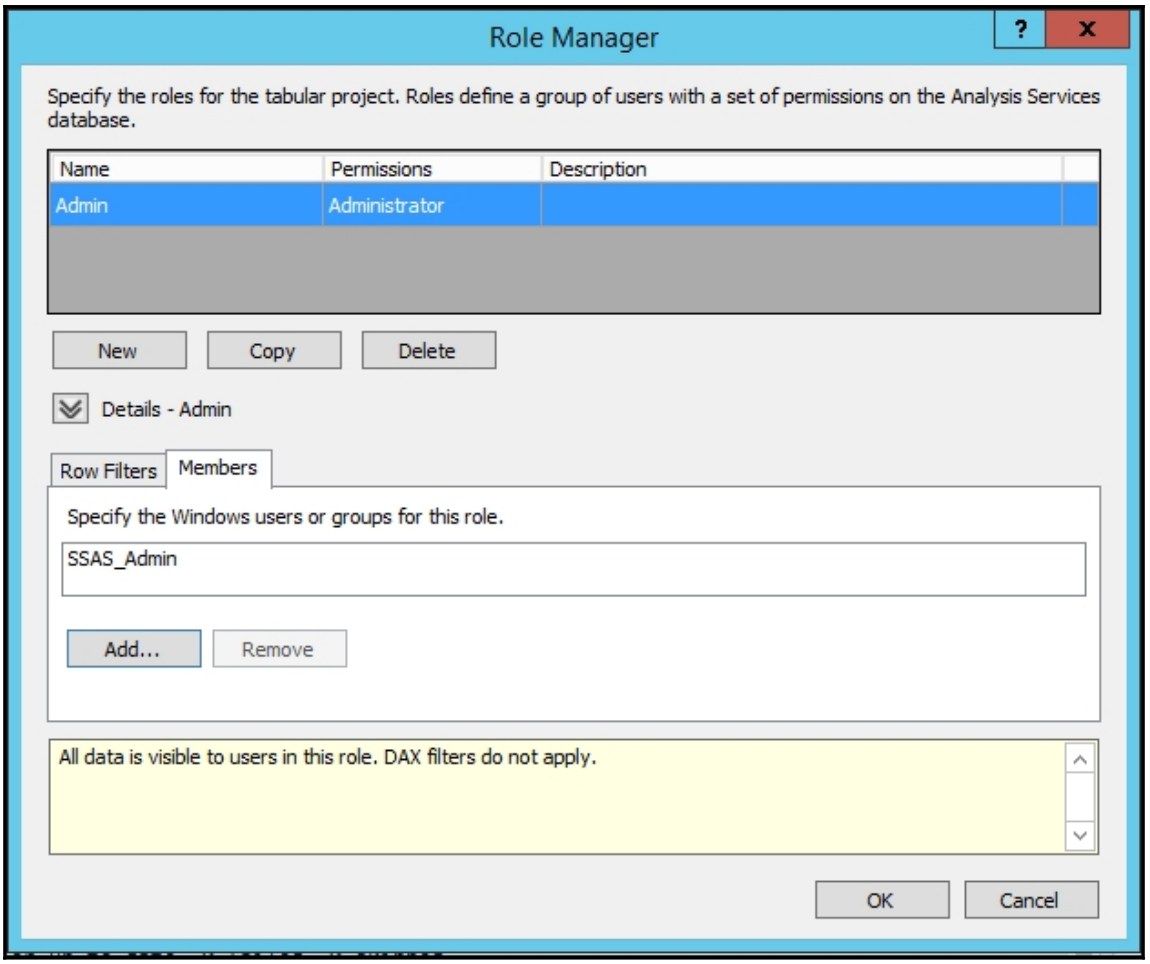

Process Partitions
Specify the partitions to process and the processing mode.
Mode:
Process Full
Name
Process
CRASH_DATA_LT_2015
CRASH_DATA_GT_2015
OK
Cancel

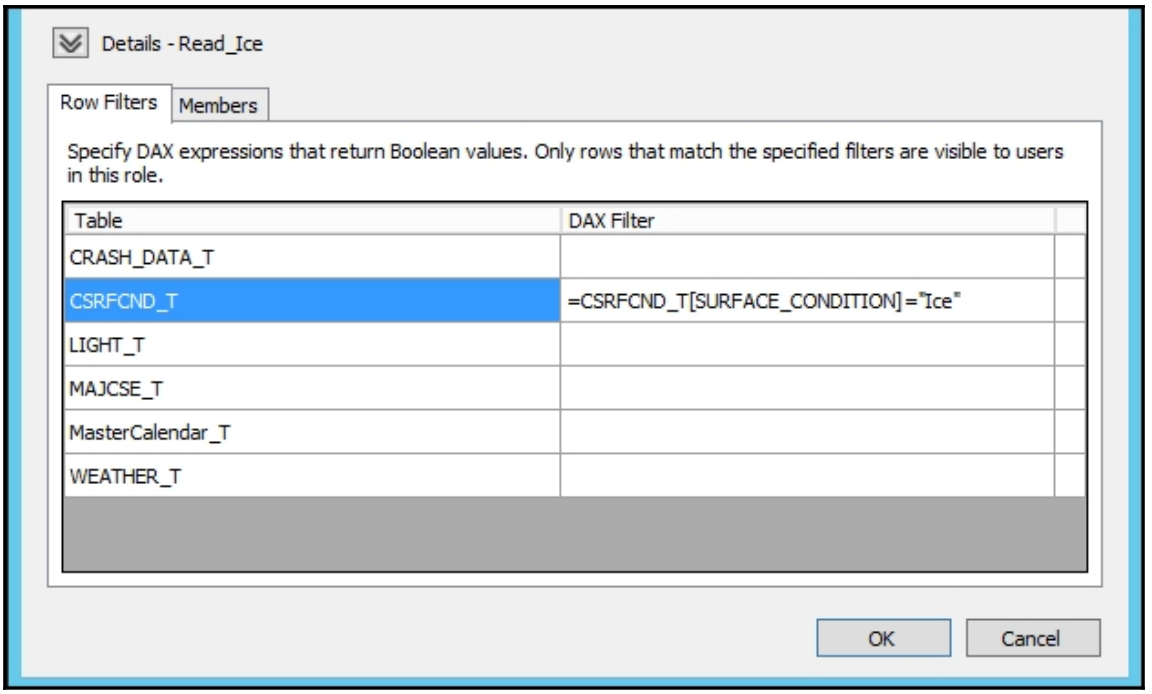

Data Processing
?
X
Processing Progress
Processing gets updated data from the original data sources.
Success
2 Total 0 Cancelled
2 Success 0 Error
Details:
Work Item
Status
Message
CRASH_DATA_LT_2015
Success. 482,129 rows transferred.
CRASH_DATA_GT_2015
Success. 77,098 rows transferred.
Stop Processing
Close

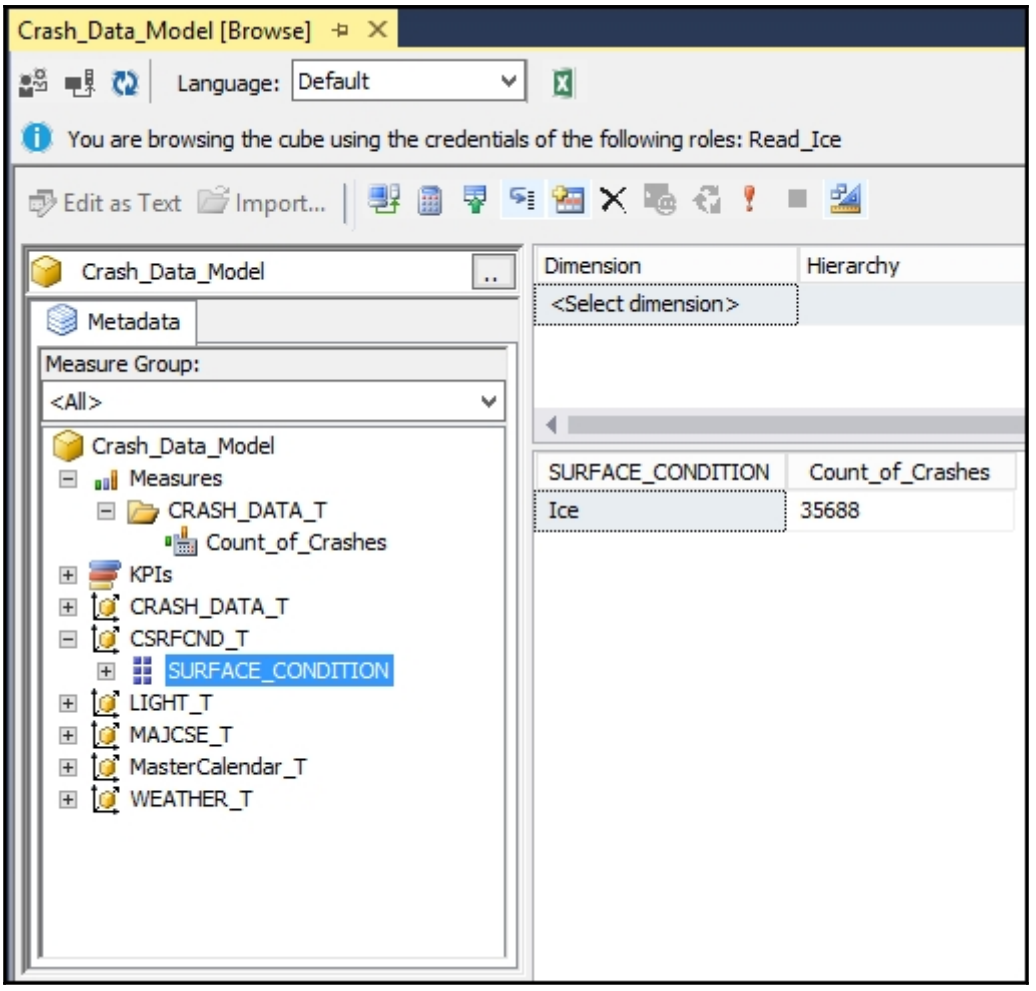

Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Users
Groups
Performance
Device Manager
Storage
Windows Server Backup
Disk Management
Services and Applications
Name
Full Name
Description
admin
Administrator
Built-in account for administering...
Guest
Built-in account for guest access t...
SSAS_Admin
SSAS_Admin
SSAS_PROCESS
SSAS_PROCESS
SSAS_READ
SSAS_READ
SSAS_READ_PROCESS
SSAS_READ_PROCESS

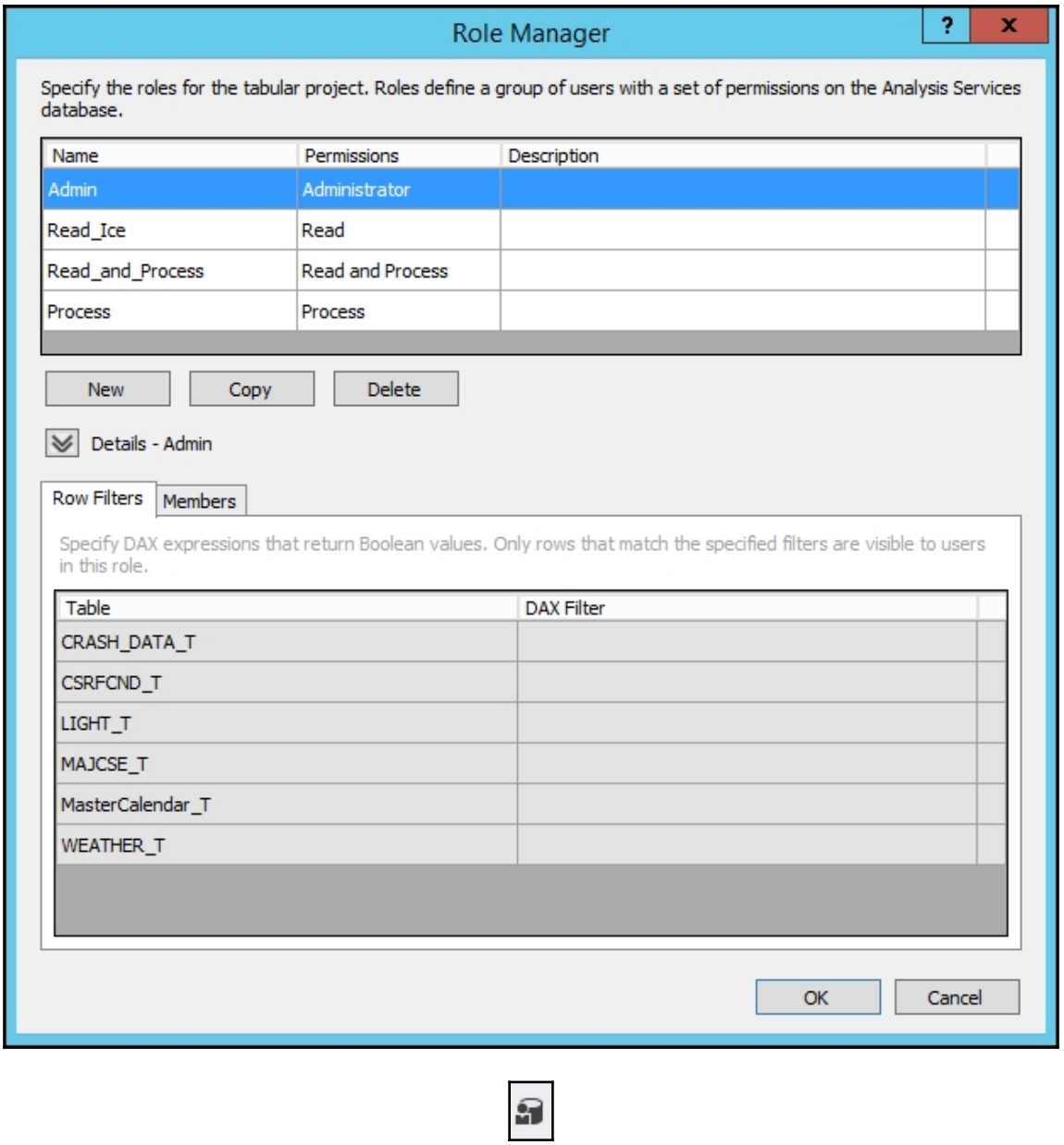
Model
Table
Column
Team
Import From Data Source...
Analyze in Excel
Process
Translations
Existing Connections...
Perspectives
Roles...
Model View
Show Hidden
Find Metadata ...
Calculate Now
Calculation Options

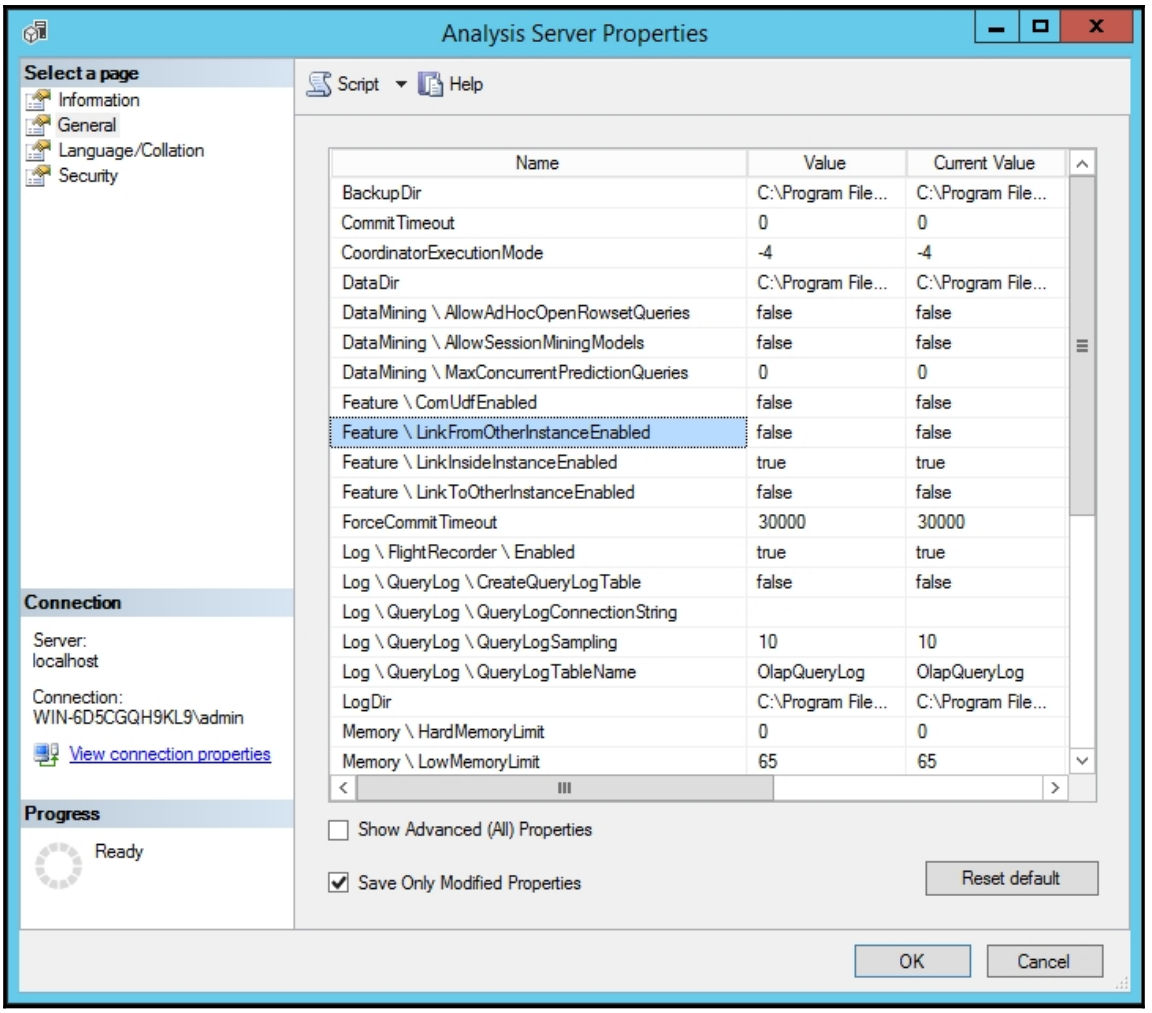

Select Users or Groups
Select this object type:
Users or Built-in security principals
Object Types...
From this location:
WIN-6D5CGQH9KL9
Locations...
Enter the object names to select (examples):
WIN-6D5CGQH9KL9\SSAS_Admin
Check Names
Advanced...
OK
Cancel

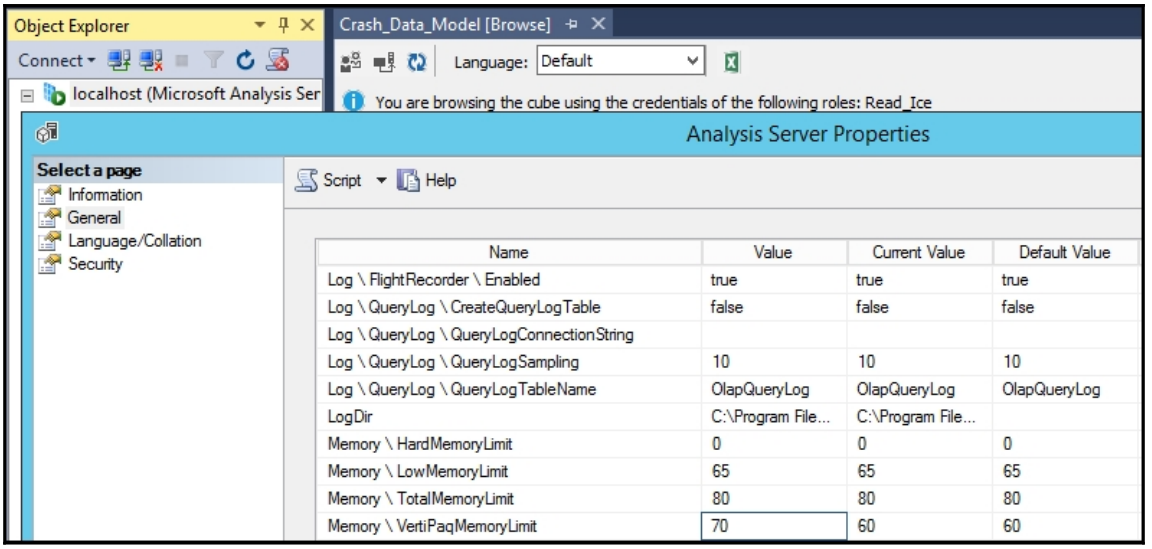

Role Manager
Specify the roles for the tabular project. Roles define a group of users with a set of permissions on the Analysis Services database.
Name
Permissions
Description
Admin
Administrator
New
Copy
Delete
Details - Admin
Row Filters
Members
Specify the Windows users or groups for this role.
SSAS_Admin
Add...
Remove
All data is visible to users in this role. DAX filters do not apply.
OK
Cancel


Details - Read_Ice
Row Filters
Members
Specify DAX expressions that return Boolean values. Only rows that match the specified filters are visible to users in this role.
Table
DAX Filter
CRASH_DATA_T
CSRFCND_T
=CSRFCND_T[SURFACE_CONDITION]="Ice"
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
OK
Cancel

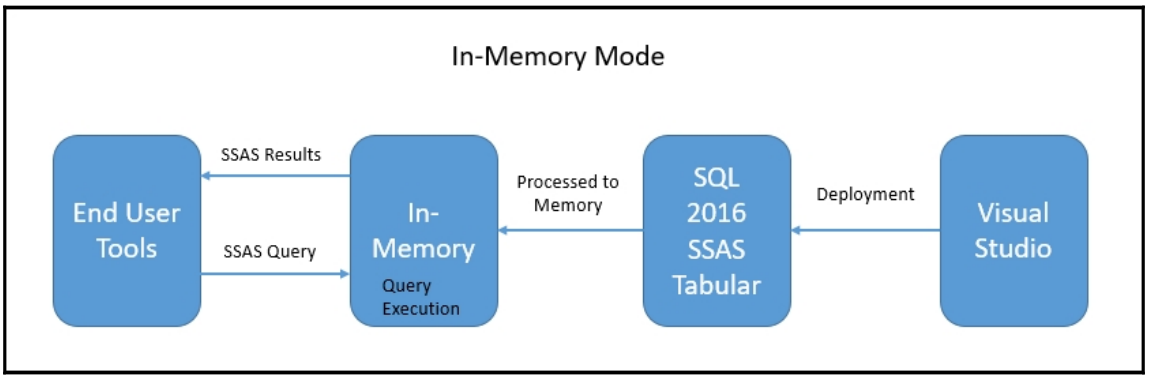

Crash_Data_Model [Browse]
Language: Default
You are browsing the cube using the credentials of the following roles: Read_Ice
Edit as Text
Import...
Crash_Data_Model
Metadata
Measure Group:
<All>
Crash_Data_Model
Measures
CRASH_DATA_T
Count_of_Crashes
KPIs
CRASH_DATA_T
CSRFCND_T
SURFACE_CONDITION
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
Dimension
Hierarchy
<Select dimension>
SURFACE_CONDITION
Count_of_Crashes
Ice
35688

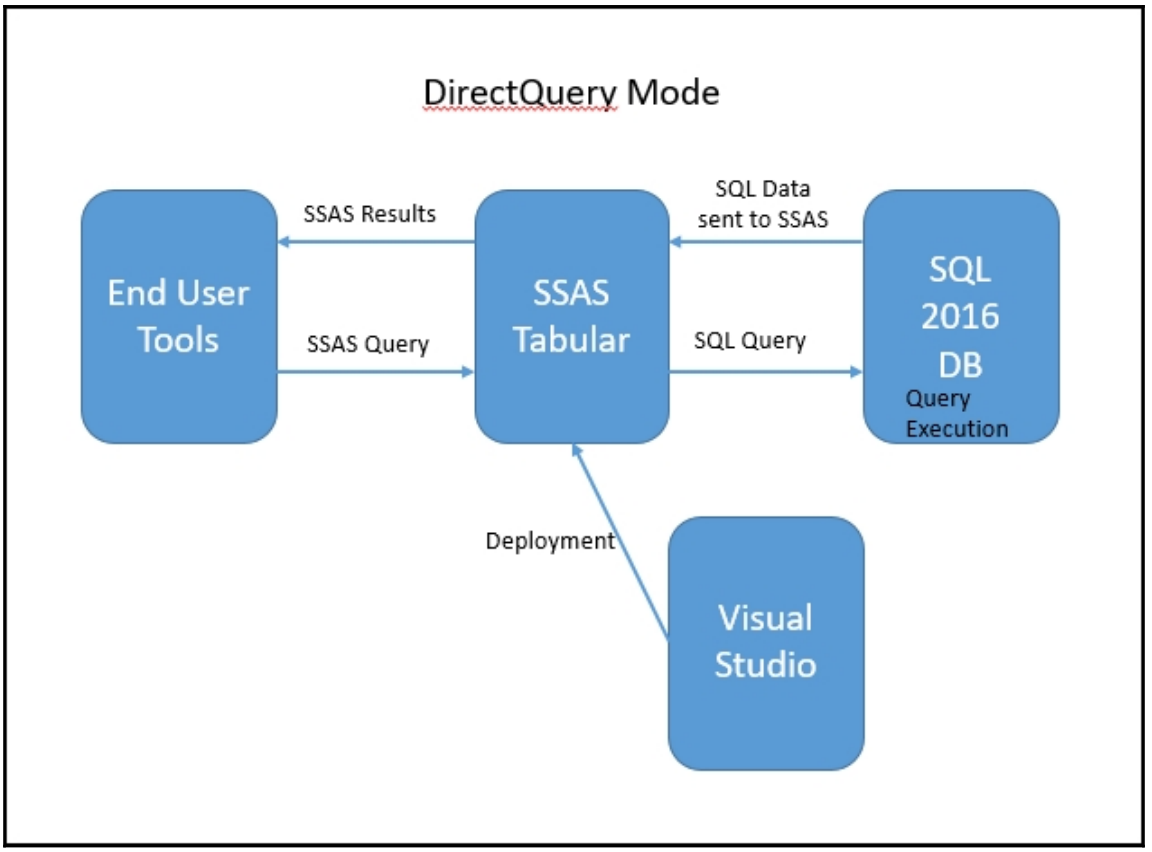

Role Manager
Specify the roles for the tabular project. Roles define a group of users with a set of permissions on the Analysis Services database.
Name
Permissions
Description
Admin
Administrator
Read_Ice
Read
Read_and_Process
Read and Process
Process
Process
New
Copy
Delete
Details - Admin
Row Filters
Members
Specify DAX expressions that return Boolean values. Only rows that match the specified filters are visible to users in this role.
Table
DAX Filter
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
OK
Cancel

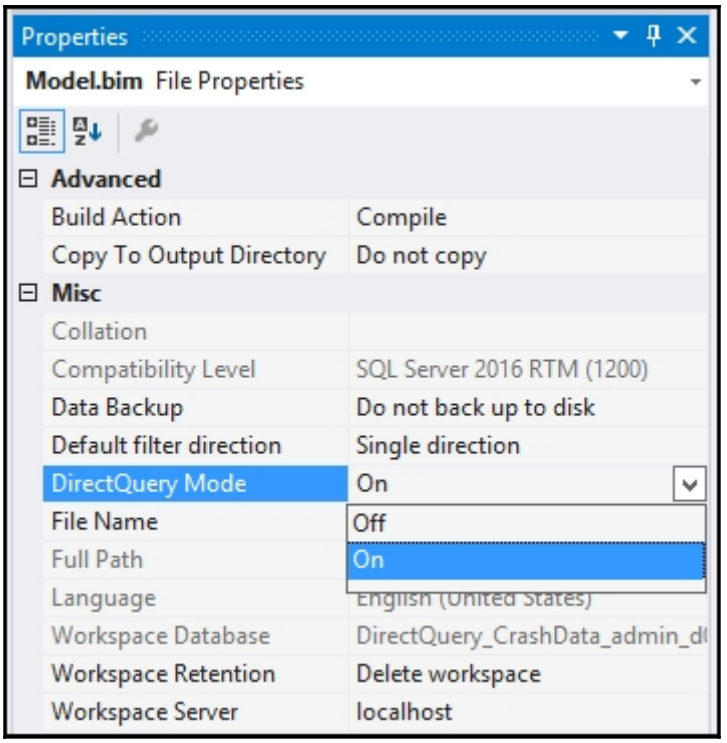

Analysis Server Properties
Select a page
Information
General
Language/Collation
Security
Script
Help
Name
Value
Current Value
BackupDir
C:\Program File...
C:\Program File...
CommitTimeout
0
0
CoordinatorExecutionMode
-4
-4
DataDir
C:\Program File...
C:\Program File...
DataMining \ AllowAdHocOpenRowsetQueries
false
false
DataMining \ AllowSessionMiningModels
false
false
DataMining \ MaxConcurrentPredictionQueries
0
0
Feature \ ComUdfEnabled
false
false
Feature \ LinkFromOtherInstanceEnabled
false
false
Feature \ LinkInsideInstanceEnabled
true
true
Feature \ LinkToOtherInstanceEnabled
false
false
ForceCommitTimeout
30000
30000
Log \ FlightRecorder \ Enabled
true
true
Log \ QueryLog \ CreateQueryLogTable
false
false
Log \ QueryLog \ QueryLogConnectionString
Log \ QueryLog \ QueryLogSampling
10
10
Log \ QueryLog \ QueryLogTableName
OlapQueryLog
OlapQueryLog
LogDir
C:\Program File...
C:\Program File...
Memory \ HardMemoryLimit
0
0
Memory \ LowMemoryLimit
65
65
Connection
Server:
localhost
Connection:
WIN-6D5CGQH9KL9\admin
View connection properties
Progress
Ready
Show Advanced (All) Properties
Save Only Modified Properties
Reset default
OK
Cancel


Object Explorer
Connect
localhost (Microsoft Analysis Ser
Crash_Data_Model [Browse]
Language: Default
You are browsing the cube using the credentials of the following roles: Read_Ice
Analysis Server Properties
Select a page
Information
General
Language/Collation
Security
Script
Help
Name
Value
Current Value
Default Value
Log \ FlightRecorder \ Enabled
true
true
true
Log \ QueryLog \ CreateQueryLogTable
false
false
false
Log \ QueryLog \ QueryLogConnectionString
Log \ QueryLog \ QueryLogSampling
10
10
10
Log \ QueryLog \ QueryLogTableName
OlapQueryLog
OlapQueryLog
OlapQueryLog
LogDir
C:\Program File...
C:\Program File...
Memory \ HardMemoryLimit
0
0
0
Memory \ LowMemoryLimit
65
65
65
Memory \ TotalMemoryLimit
80
80
80
Memory \ VertiPaqMemoryLimit
70
60
60

Chapter 6: In-Memory Versus DirectQuery Mode




DirectQuery Mode
End User Tools
SSAS Results
SSAS Query
SSAS Tabular
SQL Data sent to SSAS
SQL Query
SQL 2016 DB
Query Execution
Deployment
Visual Studio


Properties
Model.bim File Properties
Advanced
Build Action
Compile
Copy To Output Directory
Do not copy
Misc
Collation
Compatibility Level
SQL Server 2016 RTM (1200)
Data Backup
Do not back up to disk
Default filter direction
Single direction
DirectQuery Mode
On
File Name
Off
Full Path
On
Language
Workspace Database
Workspace Retention
Delete workspace
Workspace Server
localhost

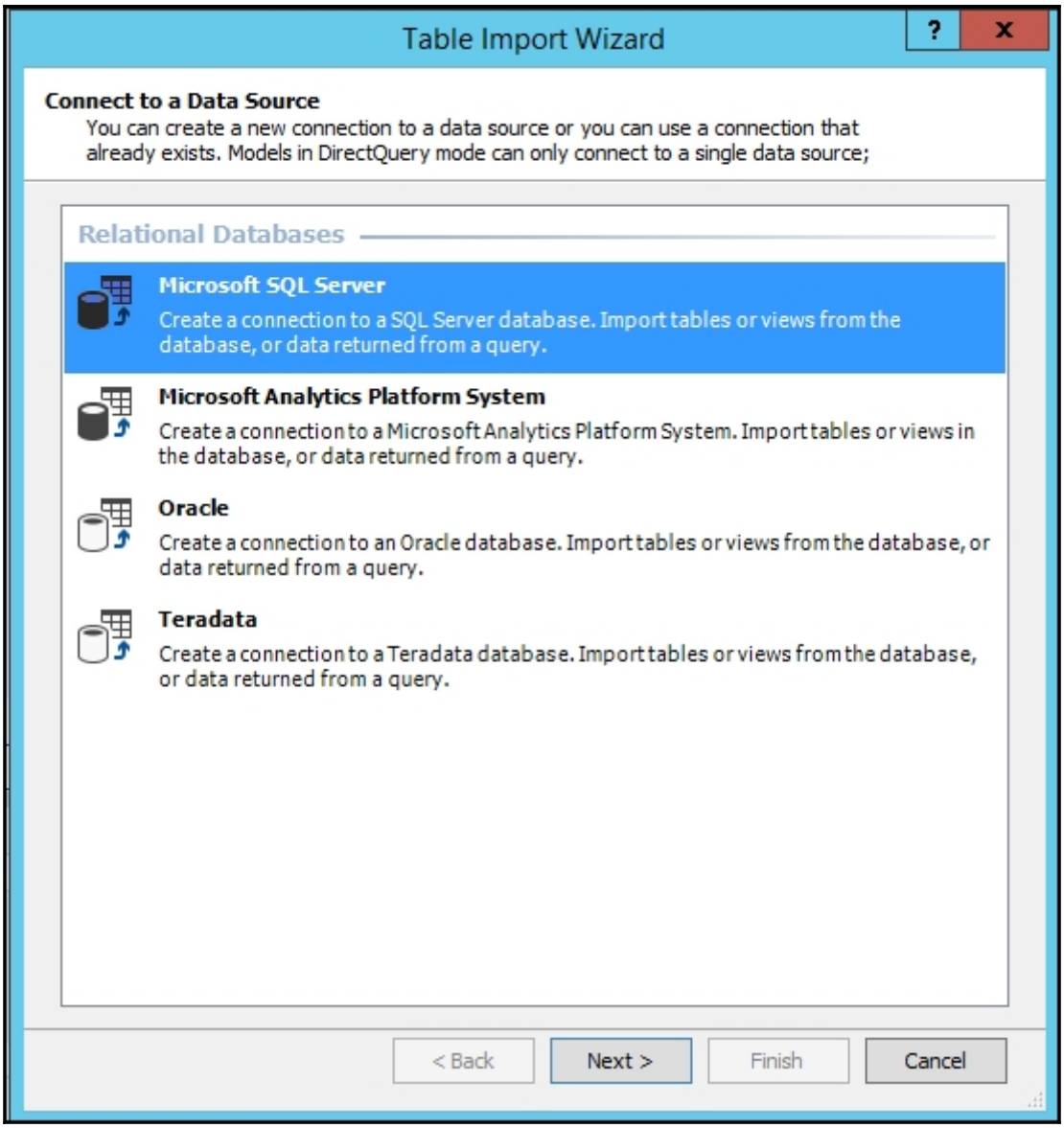


Table Import Wizard
?
X
Connect to a Data Source
You can create a new connection to a data source or you can use a connection that already exists. Models in DirectQuery mode can only connect to a single data source;
Relational Databases
Microsoft SQL Server
Create a connection to a SQL Server database. Import tables or views from the database, or data returned from a query.
Microsoft Analytics Platform System
Create a connection to a Microsoft Analytics Platform System. Import tables or views in the database, or data returned from a query.
Oracle
Create a connection to an Oracle database. Import tables or views from the database, or data returned from a query.
Teradata
Create a connection to a Teradata database. Import tables or views from the database, or data returned from a query.
< Back
Next >
Finish
Cancel

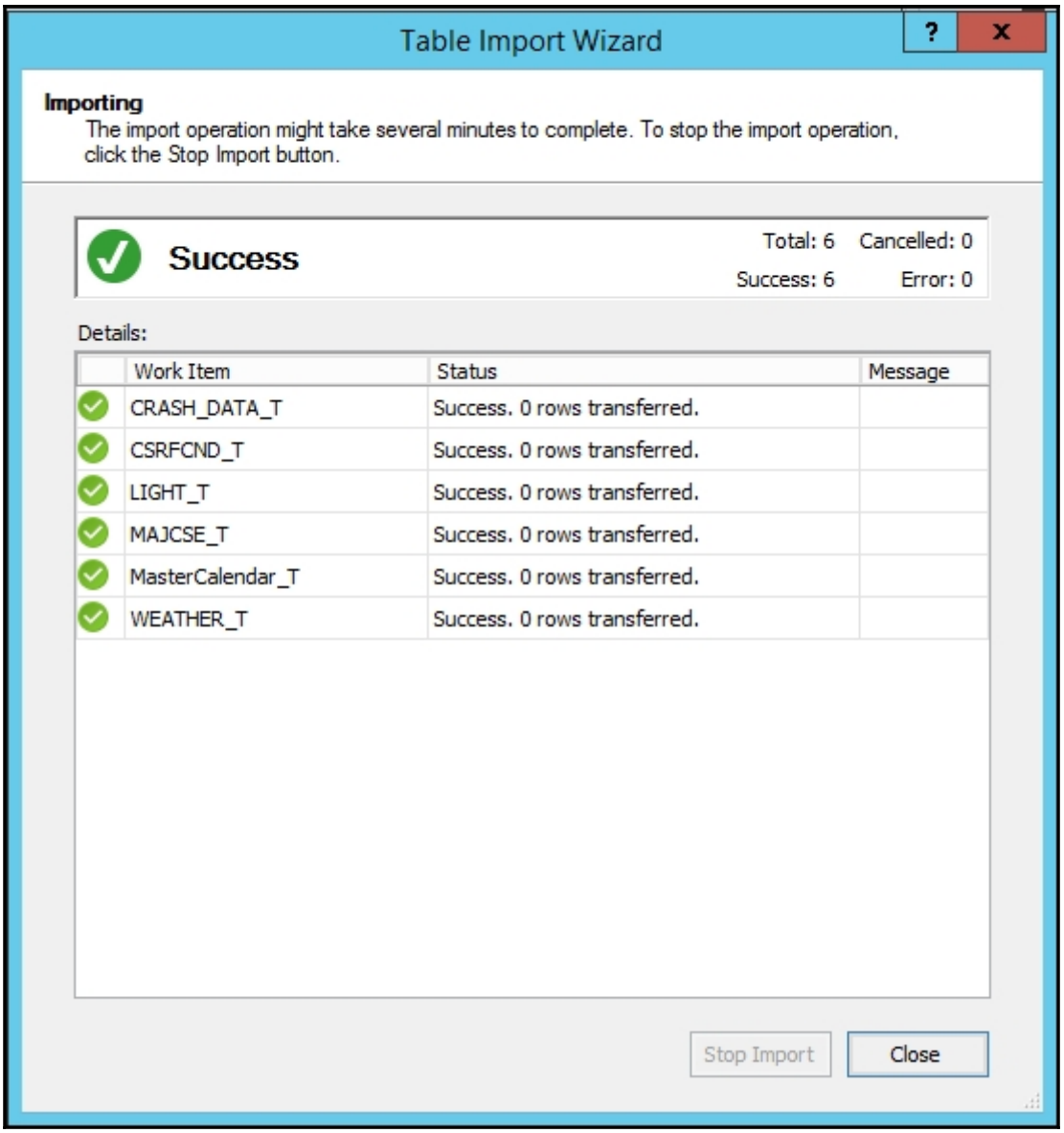
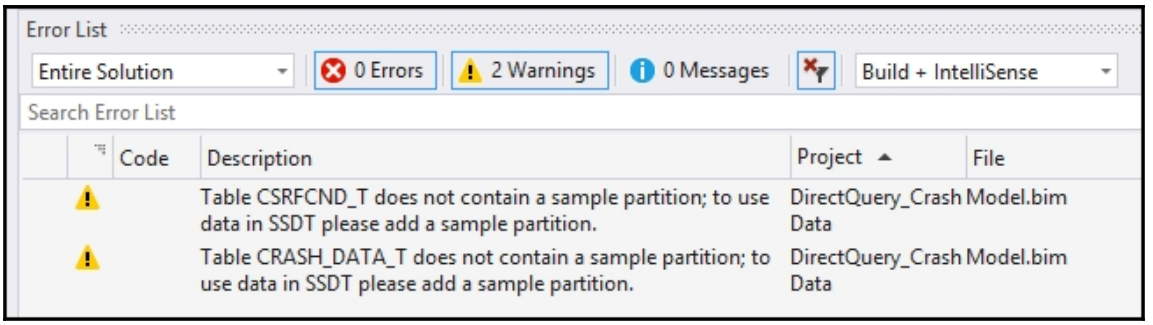
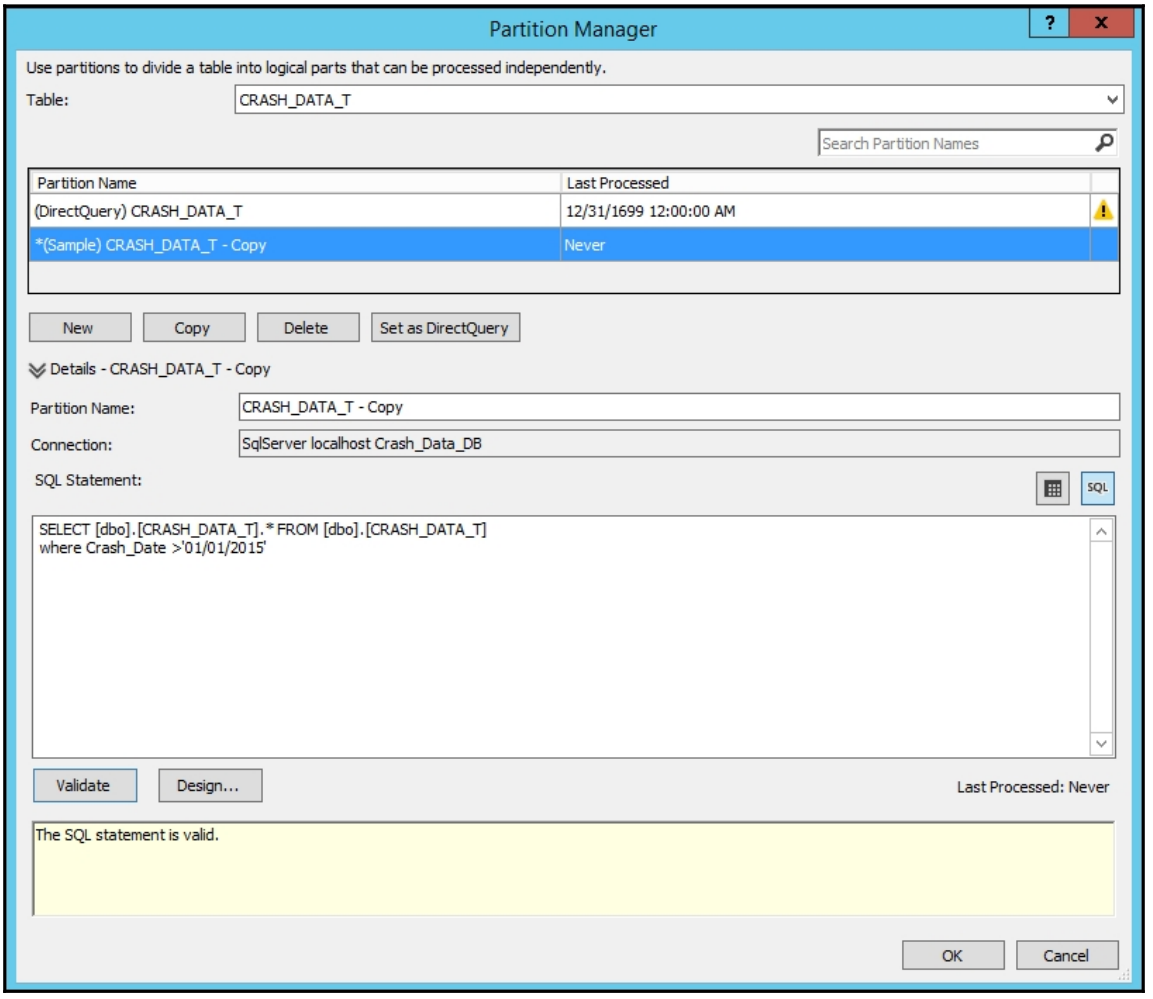


Table Import Wizard
?
X
Importing
The import operation might take several minutes to complete. To stop the import operation, click the Stop Import button.
Success
Total: 6
Cancelled: 0
Success: 6
Error: 0
Details:
Work Item
Status
Message
CRASH_DATA_T
Success. 0 rows transferred.
CSRFCND_T
Success. 0 rows transferred.
LIGHT_T
Success. 0 rows transferred.
MAJCSE_T
Success. 0 rows transferred.
MasterCalendar_T
Success. 0 rows transferred.
WEATHER_T
Success. 0 rows transferred.
Stop Import
Close

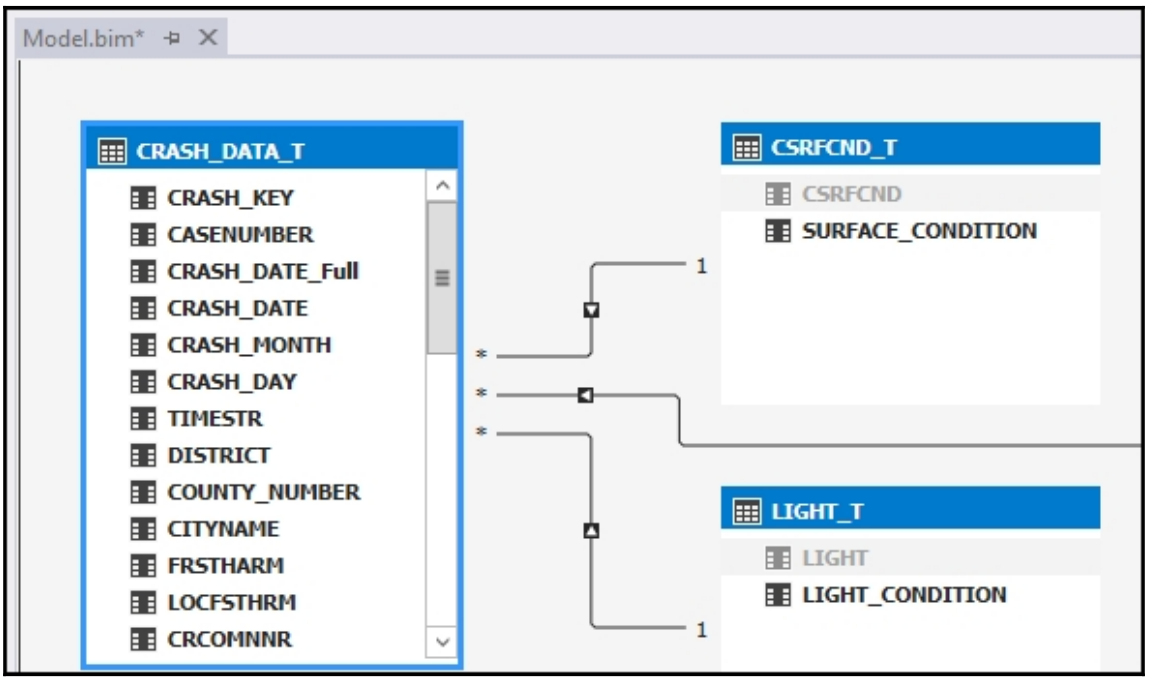

Error List
Entire Solution
0 Errors
2 Warnings
0 Messages
Build + IntelliSense
Search Error List
Code
Description
Project
File
Table CSRFCND_T does not contain a sample partition; to use data in SSDT please add a sample partition.
DirectQuery_Crash Data
Model.bim
Table CRASH_DATA_T does not contain a sample partition; to use data in SSDT please add a sample partition.
DirectQuery_Crash Data
Model.bim


Partition Manager
Use partitions to divide a table into logical parts that can be processed independently.
Table:
CRASH_DATA_T
Search Partition Names
Partition Name
Last Processed
(DirectQuery) CRASH_DATA_T
12/31/1699 12:00:00 AM
*(Sample) CRASH_DATA_T - Copy
Never
New
Copy
Delete
Set as DirectQuery
Details - CRASH_DATA_T - Copy
Partition Name:
CRASH_DATA_T - Copy
Connection:
SqlServer localhost Crash_Data_DB
SQL Statement:
SQL
SELECT [dbo].[CRASH_DATA_T].* FROM [dbo].[CRASH_DATA_T]
where Crash_Date >'01/01/2015'
Validate
Design...
Last Processed: Never
The SQL statement is valid.
OK
Cancel

SURFACE_CONDIT...	MAJOR_CAUSE	Count_of_Crashes
(null)	(null)	46918
(null)	Animal	17
(null)	Collision culvert	26
(null)	Collision Guard...	7
(null)	Collision with b...	30
(null)	Collision with b...	45
(null)	Collision with c...	282
(null)	Collision with d...	25
(null)	Collision with T...	4
(null)	Collision with u...	2
(null)	Fire	254
(null)	Immersion	1092
(null)	impact with At...	1
(null)	Jackknife	70
(null)	Non-motorist	6
(null)	Overall/rollover	556
(null)	Parked motor ...	3
(null)	Railway vehicle	4
(null)	Unknown	2
Dry	(null)	249651

```
SELECT
TOP (1000001) [t1].[SURFACE_CONDITION],[t3].[MAJOR_CAUSE],
COUNT_BIG([t0].[CASENUMBER])
 AS [a0]
FROM
(
((SELECT [dbo].[CRASH_DATA_T].* FROM [dbo].[CRASH_DATA_T]) AS [t0]

 left outer join

( SELECT [dbo].[CSRFCND_T].* FROM [dbo].[CSRFCND_T] ) AS [t1] on
(
[t0].[CSRFCND] = [t1].[CSRFCND]
)
)


 left outer join

( SELECT [dbo].[MAJCSE_T].* FROM [dbo].[MAJCSE_T] ) AS [t3] on
(
[t0].[MAJCSE] = [t3].[MAJCSE]
)
)

GROUP BY [t1].[SURFACE_CONDITION],[t3].[MAJOR_CAUSE]
```

Chapter 7: Securing Tabular Models

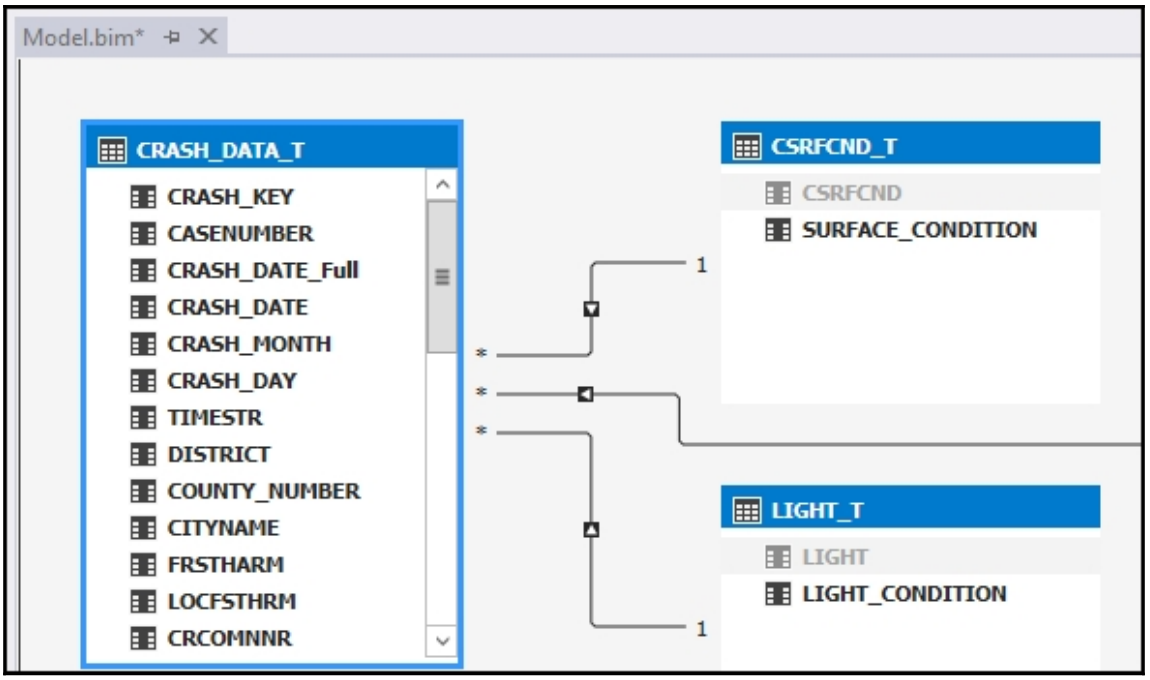


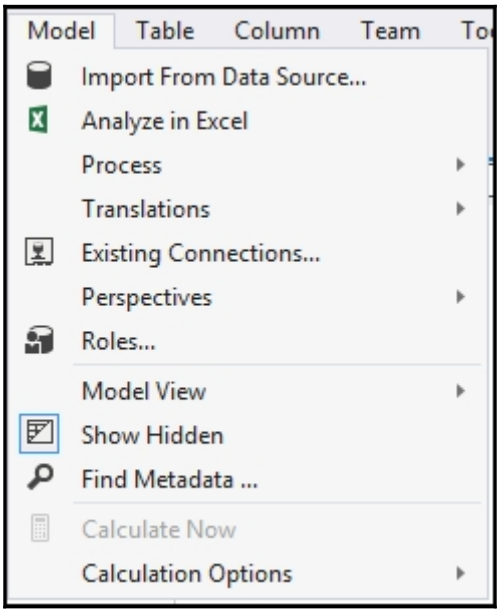
Dimension	Hierarchy	Operator	Filter Expression
<Select dimension>			

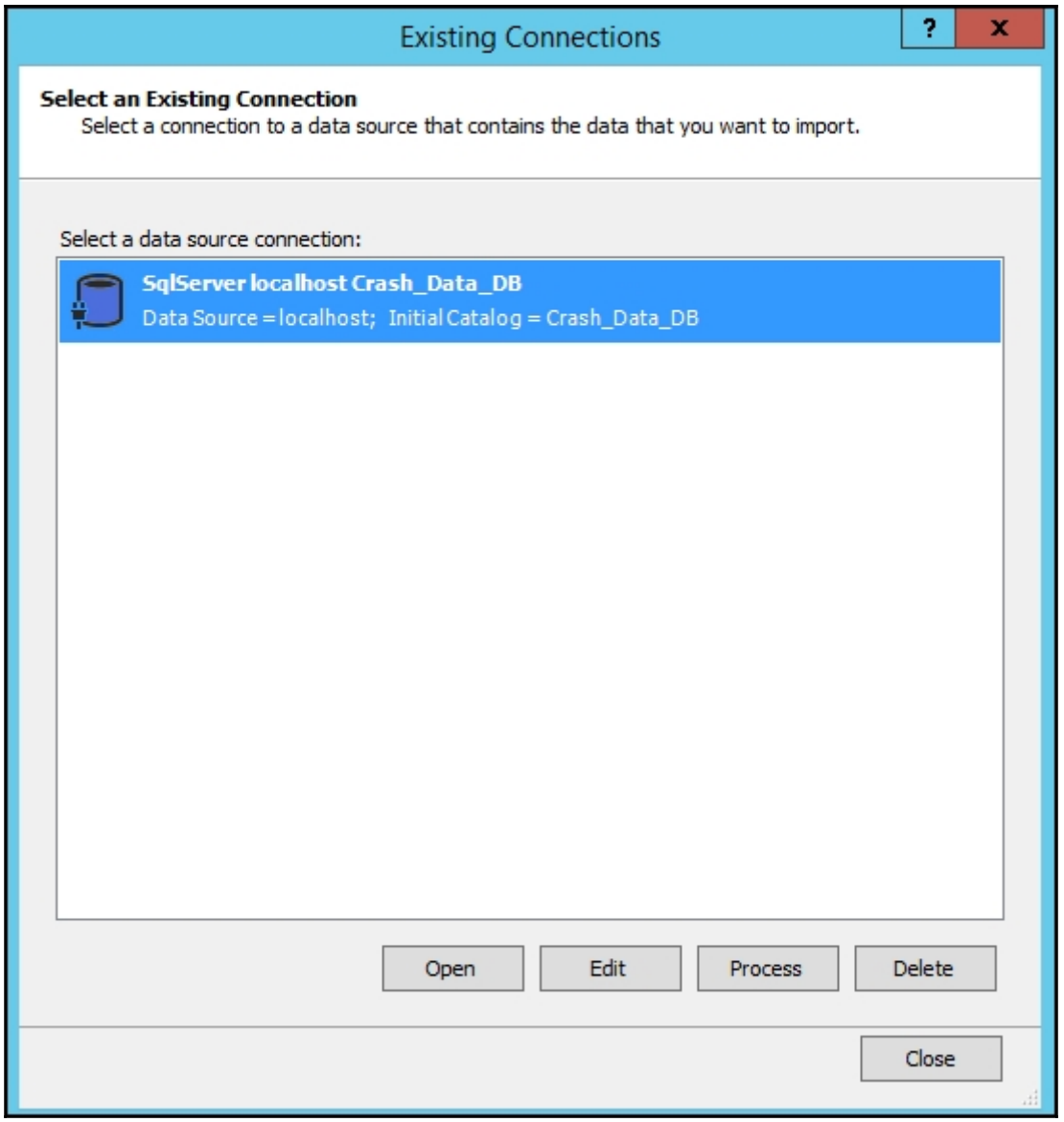
SURFACE_CONDIT...	LIGHT_CONDITION	Count_of_Crashes
Ice	Dark, roadway lighted	4687
Ice	Dark, roadway not lighted	7091
Ice	Dark, unknown lighting	222
Ice	Dawn	1492
Ice	Daylight	21119
Ice	Dusk	937
Ice	Unknown	116
Ice	(null)	24

Dimension	Hierarchy	Operator	Filter Expression
<Select dimension>			

LIGHT_CONDITION	SURFACE_CONDIT...	Count_of_Crashes
Dawn	Ice	1492


Model.bim*
CRASH_DATA_T
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
CRASH_DAY
TIMESTR
DISTRICT
COUNTY_NUMBER
CITYNAME
FRSTHARM
LOCFSTHRM
CRCOMNNR
CSRFCND_T
CSRFCND
SURFACE_CONDITION
LIGHT_T
LIGHT
LIGHT_CONDITION
1
*
*
*
1


Model
Table
Column
Team
Import From Data Source...
Analyze in Excel
Process
Translations
Existing Connections...
Perspectives
Roles...
Model View
Show Hidden
Find Metadata ...
Calculate Now
Calculation Options


Existing Connections
?
X
Select an Existing Connection
Select a connection to a data source that contains the data that you want to import.
Select a data source connection:
SqlServer localhost Crash_Data_DB
Data Source = localhost; Initial Catalog = Crash_Data_DB
Open
Edit
Process
Delete
Close

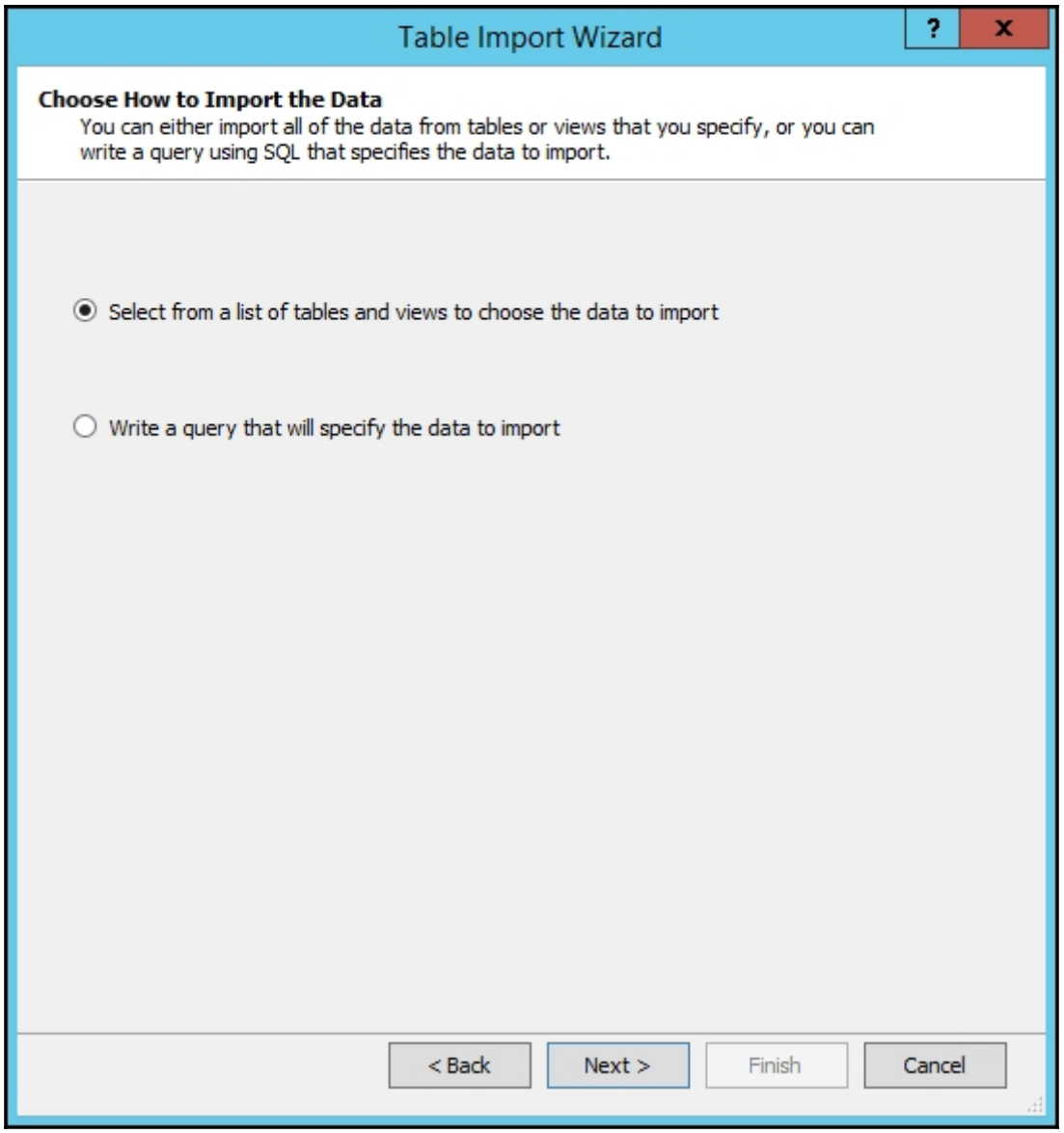


Table Import Wizard
?
X
Choose How to Import the Data
You can either import all of the data from tables or views that you specify, or you can write a query using SQL that specifies the data to import.
Select from a list of tables and views to choose the data to import
Write a query that will specify the data to import
< Back
Next >
Finish
Cancel

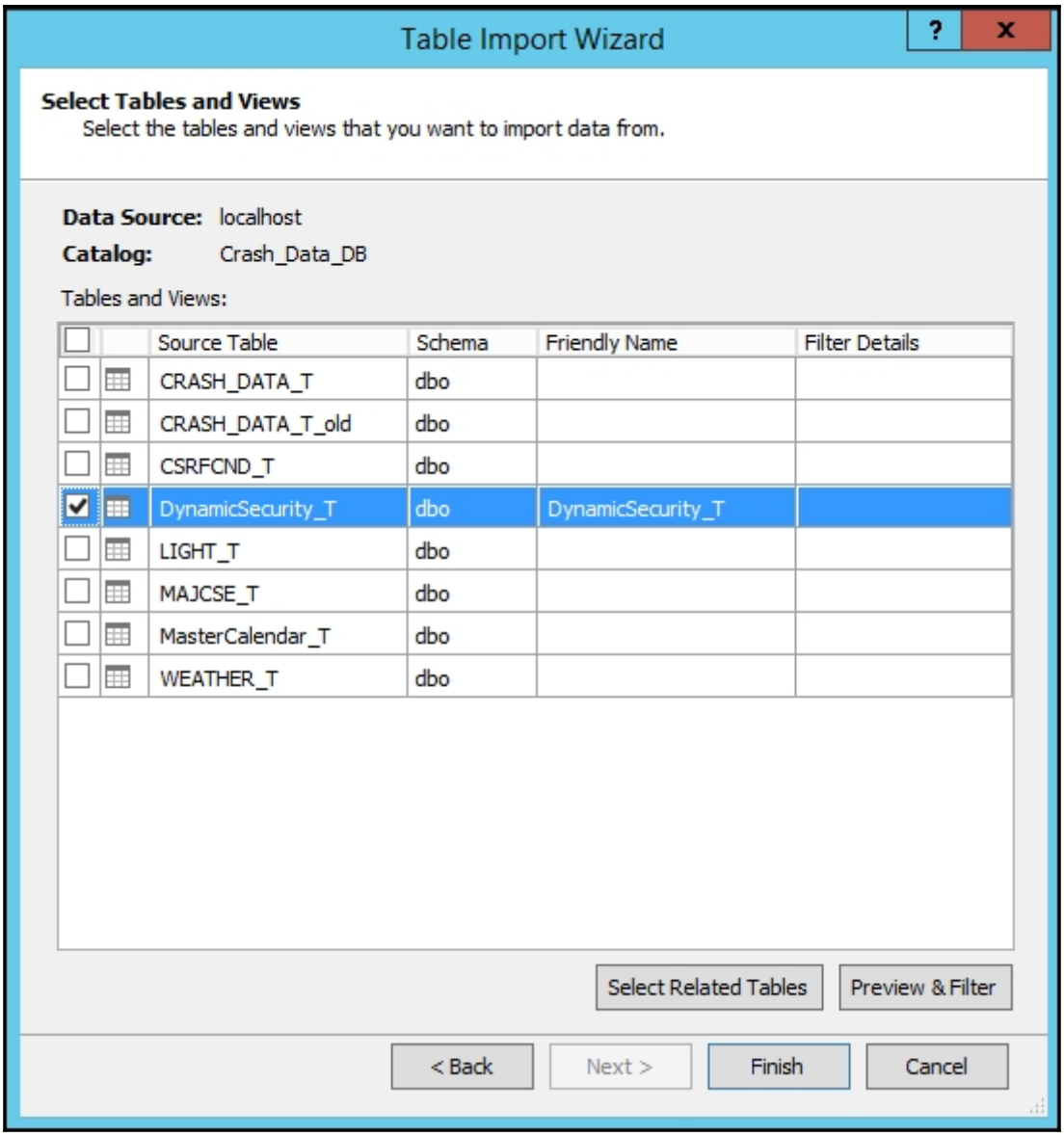
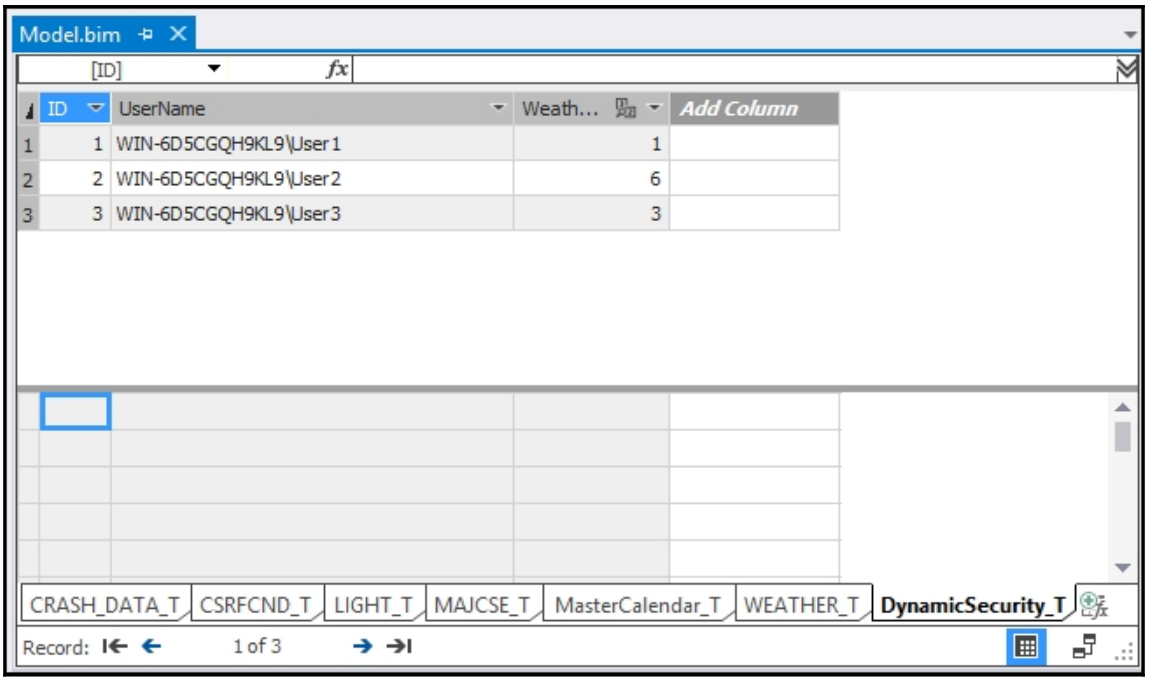
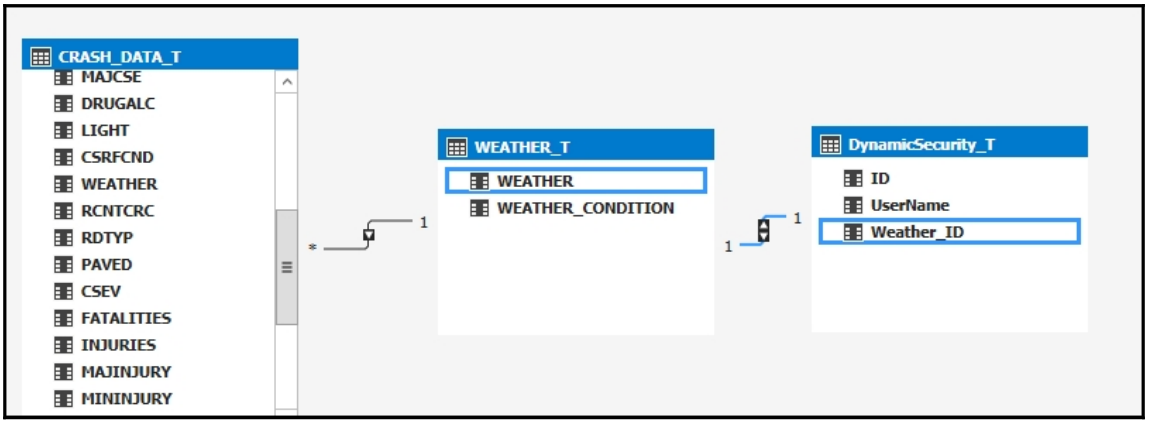
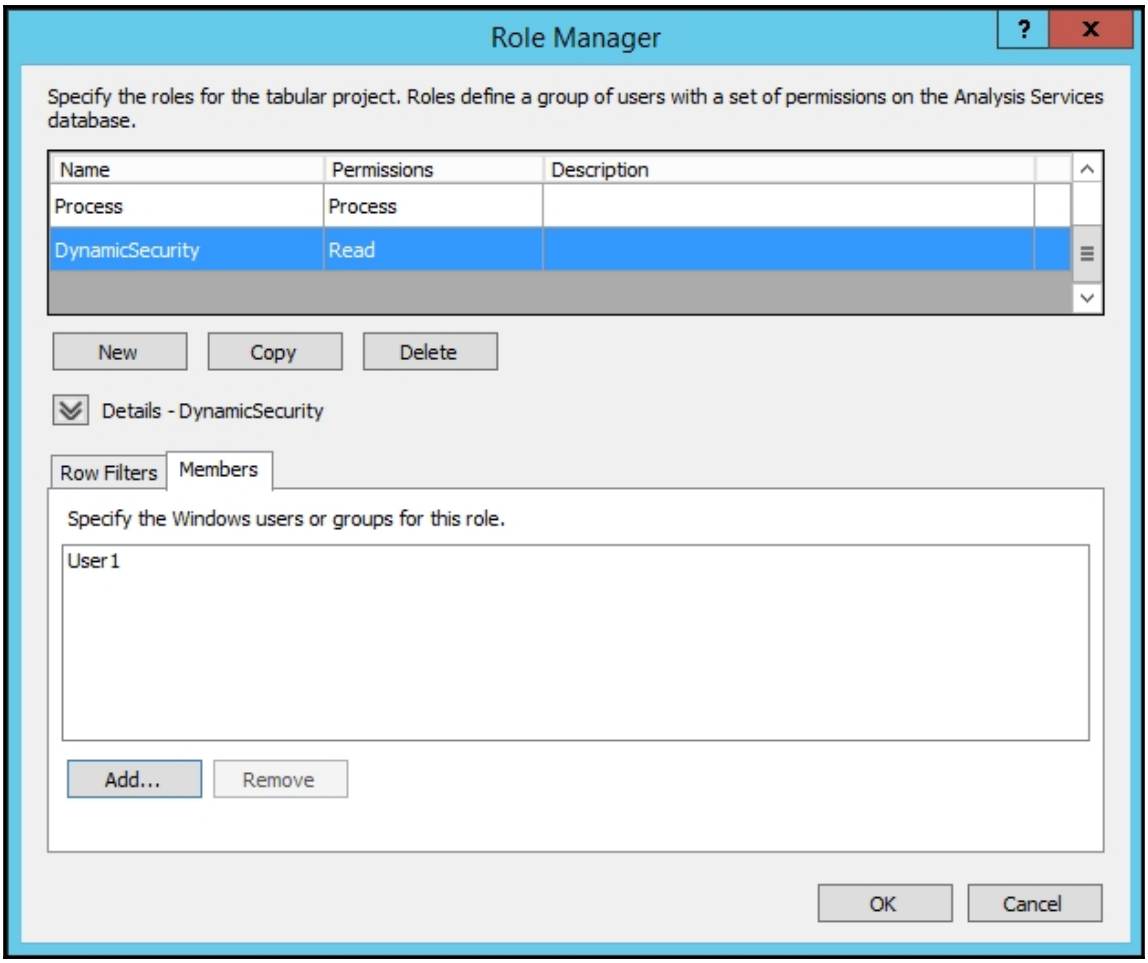
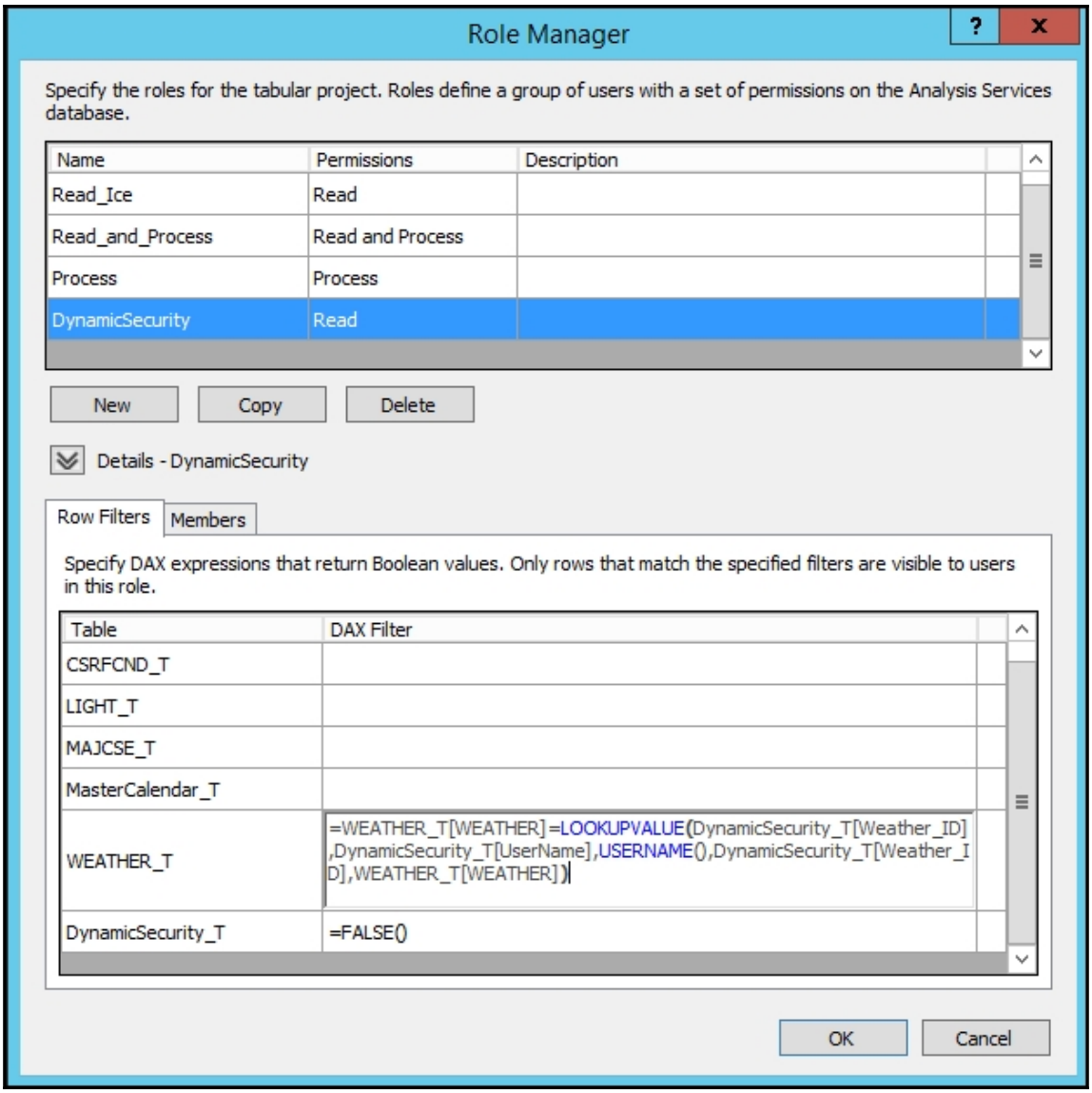


Table Import Wizard
?
X
Select Tables and Views
Select the tables and views that you want to import data from.
Data Source: localhost
Catalog: Crash_Data_DB
Tables and Views:
Source Table
Schema
Friendly Name
Filter Details
CRASH_DATA_T
dbo
CRASH_DATA_T_old
dbo
CSRFCND_T
dbo
DynamicSecurity_T
dbo
DynamicSecurity_T
LIGHT_T
dbo
MAJCSE_T
dbo
MasterCalendar_T
dbo
WEATHER_T
dbo
Select Related Tables
Preview & Filter
< Back
Next >
Finish
Cancel


Model.bim
[ID]
ID
UserName
Weath...
Add Column
1 1 WIN-6D5CGQH9KL9\User1 1
2 2 WIN-6D5CGQH9KL9\User2 6
3 3 WIN-6D5CGQH9KL9\User3 3
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
DynamicSecurity_T
Record: 1 of 3


CRASH_DATA_T
MAJCSE
DRUGALC
LIGHT
CSRFCND
WEATHER
RCNTCRC
RDTYP
PAVED
CSEV
FATALITIES
INJURIES
MAJINJURY
MININJURY
WEATHER_T
WEATHER
WEATHER_CONDITION
DynamicSecurity_T
ID
UserName
Weather_ID
1
*
1
1


Role Manager
Specify the roles for the tabular project. Roles define a group of users with a set of permissions on the Analysis Services database.
Name
Permissions
Description
Process
Process
DynamicSecurity
Read
New
Copy
Delete
Details - DynamicSecurity
Row Filters
Members
Specify the Windows users or groups for this role.
User 1
Add...
Remove
OK
Cancel


Role Manager
Specify the roles for the tabular project. Roles define a group of users with a set of permissions on the Analysis Services database.
Name
Permissions
Description
Read_Ice
Read
Read_and_Process
Read and Process
Process
Process
DynamicSecurity
Read
New
Copy
Delete
Details - DynamicSecurity
Row Filters
Members
Specify DAX expressions that return Boolean values. Only rows that match the specified filters are visible to users in this role.
Table
DAX Filter
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
=WEATHER_T[WEATHER]=LOOKUPVALUE(DynamicSecurity_T[Weather_ID],DynamicSecurity_T[UserName],USERNAME(),DynamicSecurity_T[Weather_ID],WEATHER_T[WEATHER])
DynamicSecurity_T
=FALSE()
OK
Cancel

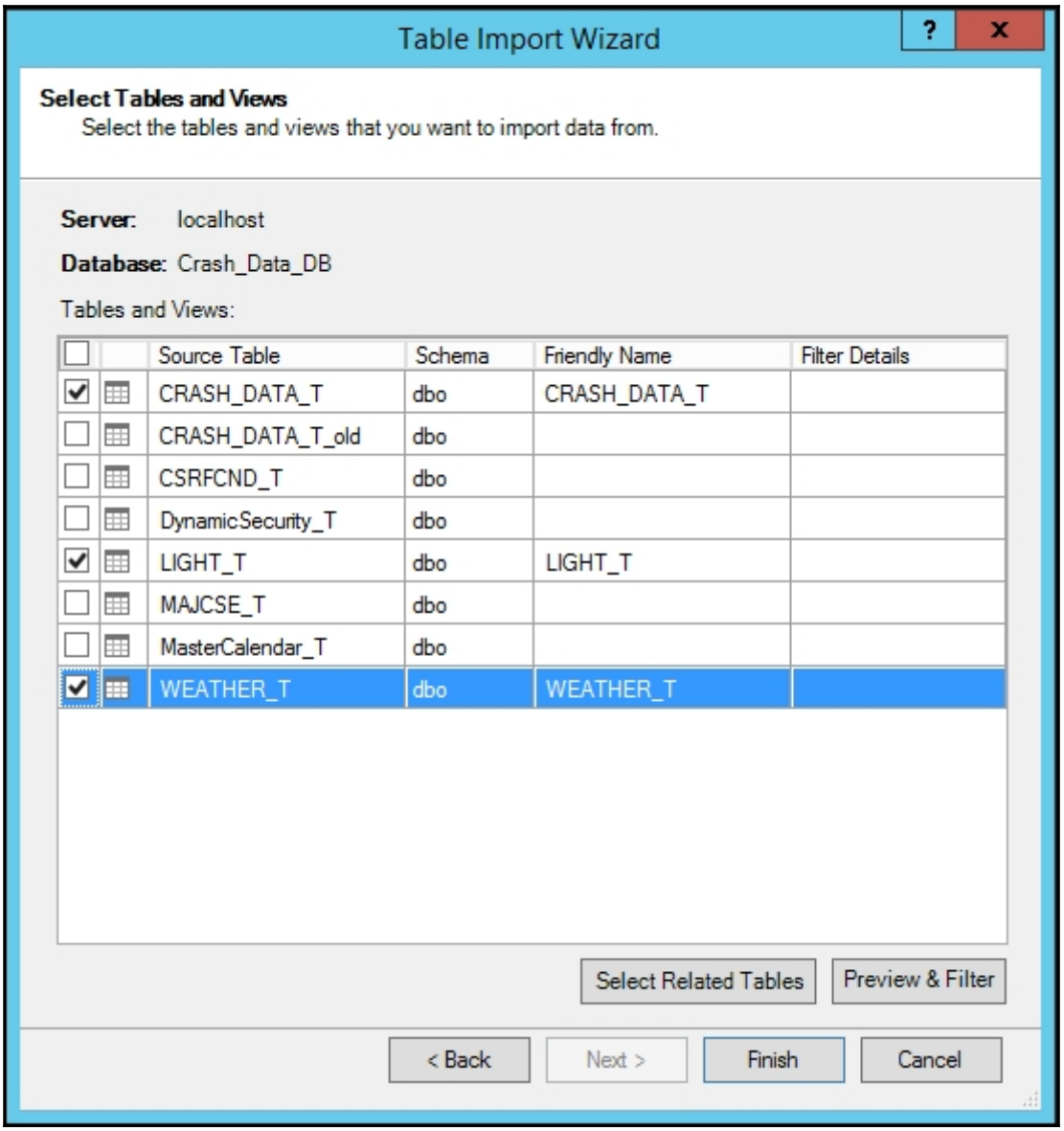


Table Import Wizard
Select Tables and Views
Select the tables and views that you want to import data from.
Server: localhost
Database: Crash_Data_DB
Tables and Views:
Source Table
Schema
Friendly Name
Filter Details
CRASH_DATA_T
dbo
CRASH_DATA_T
CRASH_DATA_T_old
dbo
CSRFCND_T
dbo
DynamicSecurity_T
dbo
LIGHT_T
dbo
LIGHT_T
MAJCSE_T
dbo
MasterCalendar_T
dbo
WEATHER_T
dbo
WEATHER_T
Select Related Tables
Preview & Filter
< Back
Next >
Finish
Cancel

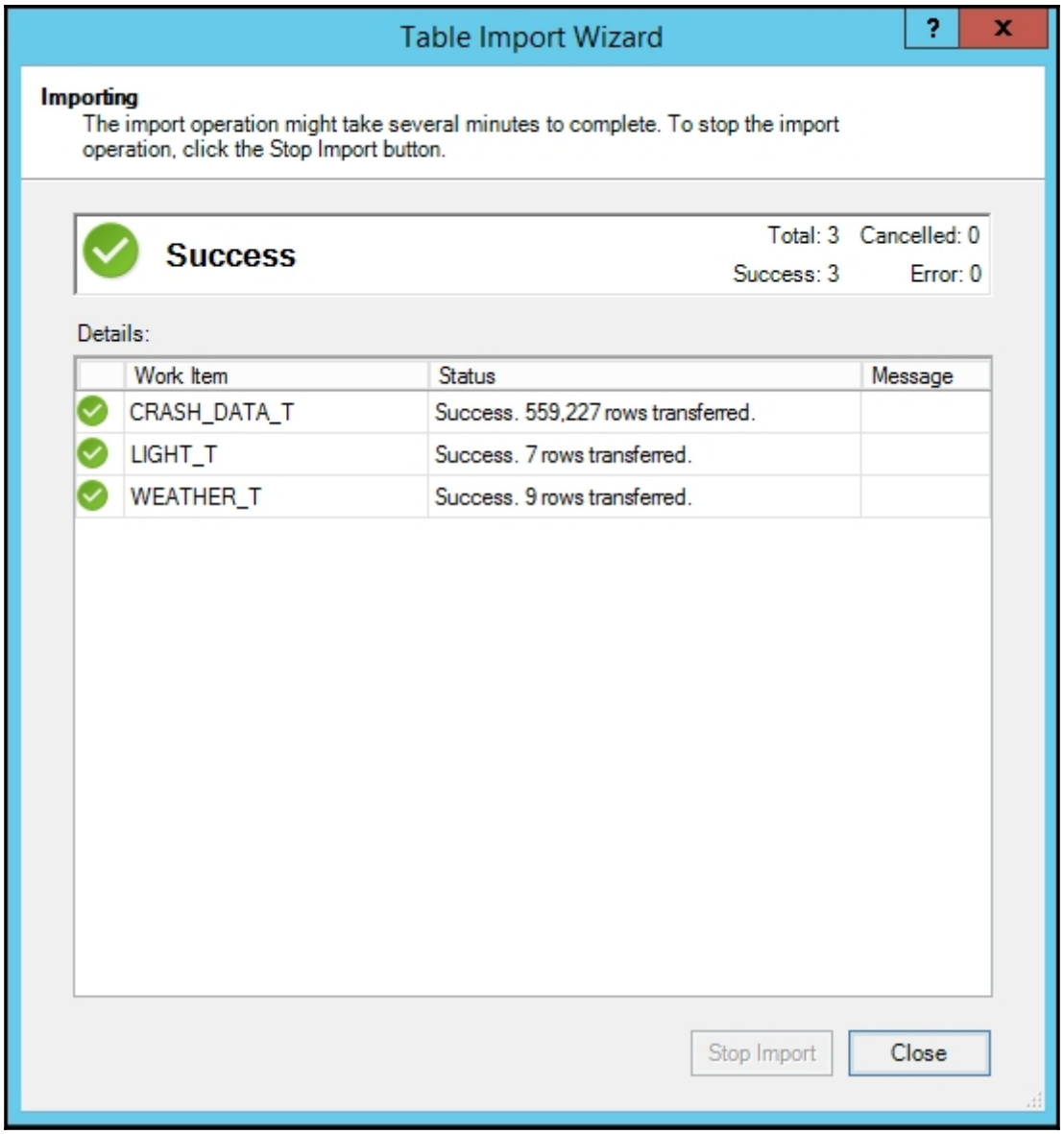
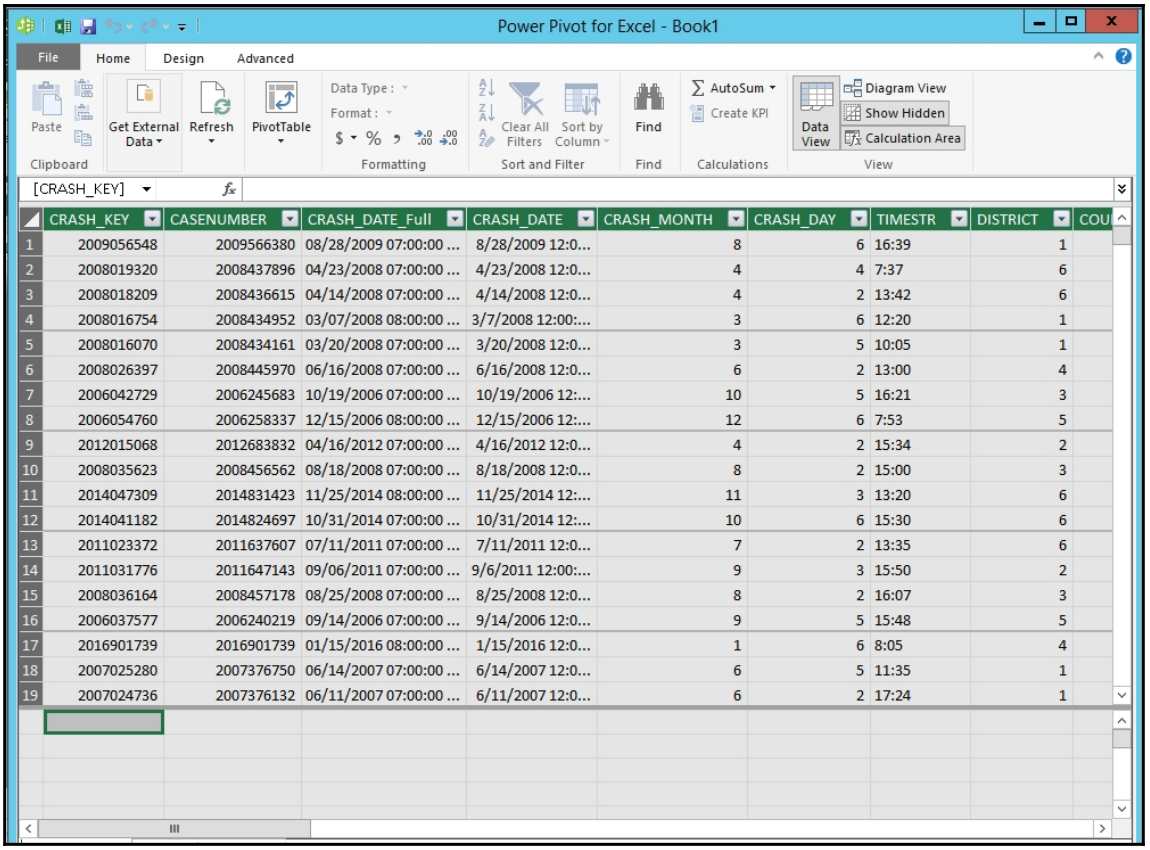
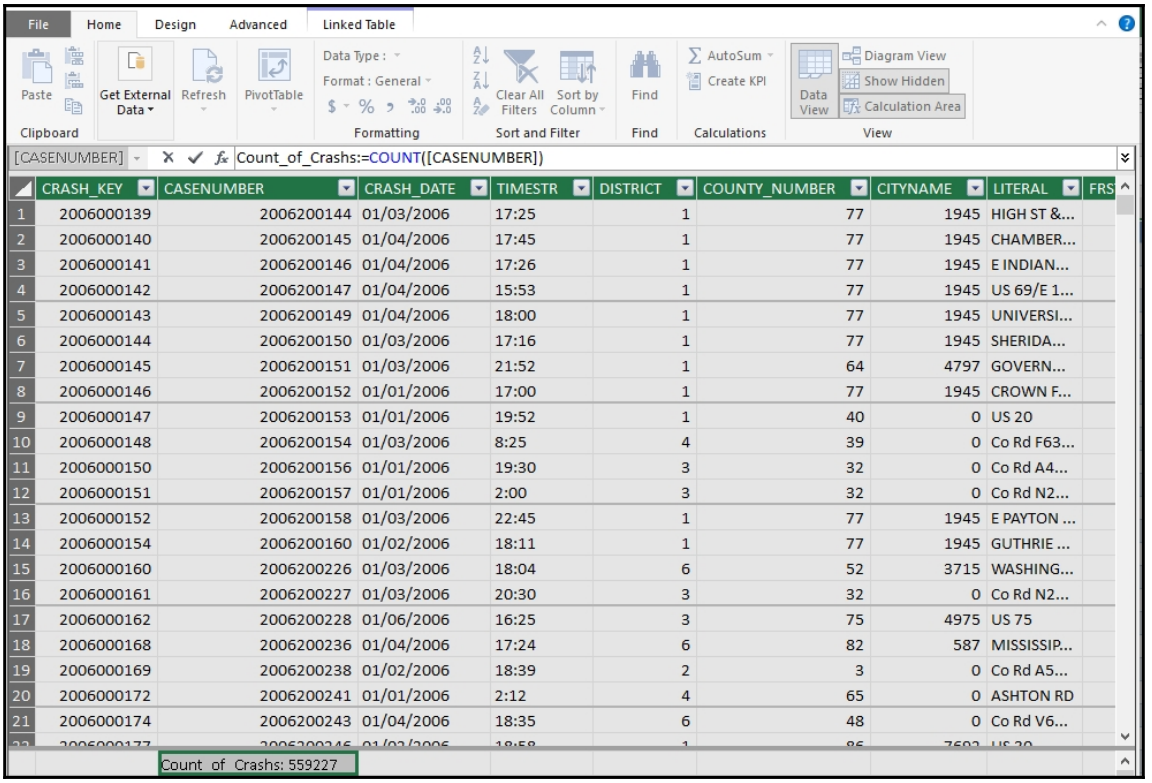
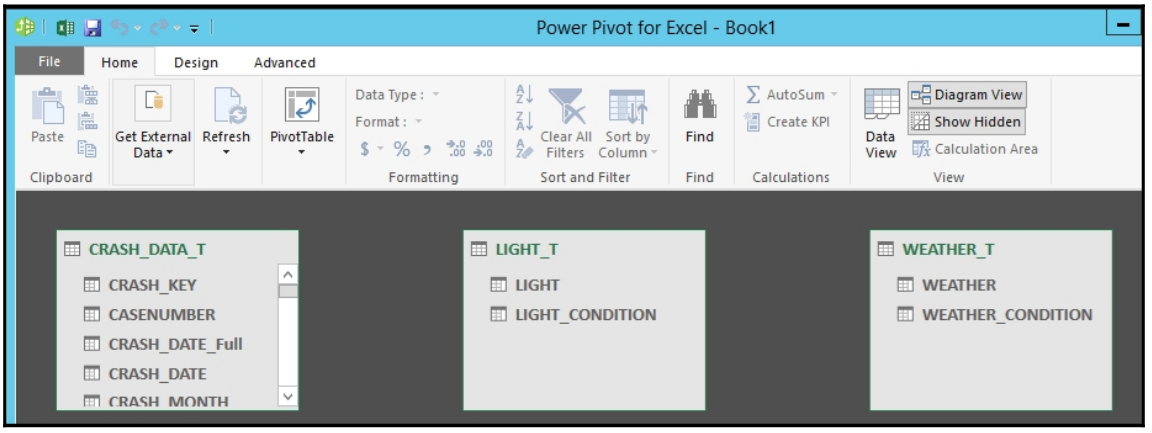


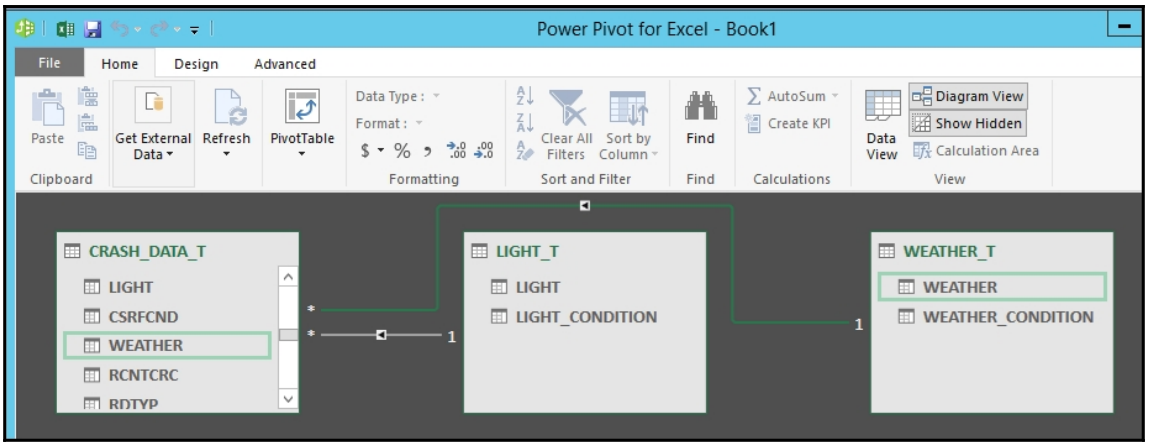
Table Import Wizard
?
x
Importing
The import operation might take several minutes to complete. To stop the import operation, click the Stop Import button.
Success
Total: 3
Cancelled: 0
Success: 3
Error: 0
Details:
Work Item
Status
Message
CRASH_DATA_T
Success. 559,227 rows transferred.
LIGHT_T
Success. 7 rows transferred.
WEATHER_T
Success. 9 rows transferred.
Stop Import
Close

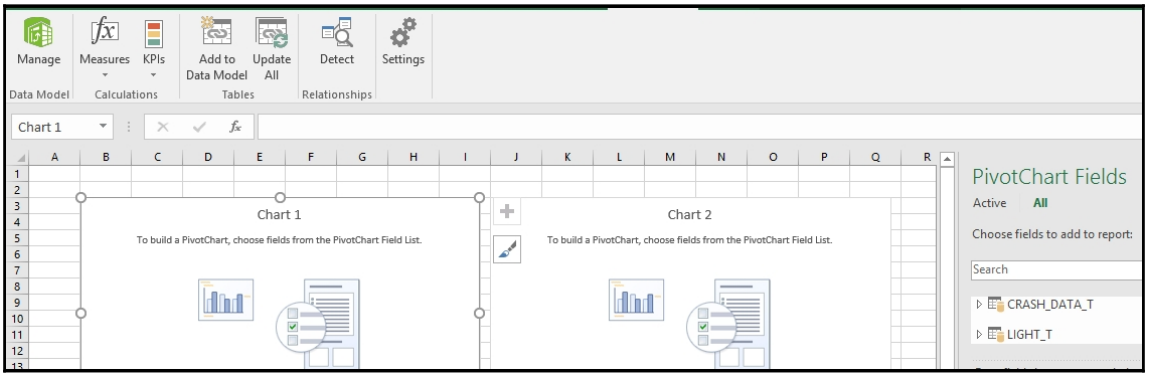


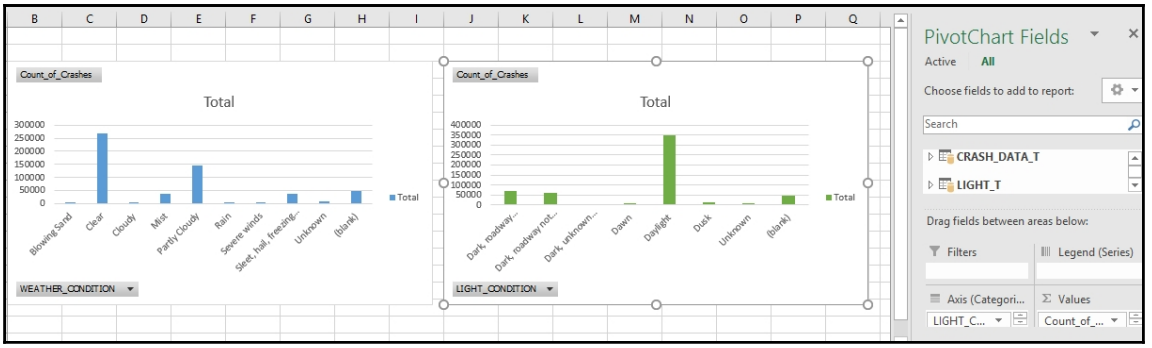
	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONTH	CRASH_DAY	TIMESTR	DISTRICT	COU
1	2009056548	2009566380	08/28/2009 07:00:00 ...	8/28/2009 12:0...	8	6	16:39	1	
2	2008019320	2008437896	04/23/2008 07:00:00 ...	4/23/2008 12:0...	4	4	7:37	6	
3	2008018209	2008436615	04/14/2008 07:00:00 ...	4/14/2008 12:0...	4	2	13:42	6	
4	2008016754	2008434952	03/07/2008 08:00:00 ...	3/7/2008 12:00:...	3	6	12:20	1	
5	2008016070	2008434161	03/20/2008 07:00:00 ...	3/20/2008 12:0...	3	5	10:05	1	
6	2008026397	2008445970	06/16/2008 07:00:00 ...	6/16/2008 12:0...	6	2	13:00	4	
7	2006042729	2006245683	10/19/2006 07:00:00 ...	10/19/2006 12:...	10	5	16:21	3	
8	2006054760	2006258337	12/15/2006 08:00:00 ...	12/15/2006 12:...	12	6	7:53	5	
9	2012015068	2012683832	04/16/2012 07:00:00 ...	4/16/2012 12:0...	4	2	15:34	2	
10	2008035623	2008456562	08/18/2008 07:00:00 ...	8/18/2008 12:0...	8	2	15:00	3	
11	2014047309	2014831423	11/25/2014 08:00:00 ...	11/25/2014 12:...	11	3	13:20	6	
12	2014041182	2014824697	10/31/2014 07:00:00 ...	10/31/2014 12:...	10	6	15:30	6	
13	2011023372	2011637607	07/11/2011 07:00:00 ...	7/11/2011 12:0...	7	2	13:35	6	
14	2011031776	2011647143	09/06/2011 07:00:00 ...	9/6/2011 12:00:...	9	3	15:50	2	
15	2008036164	2008457178	08/25/2008 07:00:00 ...	8/25/2008 12:0...	8	2	16:07	3	
16	2006037577	2006240219	09/14/2006 07:00:00 ...	9/14/2006 12:0...	9	5	15:48	5	
17	2016901739	2016901739	01/15/2016 08:00:00 ...	1/15/2016 12:0...	1	6	8:05	4	
18	2007025280	2007376750	06/14/2007 07:00:00 ...	6/14/2007 12:0...	6	5	11:35	1	
19	2007024736	2007376132	06/11/2007 07:00:00 ...	6/11/2007 12:0...	6	2	17:24	1	


File
Home
Design
Advanced
Linked Table
Paste
Get External Data
Refresh
PivotTable
Data Type : General
Format : General
Clear All Filters
Sort by Column
Find
AutoSum
Create KPI
Data View
Diagram View
Show Hidden
Calculation Area
Clipboard
Formatting
Sort and Filter
Find
Calculations
View
[CASENUMBER]
Count_of_Crashs:=COUNT([CASENUMBER])
CRASH_KEY
CASENUMBER
CRASH_DATE
TIMESTR
DISTRICT
COUNTY_NUMBER
CITYNAME
LITERAL
FRS
1 2006000139 2006200144 01/03/2006 17:25 1 77 1945 HIGH ST &...
2 2006000140 2006200145 01/04/2006 17:45 1 77 1945 CHAMBER...
3 2006000141 2006200146 01/04/2006 17:26 1 77 1945 E INDIAN...
4 2006000142 2006200147 01/04/2006 15:53 1 77 1945 US 69/E 1...
5 2006000143 2006200149 01/04/2006 18:00 1 77 1945 UNIVERSI...
6 2006000144 2006200150 01/03/2006 17:16 1 77 1945 SHERIDA...
7 2006000145 2006200151 01/03/2006 21:52 1 64 4797 GOVERN...
8 2006000146 2006200152 01/01/2006 17:00 1 77 1945 CROWN F...
9 2006000147 2006200153 01/01/2006 19:52 1 40 0 US 20
10 2006000148 2006200154 01/03/2006 8:25 4 39 0 Co Rd F63...
11 2006000150 2006200156 01/01/2006 19:30 3 32 0 Co Rd A4...
12 2006000151 2006200157 01/01/2006 2:00 3 32 0 Co Rd N2...
13 2006000152 2006200158 01/03/2006 22:45 1 77 1945 E PAYTON ...
14 2006000154 2006200160 01/02/2006 18:11 1 77 1945 GUTHRIE ...
15 2006000160 2006200226 01/03/2006 18:04 6 52 3715 WASHING...
16 2006000161 2006200227 01/03/2006 20:30 3 32 0 Co Rd N2...
17 2006000162 2006200228 01/06/2006 16:25 3 75 4975 US 75
18 2006000168 2006200236 01/04/2006 17:24 6 82 587 MISSISSIP...
19 2006000169 2006200238 01/02/2006 18:39 2 3 0 Co Rd A5...
20 2006000172 2006200241 01/01/2006 2:12 4 65 0 ASHTON RD
21 2006000174 2006200243 01/04/2006 18:35 6 48 0 Co Rd V6...
Count of Crashs: 559227


Power Pivot for Excel - Book1
File
Home
Design
Advanced
Paste
Get External Data
Refresh
PivotTable
Data Type :
Format :
Clear All Filters
Sort by Column
Find
AutoSum
Create KPI
Data View
Diagram View
Show Hidden
Calculation Area
Clipboard
Formatting
Sort and Filter
Find
Calculations
View
CRASH_DATA_T
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
LIGHT_T
LIGHT
LIGHT_CONDITION
WEATHER_T
WEATHER
WEATHER_CONDITION


Power Pivot for Excel - Book1
File
Home
Design
Advanced
Paste
Get External Data
Refresh
PivotTable
Data Type :
Format :
Clear All Filters
Sort by Column
Find
AutoSum
Create KPI
Data View
Diagram View
Show Hidden
Calculation Area
Clipboard
Formatting
Sort and Filter
Find
Calculations
View
CRASH_DATA_T
LIGHT
CSRFCND
WEATHER
RCNTCRC
RDTYP
LIGHT_T
LIGHT
LIGHT_CONDITION
WEATHER_T
WEATHER
WEATHER_CONDITION
1
1


Manage
Measures
KPIs
Add to Data Model
Update All
Detect
Settings
Data Model
Calculations
Tables
Relationships
Chart 1
Chart 1
To build a PivotChart, choose fields from the PivotChart Field List.
Chart 2
To build a PivotChart, choose fields from the PivotChart Field List.
PivotChart Fields
Active
All
Choose fields to add to report:
Search
CRASH_DATA_T
LIGHT_T


Count_of_Crashes
Total
300000
250000
200000
150000
100000
50000
0
Blowing Sand
Clear
Cloudy
Mist
Partly Cloudy
Rain
Severe winds
Sleet, hail, freezing...
Unknown
(blank)
Total
WEATHER_CONDITION
Count_of_Crashes
Total
400000
350000
300000
250000
200000
150000
100000
50000
0
Dark, roadway...
Dark, roadway not...
Dark, unknown...
Dawn
Daylight
Dusk
Unknown
(blank)
Total
LIGHT_CONDITION
PivotChart Fields
Active
All
Choose fields to add to report:
Search
CRASH_DATA_T
LIGHT_T
Drag fields between areas below:
Filters
Legend (Series)
Axis (Categori...
Values
LIGHT_C...
Count_of_...

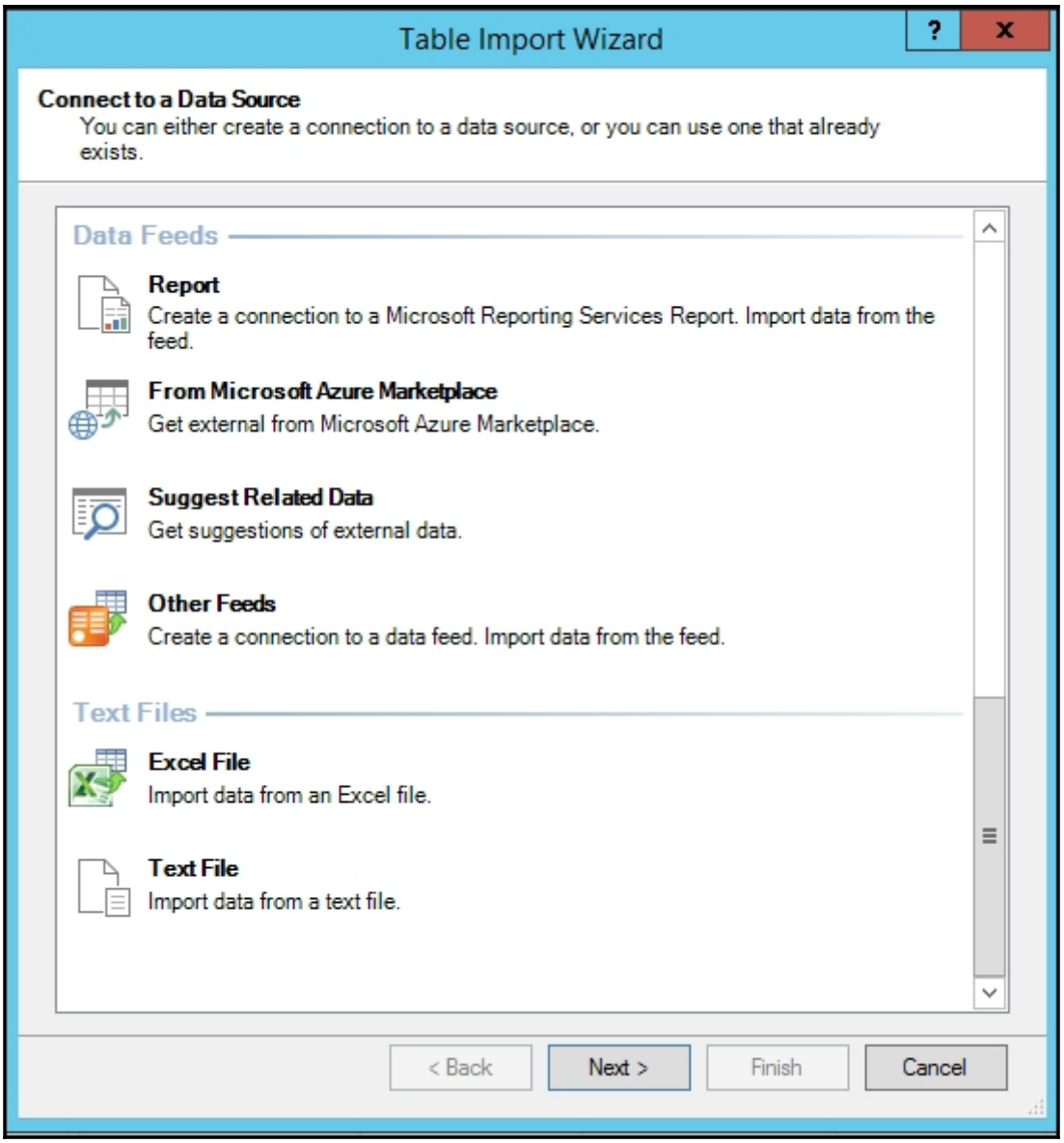
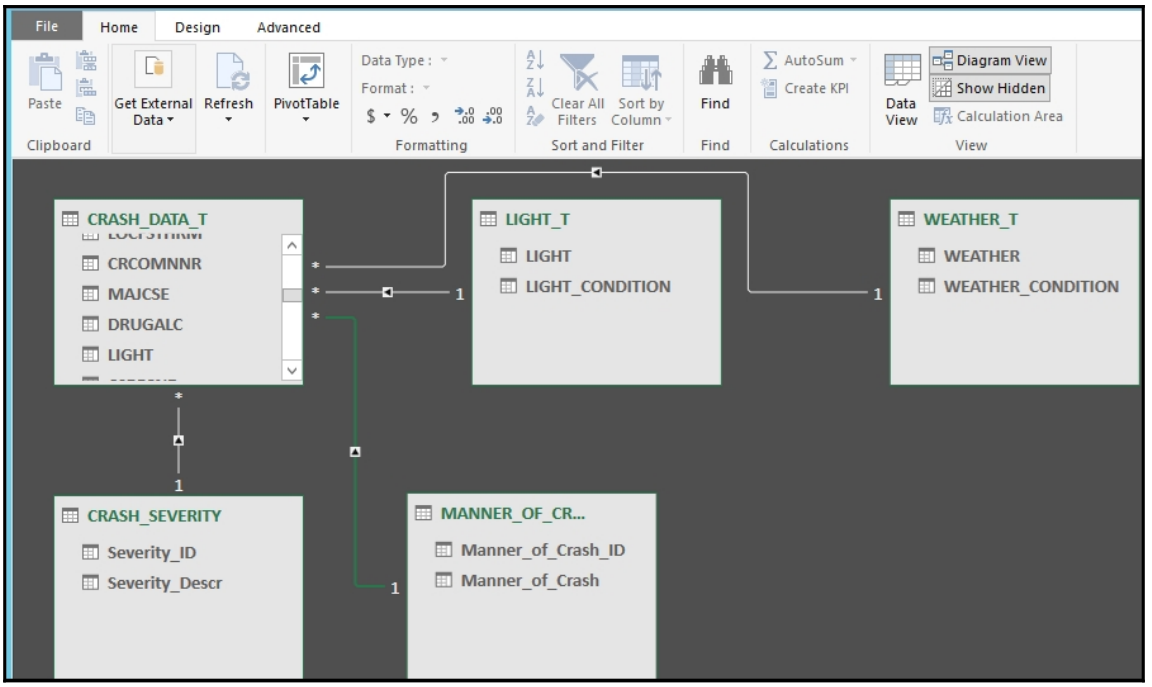
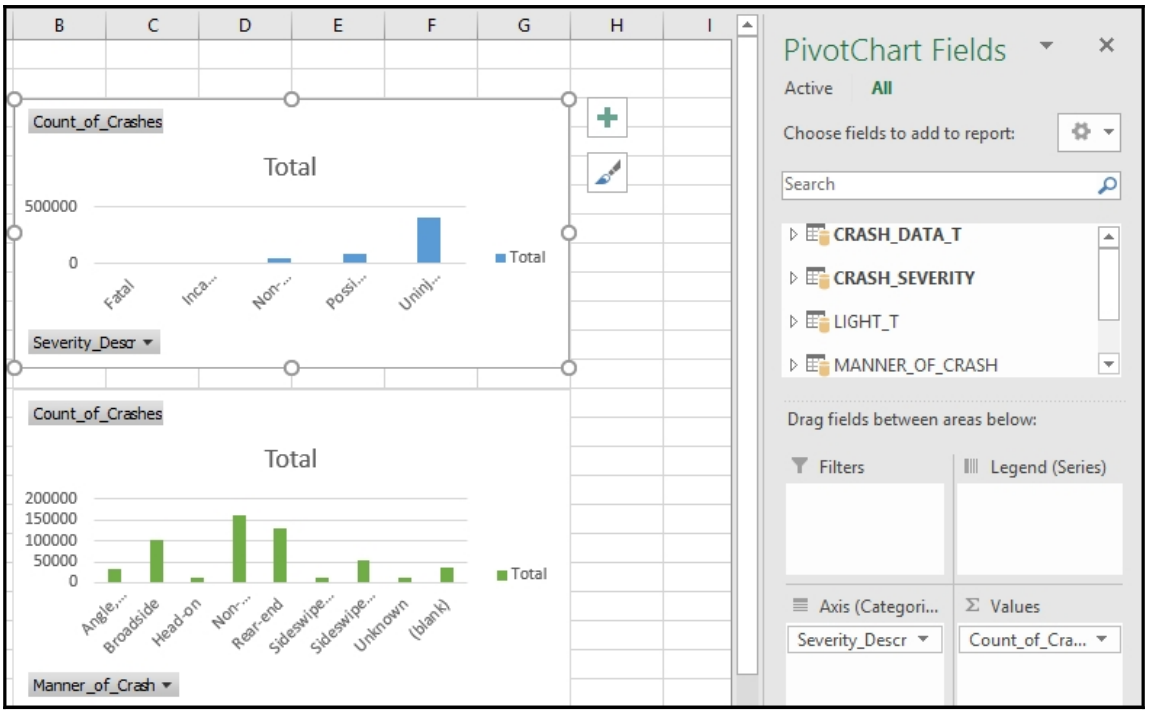
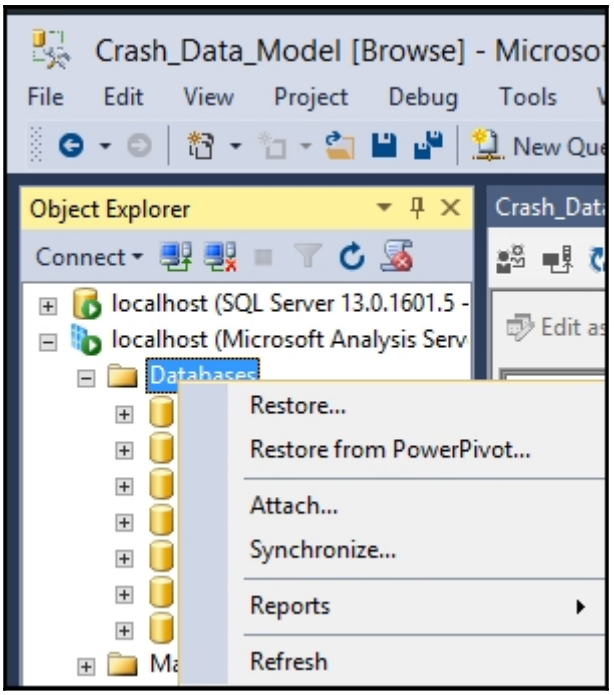
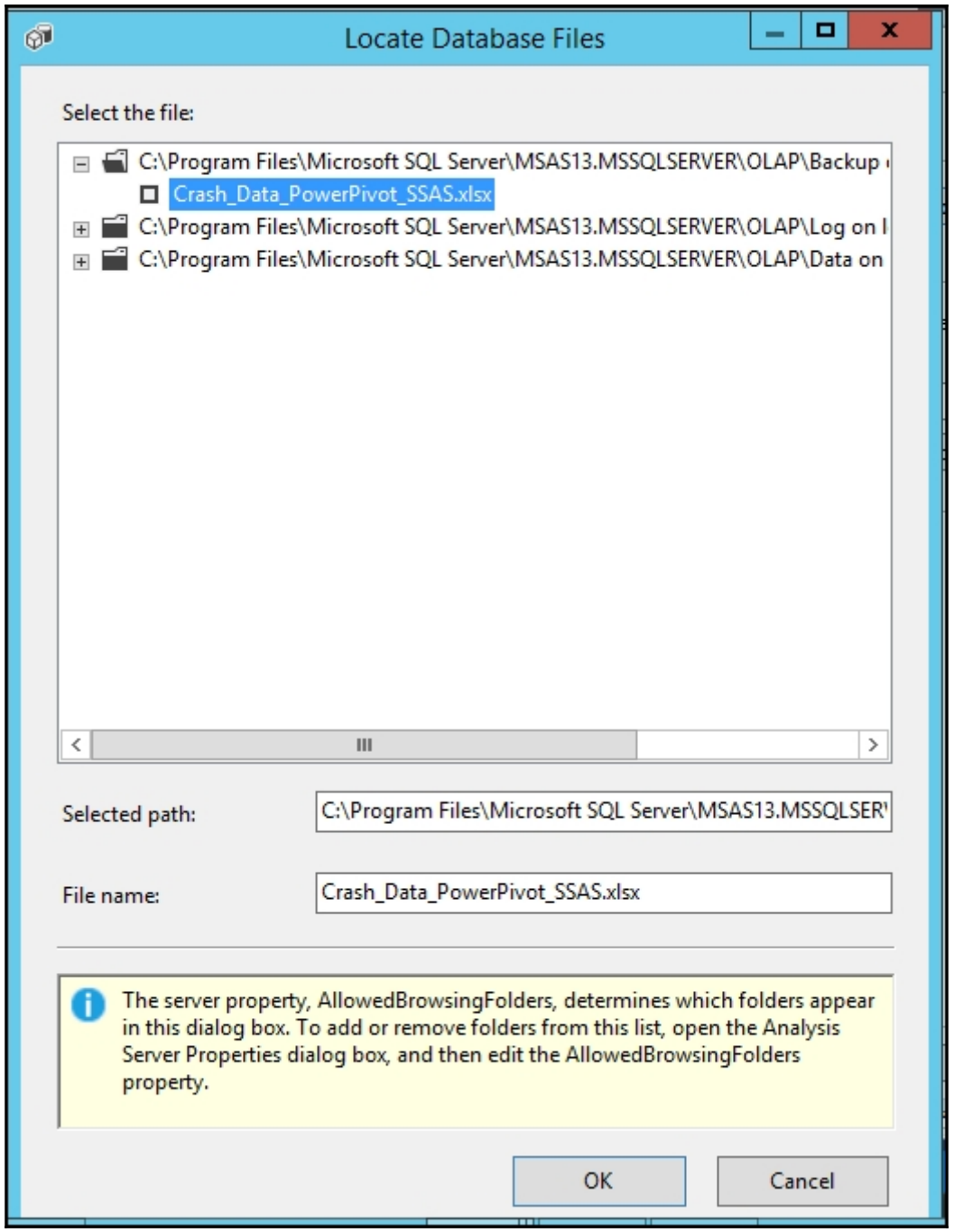


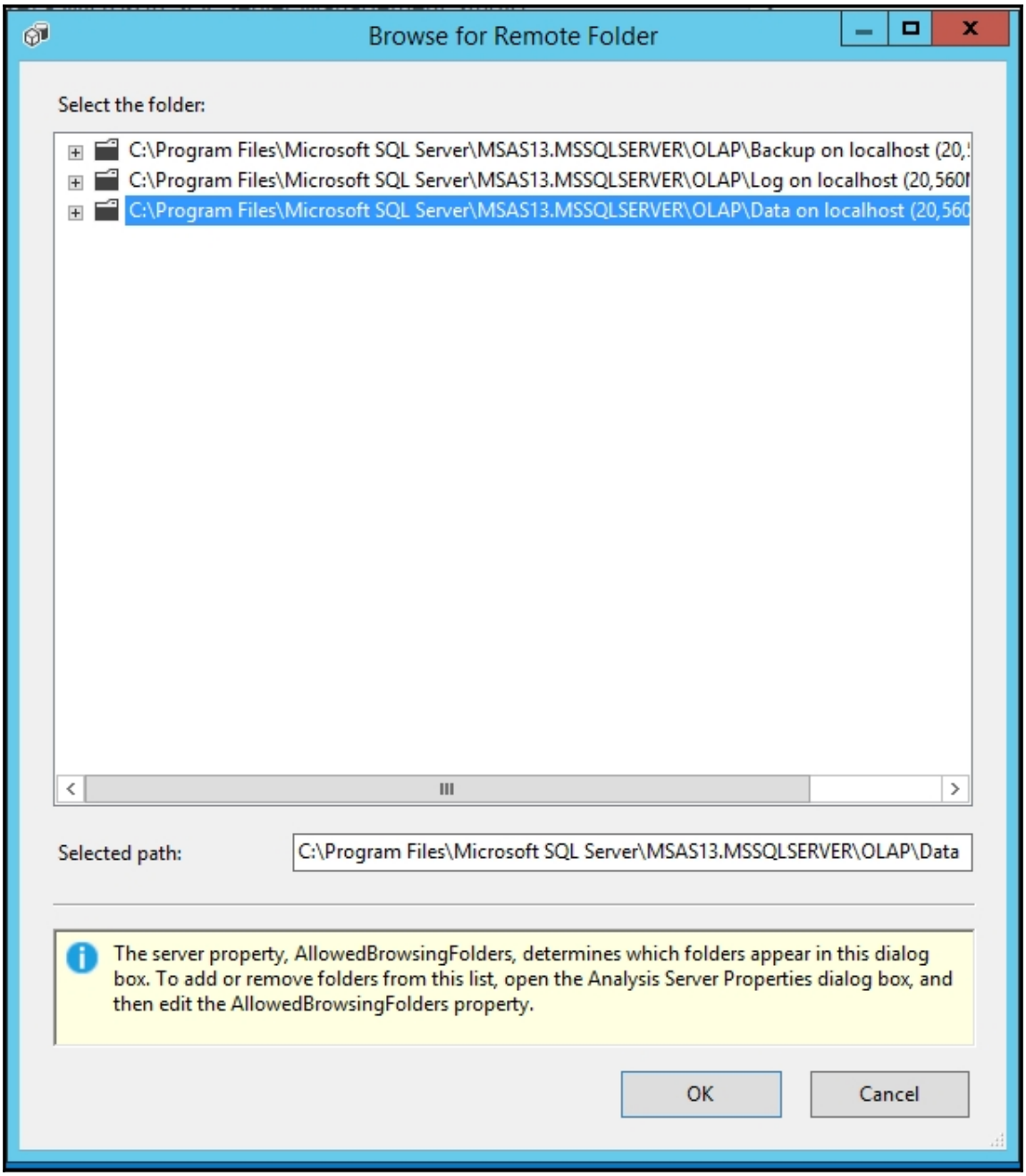
Table Import Wizard
?
X
Connect to a Data Source
You can either create a connection to a data source, or you can use one that already exists.
Data Feeds
Report
Create a connection to a Microsoft Reporting Services Report. Import data from the feed.
From Microsoft Azure Marketplace
Get external from Microsoft Azure Marketplace.
Suggest Related Data
Get suggestions of external data.
Other Feeds
Create a connection to a data feed. Import data from the feed.
Text Files
Excel File
Import data from an Excel file.
Text File
Import data from a text file.
< Back
Next >
Finish
Cancel

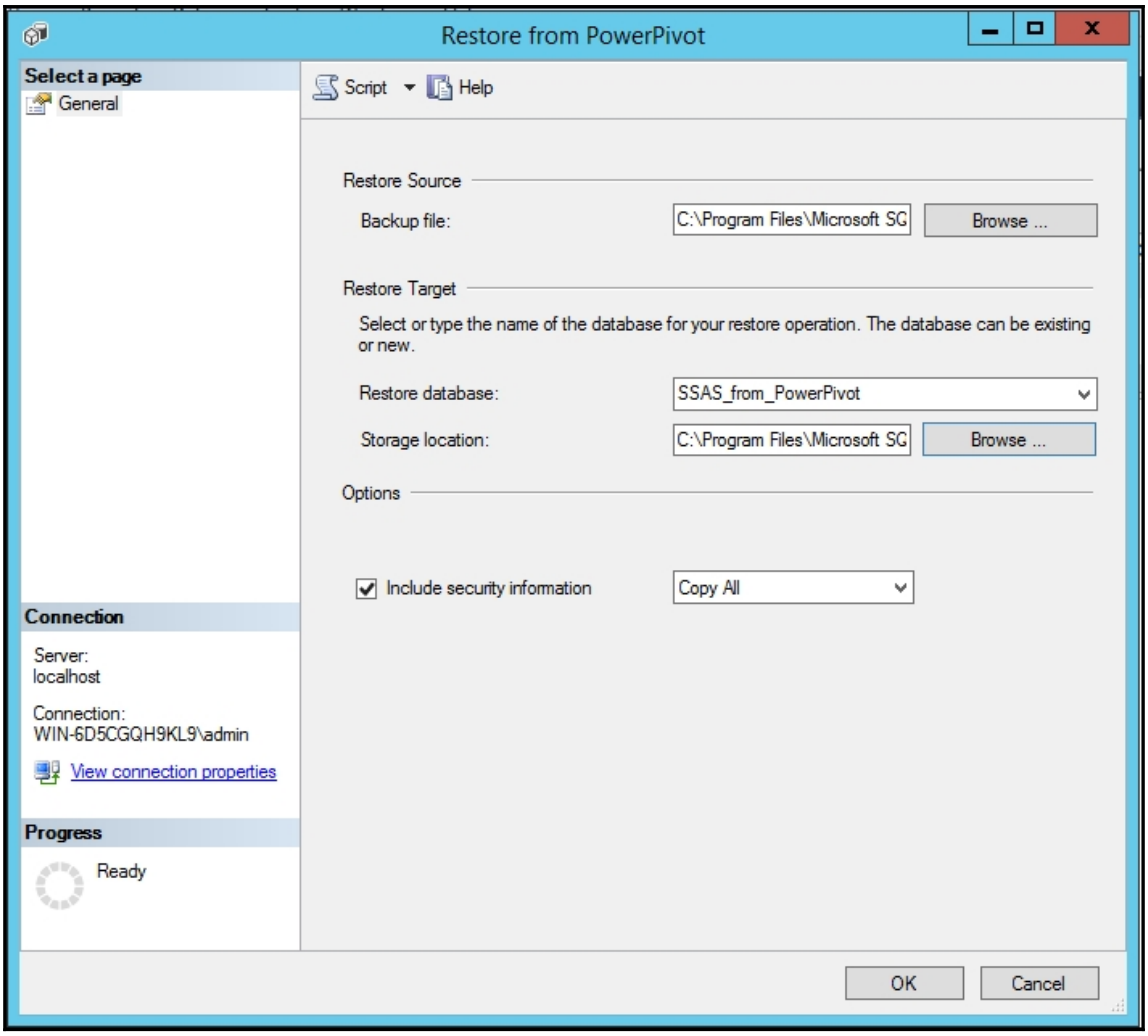

File
Home
Design
Advanced
Paste
Get External Data
Refresh
PivotTable
Clipboard
Data Type :
Format :
Formatting
Clear All Filters
Sort by Column
Sort and Filter
Find
AutoSum
Create KPI
Calculations
Data View
Diagram View
Show Hidden
Calculation Area
View
CRASH_DATA_T
CRCOMNNR
MAJCSE
DRUGALC
LIGHT
LIGHT_T
LIGHT
LIGHT_CONDITION
WEATHER_T
WEATHER
WEATHER_CONDITION
CRASH_SEVERITY
Severity_ID
Severity_Descr
MANNER_OF_CR...
Manner_of_Crash_ID
Manner_of_Crash
*
1

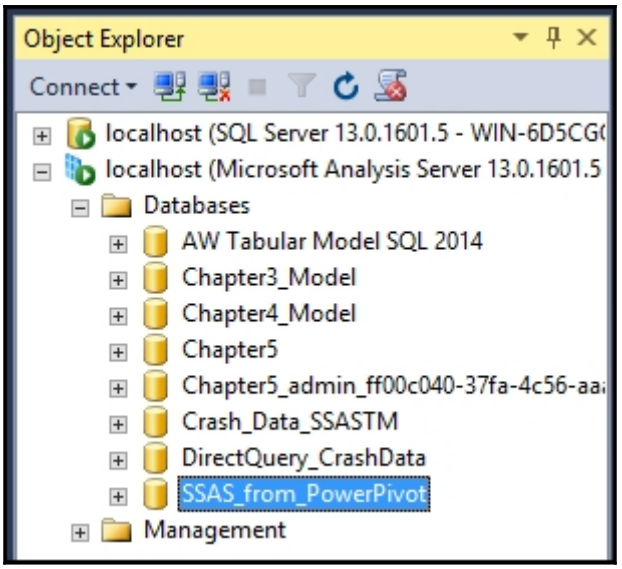

B
C
D
E
F
G
H
I
Count_of_Crashes
Total
500000
0
Fatal
Inca...
Non-...
Possi...
Uninj...
Total
Severity_Descr
Count_of_Crashes
Total
200000
150000
100000
50000
0
Angle,...
Broadside
Head-on
Non-...
Rear-end
Sideswipe...
Sideswipe...
Unknown
(blank)
Total
Manner_of_Crash
PivotChart Fields
Active
All
Choose fields to add to report:
Search
CRASH_DATA_T
CRASH_SEVERITY
LIGHT_T
MANNER_OF_CRASH
Drag fields between areas below:
Filters
Legend (Series)
Axis (Categori...
Values
Severity_Descr
Count_of_Cra...

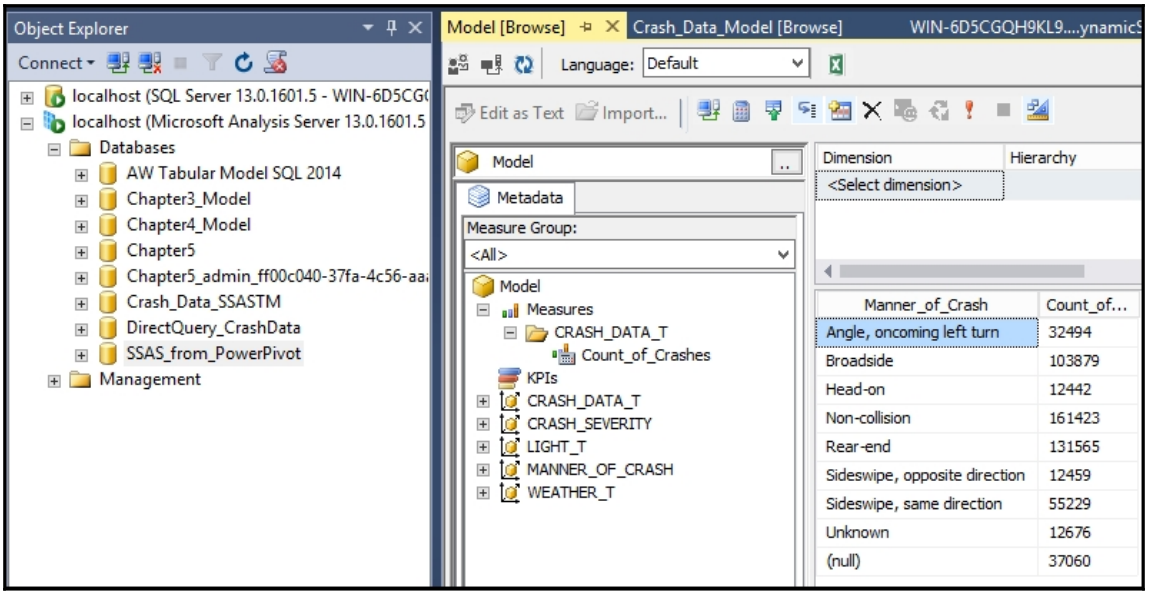

Crash_Data_Model [Browse] - Microsof
File
Edit
View
Project
Debug
Tools
New Que
Object Explorer
Connect
localhost (SQL Server 13.0.1601.5 -
localhost (Microsoft Analysis Serv
Databases
Restore...
Restore from PowerPivot...
Attach...
Synchronize...
Reports
Refresh

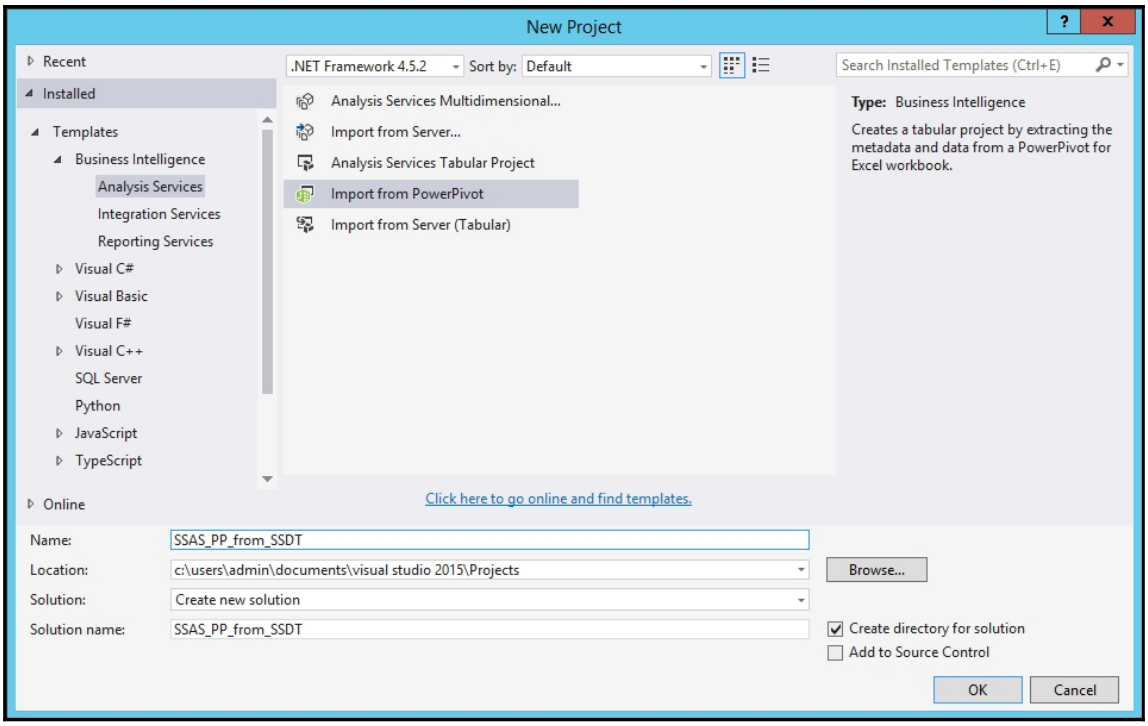

Locate Database Files
Select the file:
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Backup
Crash_Data_PowerPivot_SSAS.xlsx
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Log on
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Data on
Selected path:
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSER
File name:
Crash_Data_PowerPivot_SSAS.xlsx
The server property, AllowedBrowsingFolders, determines which folders appear in this dialog box. To add or remove folders from this list, open the Analysis Server Properties dialog box, and then edit the AllowedBrowsingFolders property.
OK
Cancel

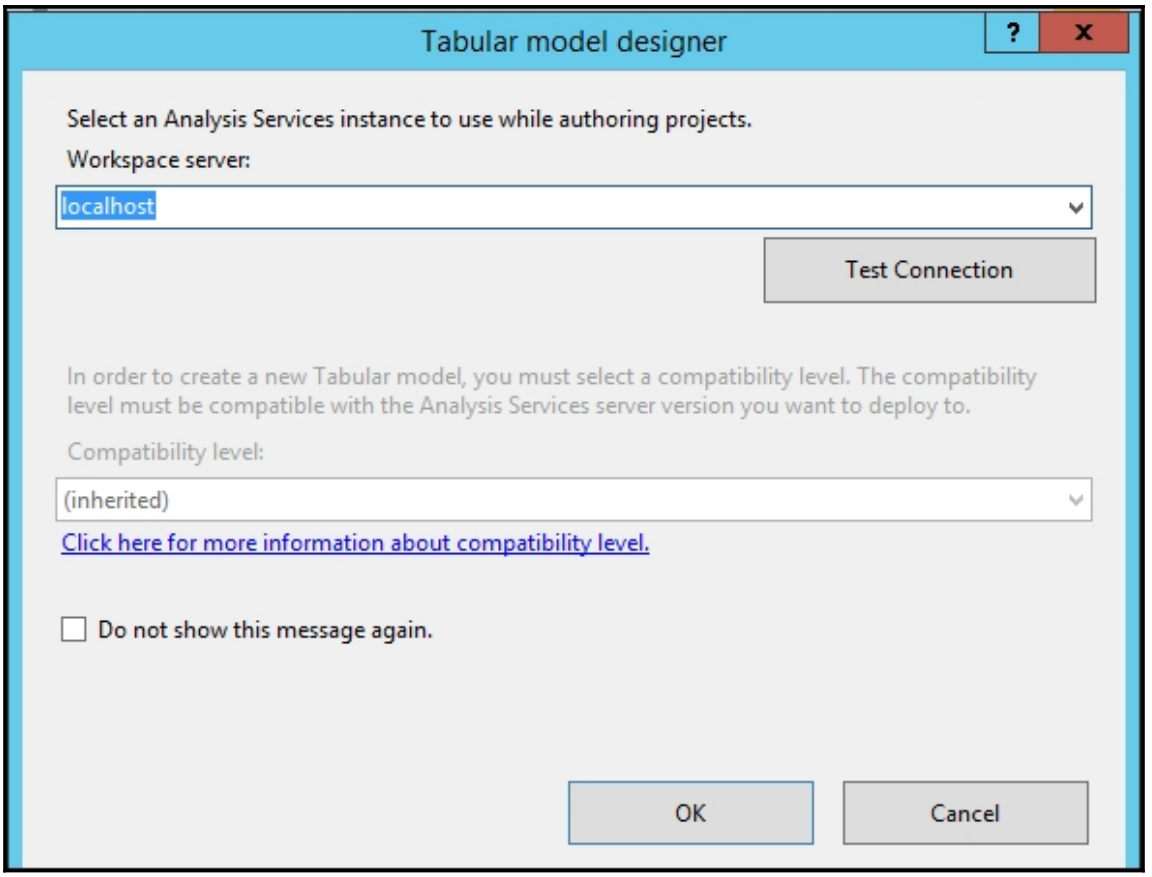

Browse for Remote Folder
Select the folder:
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Backup on localhost (20,
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Log on localhost (20,560
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Data on localhost (20,560
Selected path:
C:\Program Files\Microsoft SQL Server\MSAS13.MSSQLSERVER\OLAP\Data
The server property, AllowedBrowsingFolders, determines which folders appear in this dialog box. To add or remove folders from this list, open the Analysis Server Properties dialog box, and then edit the AllowedBrowsingFolders property.
OK
Cancel

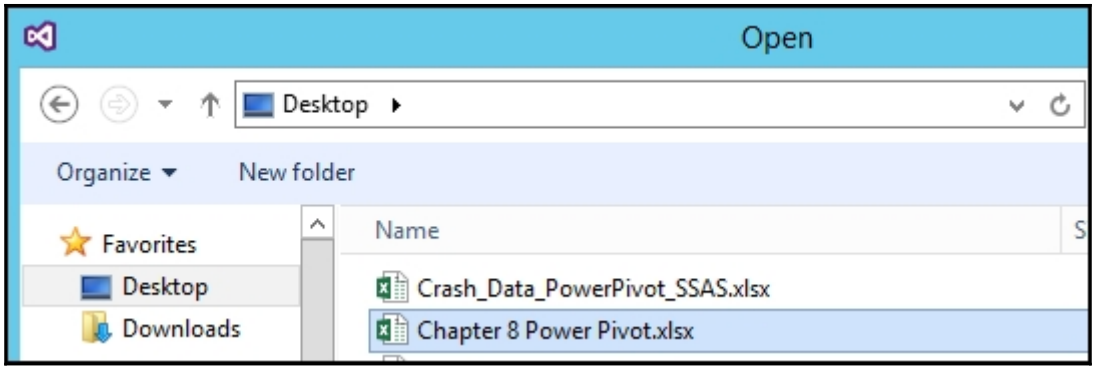

Restore from PowerPivot
Select a page
General
Script
Help
Restore Source
Backup file:
C:\Program Files\Microsoft SG
Browse ...
Restore Target
Select or type the name of the database for your restore operation. The database can be existing or new.
Restore database:
SSAS_from_PowerPivot
Storage location:
C:\Program Files\Microsoft SG
Browse ...
Options
Include security information
Copy All
Connection
Server:
localhost
Connection:
WIN-6D5CGQH9KL9\admin
View connection properties
Progress
Ready
OK
Cancel

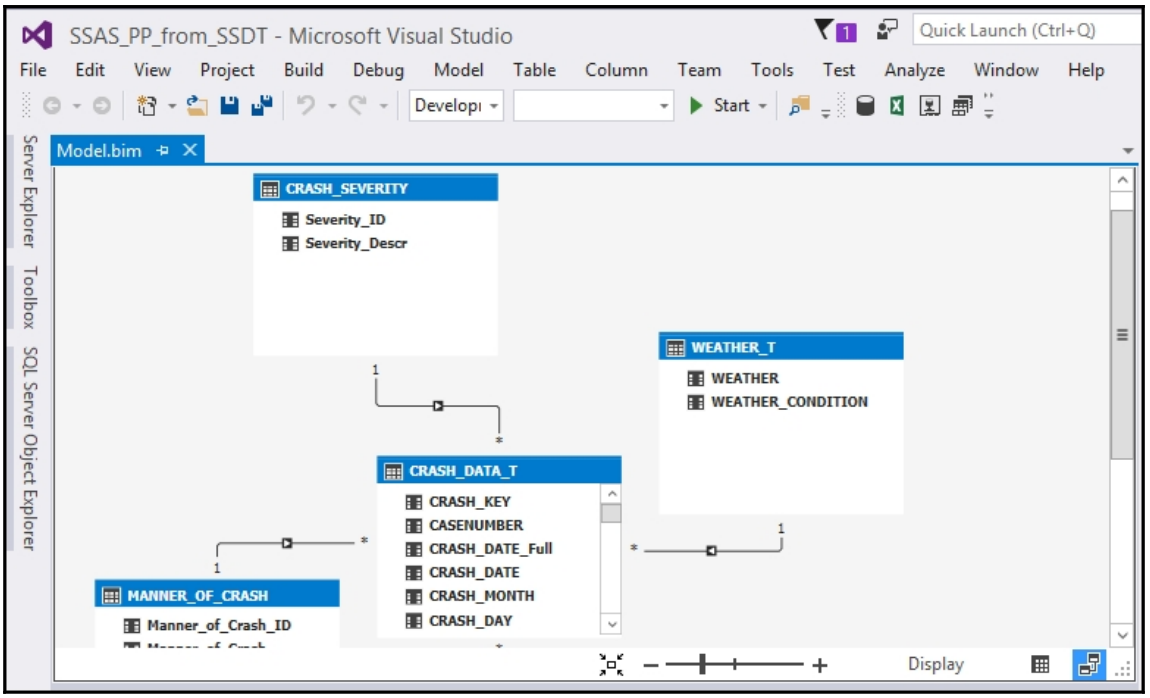

Object Explorer
Connect
localhost (SQL Server 13.0.1601.5 - WIN-6D5CG
localhost (Microsoft Analysis Server 13.0.1601.5
Databases
AW Tabular Model SQL 2014
Chapter3_Model
Chapter4_Model
Chapter5
Chapter5_admin_ff00c040-37fa-4c56-aa
Crash_Data_SSASTM
DirectQuery_CrashData
SSAS_from_PowerPivot
Management

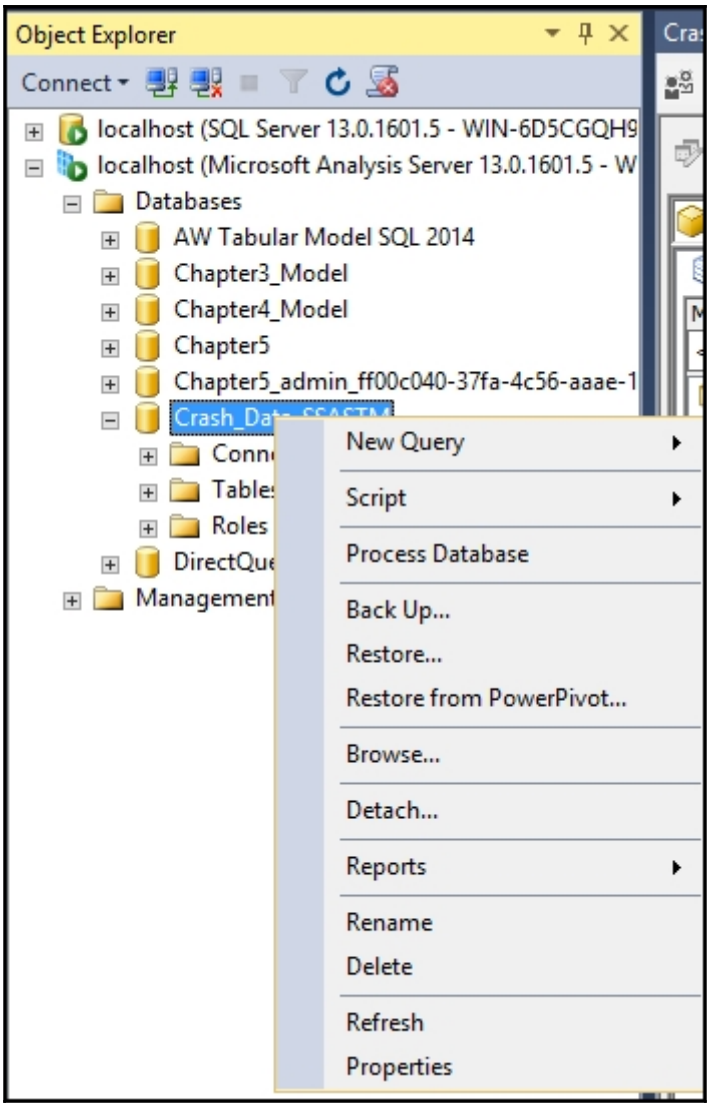

Object Explorer
Connect
localhost (SQL Server 13.0.1601.5 - WIN-6D5CG
localhost (Microsoft Analysis Server 13.0.1601.5
Databases
AW Tabular Model SQL 2014
Chapter3_Model
Chapter4_Model
Chapter5
Chapter5_admin_ff00c040-37fa-4c56-aa
Crash_Data_SSASTM
DirectQuery_CrashData
SSAS_from_PowerPivot
Management
Model [Browse]
Crash_Data_Model [Browse]
WIN-6D5CGQH9KL9....ynamic
Language:
Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Model
Measures
CRASH_DATA_T
Count_of_Crashes
KPIs
CRASH_DATA_T
CRASH_SEVERITY
LIGHT_T
MANNER_OF_CRASH
WEATHER_T
Dimension
Hierarchy
<Select dimension>
Manner_of_Crash
Count_of...
Angle, oncoming left turn
32494
Broadside
103879
Head-on
12442
Non-collision
161423
Rear-end
131565
Sideswipe, opposite direction
12459
Sideswipe, same direction
55229
Unknown
12676
(null)
37060

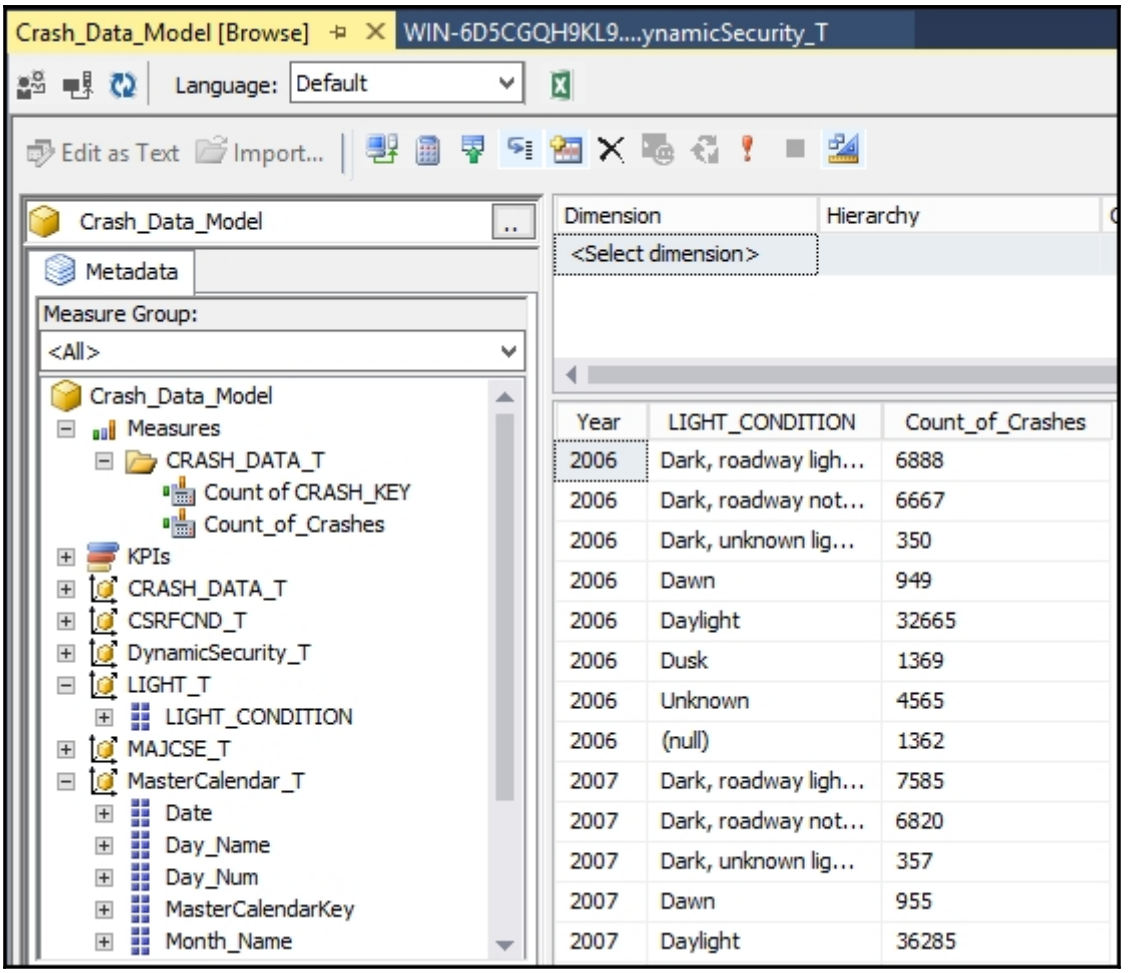

New Project
Recent
Installed
Templates
Business Intelligence
Analysis Services
Integration Services
Reporting Services
Visual C#
Visual Basic
Visual F#
Visual C++
SQL Server
Python
JavaScript
TypeScript
Online
.NET Framework 4.5.2
Sort by: Default
Search Installed Templates (Ctrl+E)
Analysis Services Multidimensional...
Import from Server...
Analysis Services Tabular Project
Import from PowerPivot
Import from Server (Tabular)
Type: Business Intelligence
Creates a tabular project by extracting the metadata and data from a PowerPivot for Excel workbook.
Click here to go online and find templates.
Name: SSAS_PP_from_SSDT
Location: c:\users\admin\documents\visual studio 2015\Projects
Browse...
Solution: Create new solution
Solution name: SSAS_PP_from_SSDT
Create directory for solution
Add to Source Control
OK
Cancel


Tabular model designer
Select an Analysis Services instance to use while authoring projects.
Workspace server:
localhost
Test Connection
In order to create a new Tabular model, you must select a compatibility level. The compatibility level must be compatible with the Analysis Services server version you want to deploy to.
Compatibility level:
(inherited)
Click here for more information about compatibility level.
Do not show this message again.
OK
Cancel

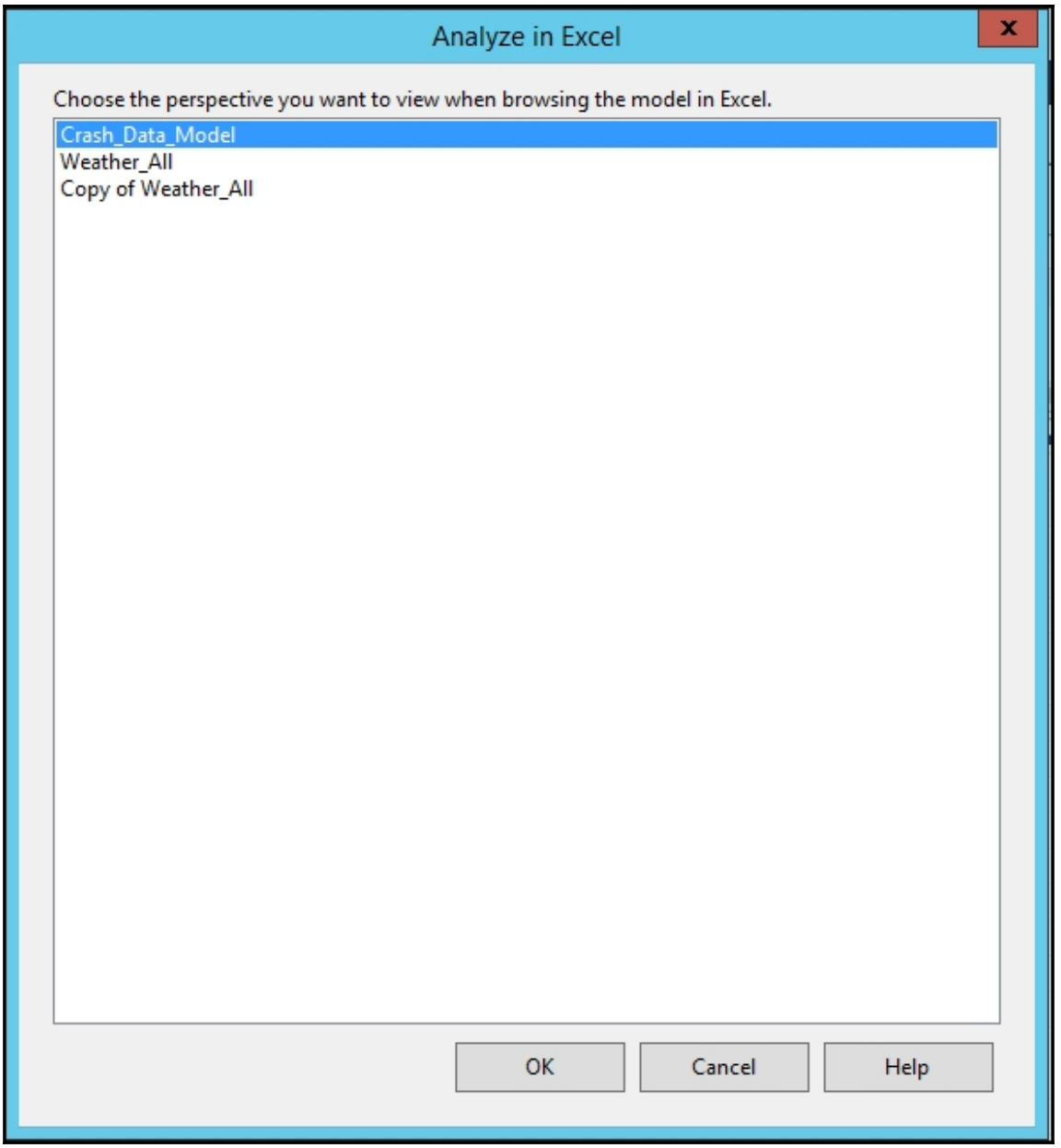

Open
Desktop
Organize
New folder
Favorites
Desktop
Downloads
Name
Crash_Data_PowerPivot_SSAS.xlsx
Chapter 8 Power Pivot.xlsx

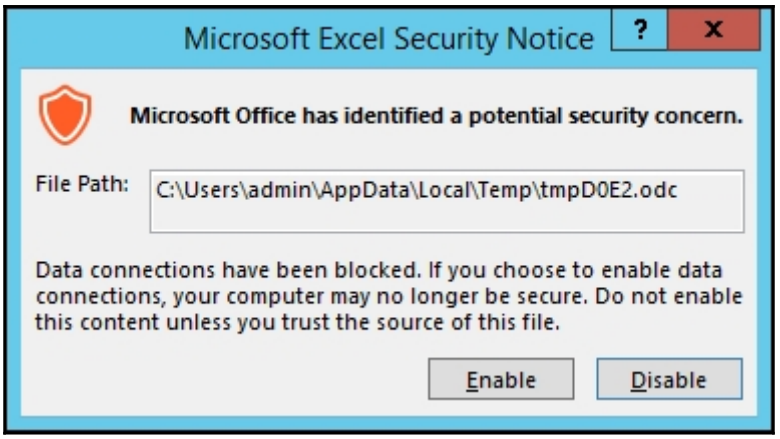

SSAS_PP_from_SSDT - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Model Table Column Team Tools Test Analyze Window Help
Start
Server Explorer
Toolbox
SQL Server Object Explorer
Model.bim
CRASH_SEVERITY
Severity_ID
Severity_Descr
WEATHER_T
WEATHER
WEATHER_CONDITION
CRASH_DATA_T
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
CRASH_DAY
MANNER_OF_CRASH
Manner_of_Crash_ID
Display

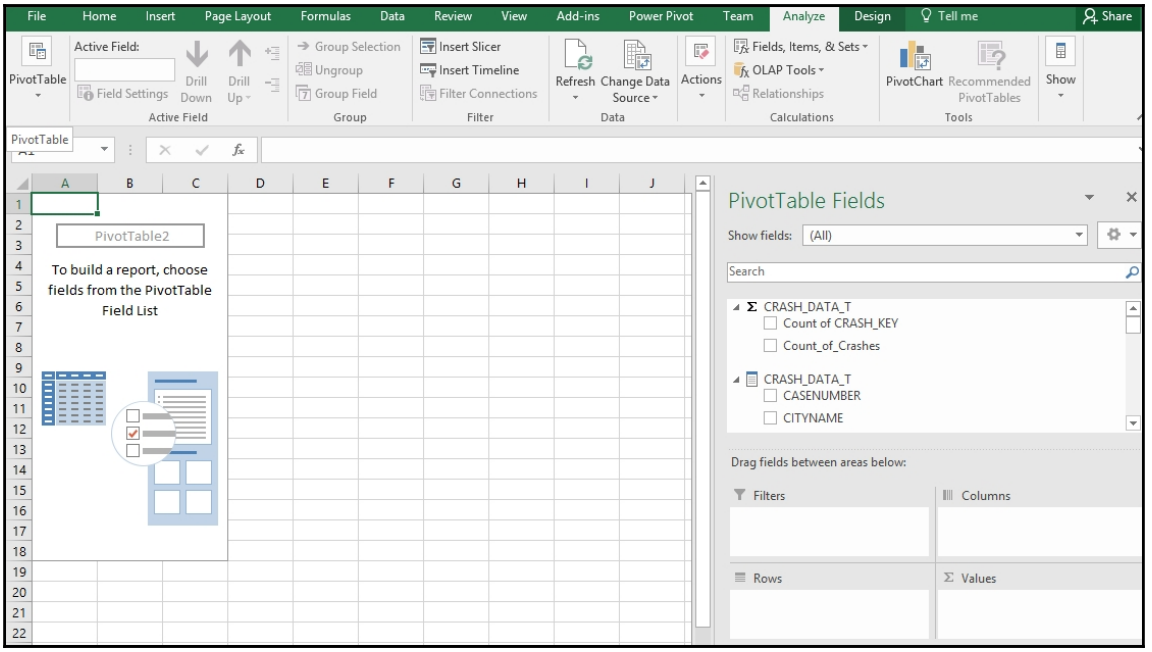

Object Explorer
Connect
localhost (SQL Server 13.0.1601.5 - WIN-6D5CGQH9
localhost (Microsoft Analysis Server 13.0.1601.5 - W
Databases
AW Tabular Model SQL 2014
Chapter3_Model
Chapter4_Model
Chapter5
Chapter5_admin_ff00c040-37fa-4c56-aaae-1
Roles
New Query
Script
Process Database
Back Up...
Restore...
Restore from PowerPivot...
Browse...
Detach...
Reports
Rename
Delete
Refresh
Properties

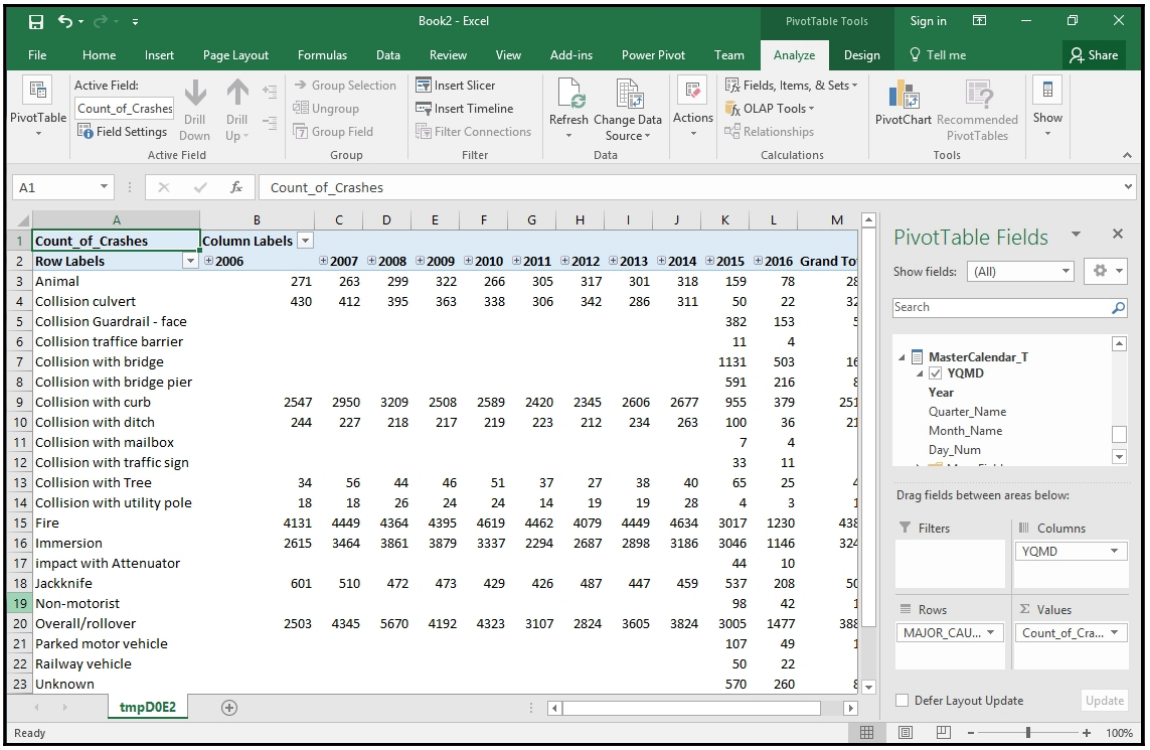


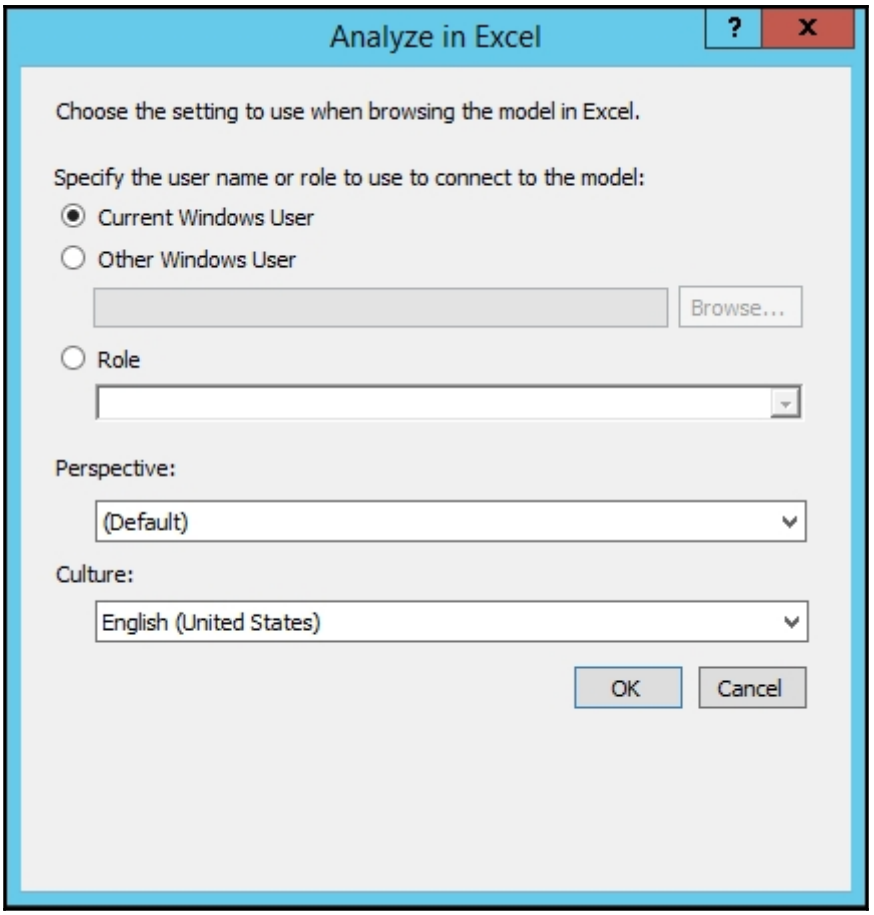
Year	LIGHT_CONDITION	Count_of_Crashes
2006	Dark, roadway ligh...	6888
2006	Dark, roadway not...	6667
2006	Dark, unknown lig...	350
2006	Dawn	949
2006	Daylight	32665
2006	Dusk	1369
2006	Unknown	4565
2006	(null)	1362
2007	Dark, roadway ligh...	7585
2007	Dark, roadway not...	6820
2007	Dark, unknown lig...	357
2007	Dawn	955
2007	Daylight	36285

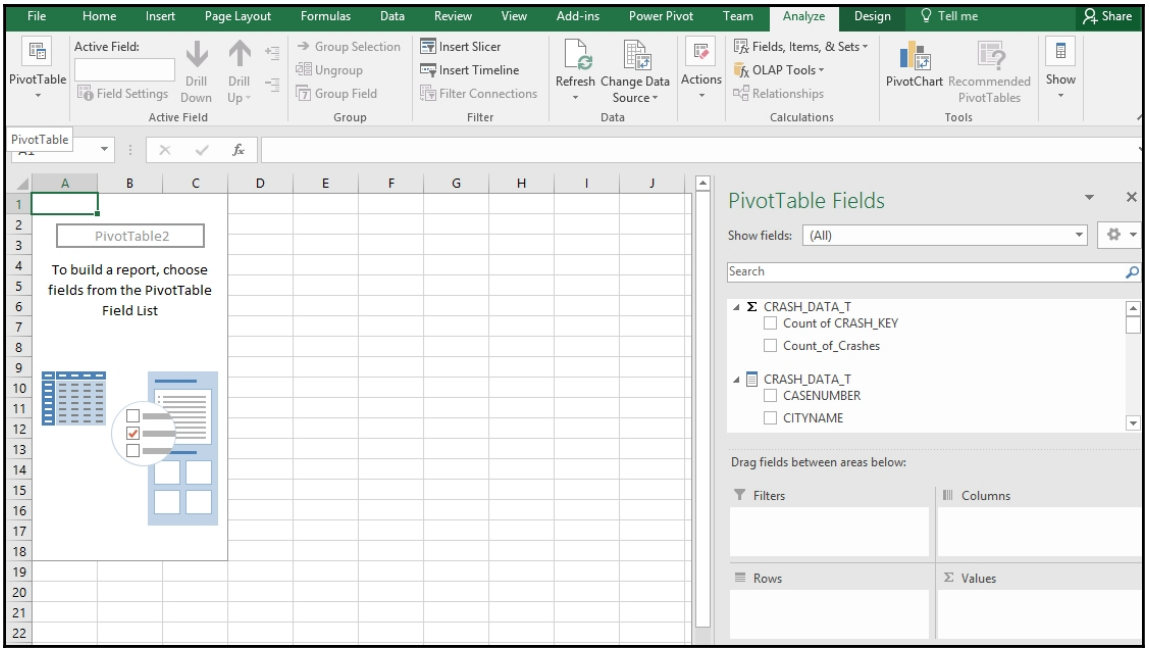

Analyze in Excel
Choose the perspective you want to view when browsing the model in Excel.
Crash_Data_Model
Weather_All
Copy of Weather_All
OK
Cancel
Help

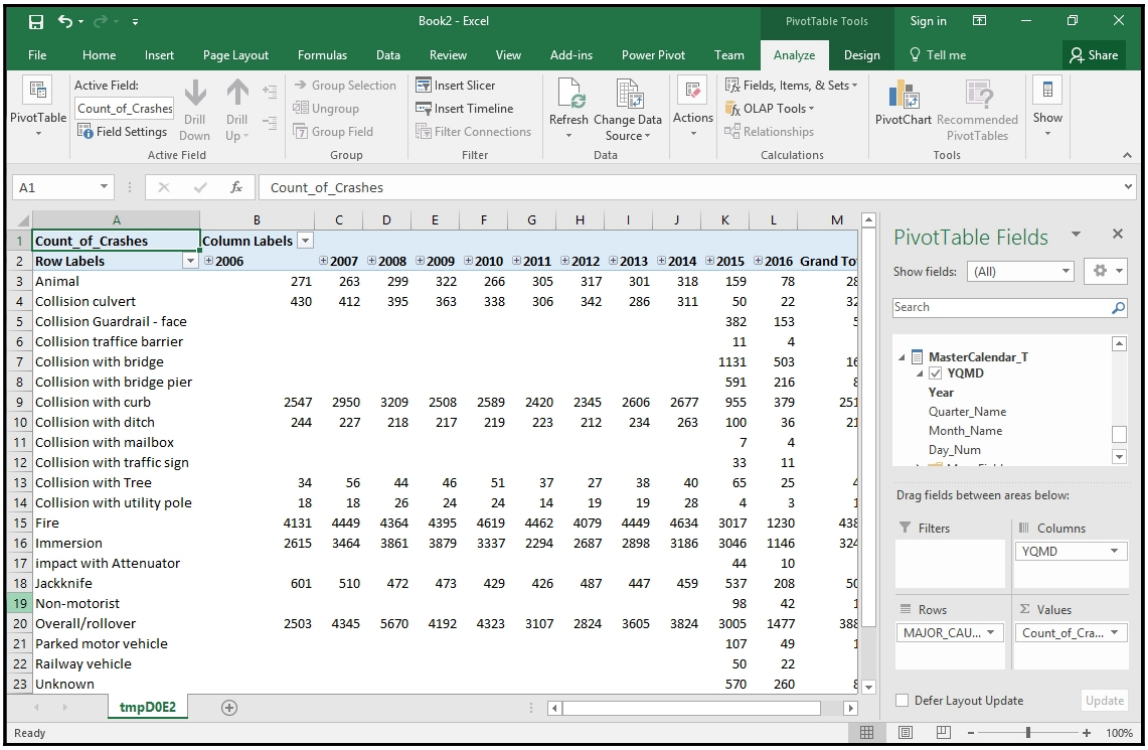

Microsoft Excel Security Notice
Microsoft Office has identified a potential security concern.
File Path:
C:\Users\admin\AppData\Local\Temp\tmpD0E2.odc
Data connections have been blocked. If you choose to enable data connections, your computer may no longer be secure. Do not enable this content unless you trust the source of this file.
Enable
Disable

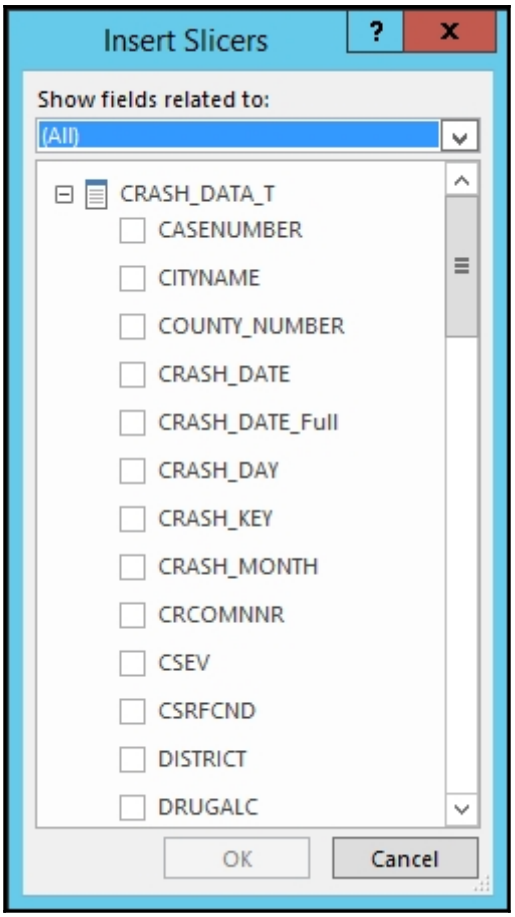

File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-ins
Power Pivot
Team
Analyze
Design
Tell me
Share
PivotTable
Active Field:
Field Settings
Drill Down
Drill Up
Active Field
Group Selection
Ungroup
Group Field
Group
Insert Slicer
Insert Timeline
Filter Connections
Filter
Refresh
Change Data Source
Data
Actions
Fields, Items, & Sets
OLAP Tools
Relationships
Calculations
PivotChart
Recommended PivotTables
Tools
Show
PivotTable2
To build a report, choose fields from the PivotTable Field List
PivotTable Fields
Show fields:
(All)
Search
CRASH_DATA_T
Count of CRASH_KEY
Count_of_Crashes
CRASH_DATA_T
CASENUMBER
CITYNAME
Drag fields between areas below:
Filters
Columns
Rows
Values

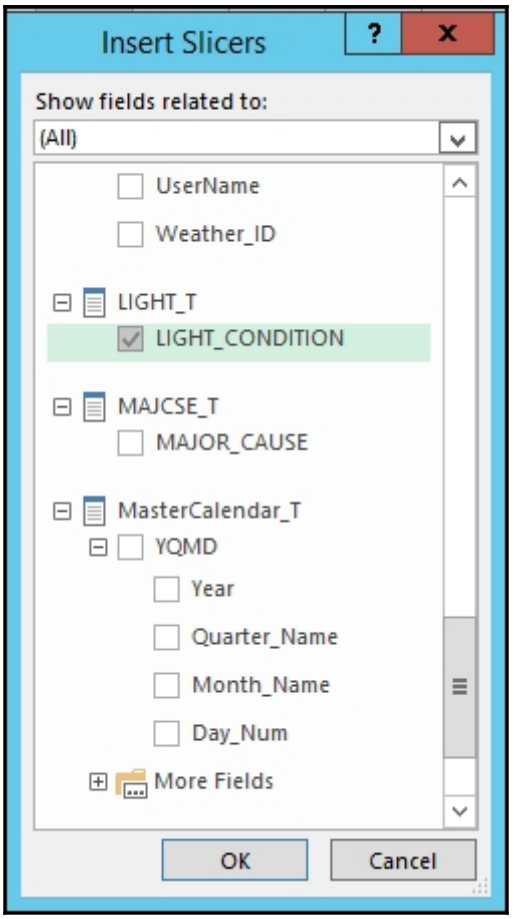

Book2 - Excel
PivotTable Tools
Sign in
File Home Insert Page Layout Formulas Data Review View Add-ins Power Pivot Team Analyze Design Tell me Share
PivotTable
Active Field:
Count_of_Crashes
Field Settings
Drill Down
Drill Up
Active Field
Group Selection
Ungroup
Group Field
Group
Insert Slicer
Insert Timeline
Filter Connections
Filter
Refresh
Change Data Source
Data
Actions
Fields, Items, & Sets
OLAP Tools
Relationships
Calculations
PivotChart
Recommended PivotTables
Tools
Show
A1
Count_of_Crashes
Count_of_Crashes | Column Labels
Row Labels | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Grand To
Animal 271 263 299 322 266 305 317 301 318 159 78 28
Collision culvert 430 412 395 363 338 306 342 286 311 50 22 32
Collision Guardrail - face 382 153 5
Collision traffice barrier 11 4
Collision with bridge 1131 503 16
Collision with bridge pier 591 216 8
Collision with curb 2547 2950 3209 2508 2589 2420 2345 2606 2677 955 379 251
Collision with ditch 244 227 218 217 219 223 212 234 263 100 36 21
Collision with mailbox 7 4
Collision with traffic sign 33 11
Collision with Tree 34 56 44 46 51 37 27 38 40 65 25 4
Collision with utility pole 18 18 26 24 24 14 19 19 28 4 3 1
Fire 4131 4449 4364 4395 4619 4462 4079 4449 4634 3017 1230 438
Immersion 2615 3464 3861 3879 3337 2294 2687 2898 3186 3046 1146 324
impact with Attenuator 44 10
Jackknife 601 510 472 473 429 426 487 447 459 537 208 50
Non-motorist 98 42 1
Overall/rollover 2503 4345 5670 4192 4323 3107 2824 3605 3824 3005 1477 388
Parked motor vehicle 107 49 1
Railway vehicle 50 22
Unknown 570 260 8
tmpD0E2
PivotTable Fields
Show fields: (All)
Search
MasterCalendar_T
YQMD
Year
Quarter_Name
Month_Name
Day_Num
Drag fields between areas below:
Filters
Columns
YQMD
Rows
MAJOR_CAU...
Values
Count_of_Cra...
Defer Layout Update
Update
Ready
100%


Analyze in Excel
?
x
Choose the setting to use when browsing the model in Excel.
Specify the user name or role to use to connect to the model:
Current Windows User
Other Windows User
Browse...
Role
Perspective:
(Default)
Culture:
English (United States)
OK
Cancel


File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-ins
Power Pivot
Team
Analyze
Design
Tell me
Share
PivotTable
Active Field:
Field Settings
Drill Down
Drill Up
Active Field
Group Selection
Ungroup
Group Field
Group
Insert Slicer
Insert Timeline
Filter Connections
Filter
Refresh
Change Data Source
Data
Actions
Fields, Items, & Sets
OLAP Tools
Relationships
Calculations
PivotChart
Recommended PivotTables
Tools
Show
PivotTable
PivotTable2
To build a report, choose fields from the PivotTable Field List
PivotTable Fields
Show fields:
(All)
Search
CRASH_DATA_T
Count of CRASH_KEY
Count_of_Crashes
CRASH_DATA_T
CASENUMBER
CITYNAME
Drag fields between areas below:
Filters
Columns
Rows
Values


Book2 - Excel
PivotTable Tools
Sign in
File Home Insert Page Layout Formulas Data Review View Add-ins Power Pivot Team Analyze Design Tell me Share
PivotTable
Active Field:
Count_of_Crashes
Field Settings
Drill Down
Drill Up
Active Field
Group Selection
Ungroup
Group Field
Group
Insert Slicer
Insert Timeline
Filter Connections
Filter
Refresh
Change Data Source
Data
Actions
Fields, Items, & Sets
OLAP Tools
Relationships
Calculations
PivotChart
Recommended PivotTables
Tools
Show
A1
Count_of_Crashes
Count_of_Crashes
Column Labels
Row Labels
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 Grand To
Animal 271 263 299 322 266 305 317 301 318 159 78
Collision culvert 430 412 395 363 338 306 342 286 311 50 22
Collision Guardrail - face 382 153
Collision traffice barrier 11 4
Collision with bridge 1131 503
Collision with bridge pier 591 216
Collision with curb 2547 2950 3209 2508 2589 2420 2345 2606 2677 955 379
Collision with ditch 244 227 218 217 219 223 212 234 263 100 36
Collision with mailbox 7 4
Collision with traffic sign 33 11
Collision with Tree 34 56 44 46 51 37 27 38 40 65 25
Collision with utility pole 18 18 26 24 24 14 19 19 28 4 3
Fire 4131 4449 4364 4395 4619 4462 4079 4449 4634 3017 1230
Immersion 2615 3464 3861 3879 3337 2294 2687 2898 3186 3046 1146
impact with Attenuator 44 10
Jackknife 601 510 472 473 429 426 487 447 459 537 208
Non-motorist 98 42
Overall/rollover 2503 4345 5670 4192 4323 3107 2824 3605 3824 3005 1477
Parked motor vehicle 107 49
Railway vehicle 50 22
Unknown 570 260
tmpD0E2
PivotTable Fields
Show fields: (All)
Search
MasterCalendar_T
YQMD
Year
Quarter_Name
Month_Name
Day_Num
Drag fields between areas below:
Filters
Columns
YQMD
Rows
MAJOR_CAU...
Values
Count_of_Cra...
Defer Layout Update
Update
Ready
100%


Insert Slicers
Show fields related to:
(All)
CRASH_DATA_T
CASENUMBER
CITYNAME
COUNTY_NUMBER
CRASH_DATE
CRASH_DATE_Full
CRASH_DAY
CRASH_KEY
CRASH_MONTH
CRCOMNNR
CSEV
CSRFCND
DISTRICT
DRUGALC
OK
Cancel


Insert Slicers
Show fields related to:
(All)
UserName
Weather_ID
LIGHT_T
LIGHT_CONDITION
MAJCSE_T
MAJOR_CAUSE
MasterCalendar_T
YQMD
Year
Quarter_Name
Month_Name
Day_Num
More Fields
OK
Cancel

Count_of_Crashes	Column Labels											
Row Labels	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Grand Total
Animal	271	263	299	322	266	305	317	301	318	159	78	2899
Collision culvert	430	412	395	363	338	306	342	286	311	50	22	3255
Collision Guardrail - face										382	153	535
Collision traffice barrier										11	4	15
Collision with bridge										1131	503	1634
Collision with bridge pier										591	216	807
Collision with curb	2547	2950	3209	2508	2589	2420	2345	2606	2677	955	379	25185
Collision with ditch	244	227	218	217	219	223	212	234	263	100	36	2193
Collision with mailbox										7	4	11
Collision with traffic sign										33	11	44
Collision with Tree	34	56	44	46	51	37	27	38	40	65	25	463
Collision with utility pole	18	18	26	24	24	14	19	19	28	4	3	197
Fire	4131	4449	4364	4395	4619	4462	4079	4449	4634	3017	1230	43829
Immersion	2615	3464	3861	3879	3337	2294	2687	2898	3186	3046	1146	32413
impact with Attenuator										44	10	54
Jackknife	601	510	472	473	429	426	487	447	459	537	208	5049
Non-motorist										98	42	140
Overall/rollover	2503	4345	5670	4192	4323	3107	2824	3605	3824	3005	1477	38875
Parked motor vehicle										107	49	156
Railway vehicle										50	22	72
Unknown										570	260	830

LIGHT_CONDITION

- Dark, roadway lighted
- Dark, roadway not light...
- Dark, unknown lighting
- Dawn
- Daylight
- Dusk
- Unknown

Count_of_Crashes	Column Labels											
Row Labels	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Grand Total
Animal	7	1	3	1	2	3	3	2	3	3		28
Collision culvert	10	10	9	8	8	7	6	6	12	1		77
Collision Guardrail - face										2	1	3
Collision with bridge										22	12	34
Collision with bridge pier										10	6	16
Collision with curb	71	80	105	69	59	79	71	85	79	25	18	741
Collision with ditch	4	6	3	3	8	11	6	1	10	4	1	57
Collision with mailbox											1	1
Collision with traffic sign										1		1
Collision with Tree	1	2	1	1						1		6
Collision with utility pole				1	1							2
Fire	47	42	47	48	33	48	48	55	64	48	17	497
Immersion	25	38	42	62	30	43	30	52	48	33	18	421
impact with Attenuator										1		1
Jackknife	12	7	4	3	5	9	5	10	3	7	2	67
Non-motorist										1		1
Overall/rollover	102	98	149	85	110	97	81	95	104	93	63	1077
Parked motor vehicle										1		1
Railway vehicle											1	1
Unknown										7	3	10
	670	671	730	672	653	603	543	589	611	726	308	6776

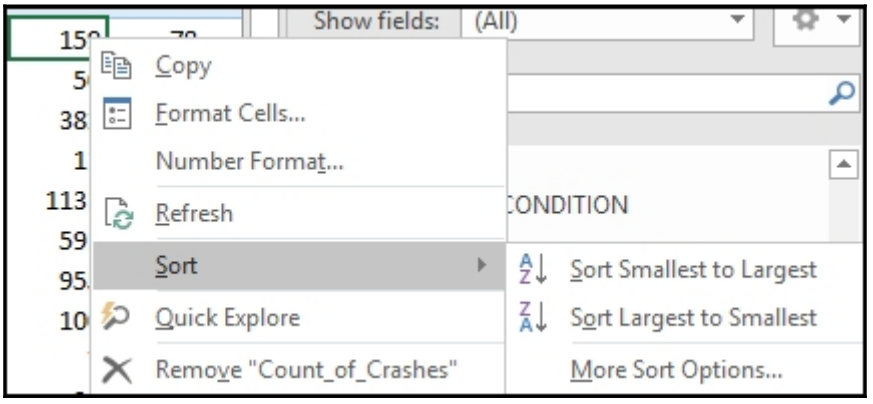
LIGHT_CONDITION

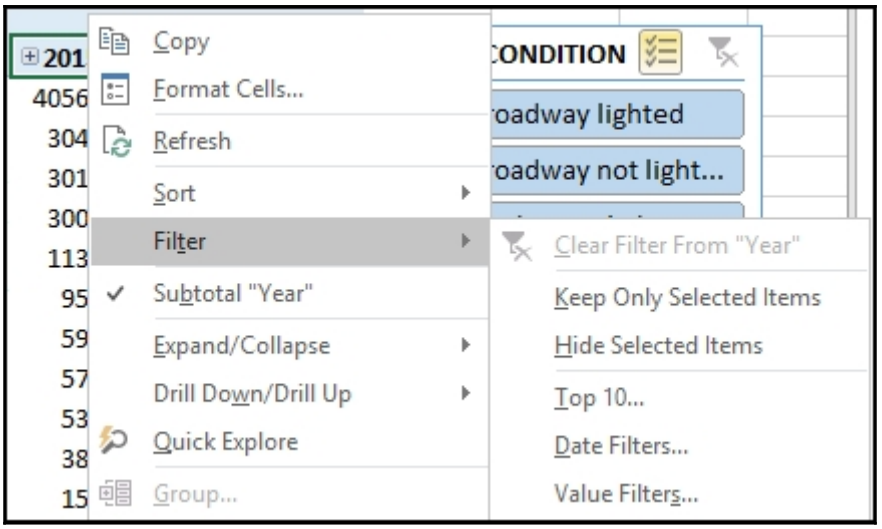
- Dark, roadway lighted
- Dark, roadway not light...
- Dark, unknown lighting
- Dawn
- Daylight
- Dusk
- Unknown

Count_of_Crashes	Column Labels											
Row Labels	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Grand Total
Animal	189	184	199	228	187	227	227	212	237	93	44	2027
Collision culvert	290	282	257	250	224	198	236	190	205	37	14	2183
Collision Guardrail - face										280	99	379
Collision traffice barrier										7	3	10
Collision with bridge										805	365	1170
Collision with bridge pier										428	165	593
Collision with curb	1437	1751	1844	1432	1566	1401	1438	1492	1550	586	230	14727
Collision with ditch	90	90	86	85	93	97	83	83	102	49	18	876
Collision with mailbox										5	4	9
Collision with traffic sign										26	8	34
Collision with Tree	28	50	35	40	40	24	26	34	35	54	19	385
Collision with utility pole	12	15	19	18	20	5	16	16	22	4	3	150
Fire	3338	3611	3573	3514	3717	3480	3350	3643	3760	2460	991	35437
Immersion	1449	2232	2446	2589	2276	1616	1782	1942	2104	1964	735	21135
impact with Attenuator										35	8	43
Jackknife	246	234	208	219	215	193	236	195	226	258	101	2331
Non-motorist										56	26	82
Overall/rollover	1684	2869	3923	2822	3003	2101	1947	2474	2664	2158	994	26639
Parked motor vehicle										72	33	105
Railway vehicle										29	15	44
Unknown										483	207	690

LIGHT_CONDITION

- Dark, roadway lighted
- Dark, roadway not light...
- Dark, unknown lighting
- Dawn
- Daylight
- Dusk
- Unknown




201
4056
304
301
300
113
95
59
57
53
38
15
Copy
Format Cells...
Refresh
Sort
Filter
Subtotal "Year"
Expand/Collapse
Drill Down/Drill Up
Quick Explore
Group...
CONDITION
oadway lighted
oadway not light...
Clear Filter From "Year"
Keep Only Selected Items
Hide Selected Items
Top 10...
Date Filters...
Value Filters...

Count_of_Crashes	Column Labels	
Row Labels	2015	Grand Total
	40569	40569
Immersion	3046	3046
Fire	3017	3017
Overall/rollover	3005	3005
Collision with bridge	1131	1131
Collision with curb	955	955
Collision with bridge pier	591	591
Unknown	570	570
Jackknife	537	537
Collision Guardrail - face	382	382
Animal	159	159
Parked motor vehicle	107	107
Collision with ditch	100	100
Non-motorist	98	98
Collision with Tree	65	65
Railway vehicle	50	50
Collision culvert	50	50
impact with Attenuator	44	44
Collision with traffic sign	33	33
Collision traffice barrier	11	11
Vehicle in Traffic	10	10

LIGHT_CONDITION

- Dark, roadway lighted
- Dark, roadway not light...
- Dark, unknown lighting
- Dawn
- Daylight
- Dusk
- Unknown

Count_of_Crashes	Column Labels										
Row Labels	Blowing Sand	Clear	Cloudy	Mist	Partly Cloudy	Rain	Severe winds	Sleet, hail, freezing rain	Unknown		Grand Total
2006	186	26237	403	4437	15106	322	125	1822	4727	1450	54815
2007	606	27924	512	3430	15175	1086	184	4210	1180	4502	58809
2008	1006	25939	460	3967	16204	1002	221	5482	611	5026	59918
2009	615	24426	255	4495	15406	724	114	3401	542	5516	55494
2010	819	25320	586	3528	14042	748	164	4057	822	4310	54396
2011	299	22807	232	3228	13607	461	79	2811	628	4641	48793
2012	241	25437	360	2646	11344	314	123	2453	408	4556	47882
2013	356	23611	275	3093	13196	873	89	3665	413	4438	50009
2014	405	23763	311	3238	14425	437	172	3940	453	4869	52013
2015	23	29949	333	3828	10641	68	97	2664	418	6520	54541
2016	6	11476	178	1275	5413	52	97	1486	178	2396	22557
Grand Total	4562	266889	3905	37165	144559	6087	1465	35991	10380	48224	559227

PivotTable Fields

Show fields: (All)

Search

MasterCalendar_T
YQMD
More Fields
WEATHER_T
WEATHER
WEATHER_CONDITION

Drag fields between areas below:

Filters
Columns: WEATHER_CON...
Rows: YQMD
Values: Count_of_Crashes

Count_of_Crashes	Column Labels										
Row Labels	Blowing Sand	Clear	Cloudy	Mist	Partly Cloudy	Rain	Severe winds	Sleet, hail, freezing rain	Unknown		Grand Total
⊞2006	186	26237	403	4437	15106	322	125	1822	4727	1450	54815
⊞2007	606	27924	512	3430	15175	1086	184	4210	1180	4502	58809
⊞2008	1006	25939	460	3967	16204	1002	221	5482	611	5026	59918
⊞2009	615	24426	255	4495	15406	724	114	3401	542	5516	55494
⊞2010	819	25320	586	3528	14042	748	164	4057	822	4310	54396
⊞2011	299	22807	232	3228	13607	461	79	2811	628	4641	48793
⊞2012	241	25437	360	2646	11344	314	123	2453	408	4556	47882
⊞2013	356	23611	275	3093	13196	873	89	3665	413	4438	50009
⊞2014	405	23763	311	3238	14425	437	172	3940	453	4869	52013
⊞2015	23	29949	333	3828	10641	68	97	2664	418	6520	54541
⊞2016	6	11476	178	1275	5413	52	97	1486	178	2396	22557
Grand Total	4562	266889	3905	37165	144559	6087	1465	35991	10380	48224	559227

MasterCalendar_T

All Periods YEARS

2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

Count_of_Crashes	Column Labels									
Row Labels	Blowing Sand	Clear	Cloudy	Mist	Partly Cloudy	Rain	Severe winds	Sleet, hail, freezing rain	Unknown	Grand Total
⊞2010	819	25320	586	3528	14042	748	164	4057	822	4310	54396
Grand Total	819	25320	586	3528	14042	748	164	4057	822	4310	54396

MasterCalendar_T

2010 YEARS

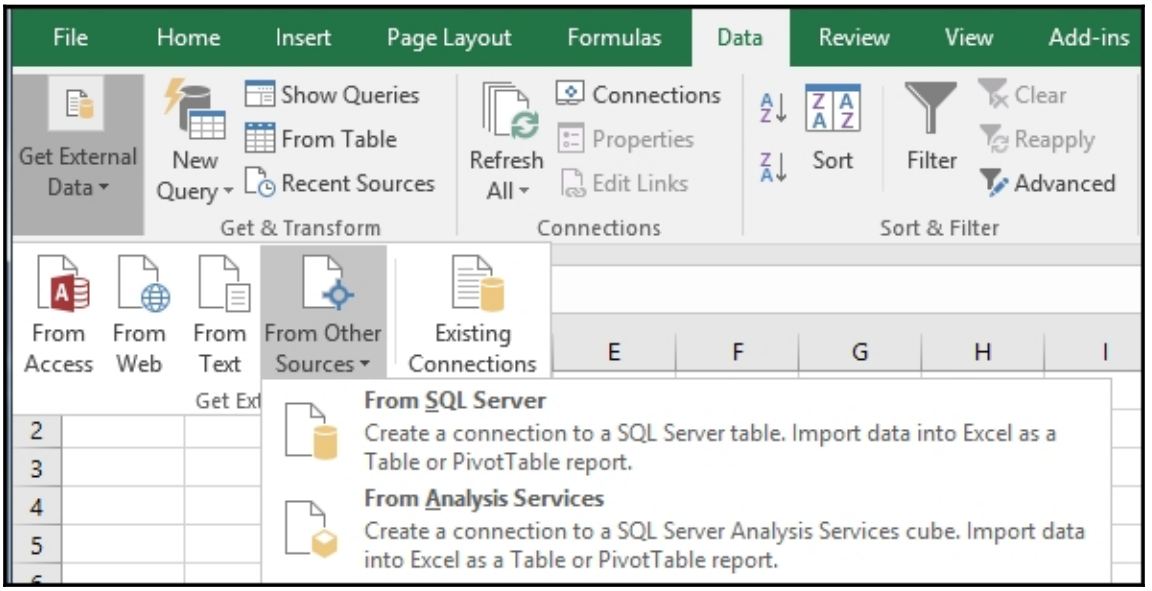
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

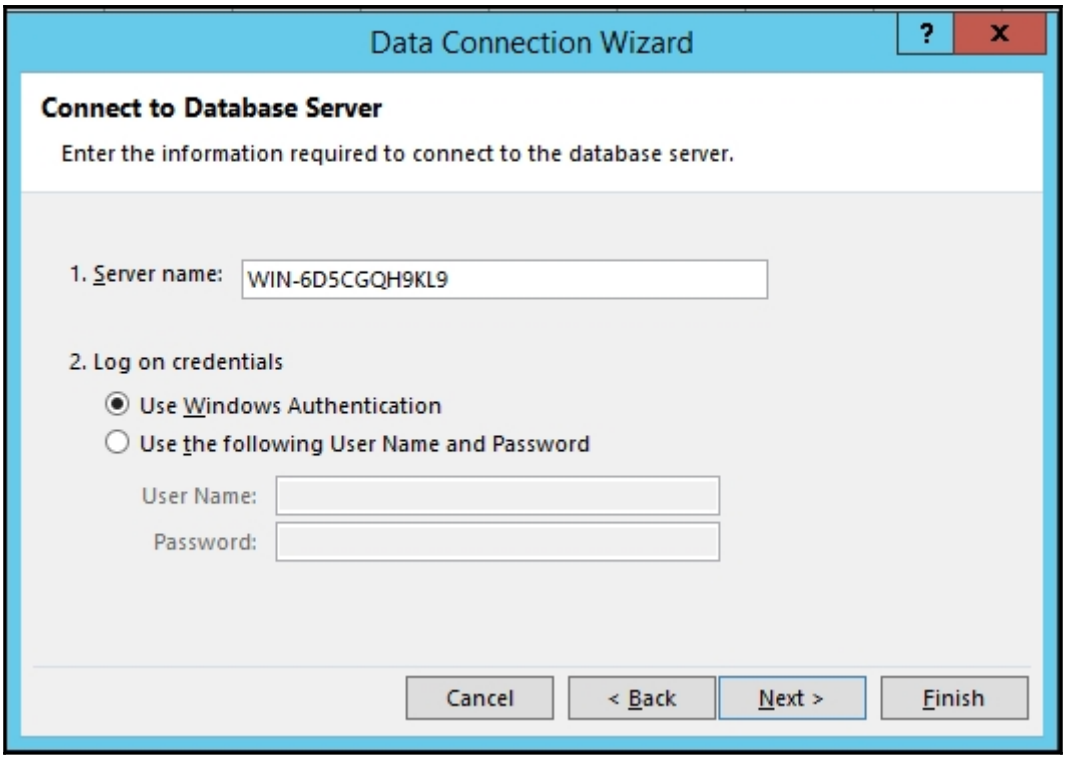
Count_of_Crashes	Column Labels										
Row Labels	Blowing Sand	Clear	Cloudy	Mist	Partly Cloudy	Rain	Severe winds	Sleet, hail, freezing rain	Unknown		Grand Total
⊞2010	819	25320	586	3528	14042	748	164	4057	822	4310	54396
⊞2011	299	22807	232	3228	13607	461	79	2811	628	4641	48793
⊞2012	241	25437	360	2646	11344	314	123	2453	408	4556	47882
⊞2013	356	23611	275	3093	13196	873	89	3665	413	4438	50009
Grand Total	**1715**	**97175**	**1453**	**12495**	**52189**	**2396**	**455**	**12986**	**2271**	**17945**	**201080**

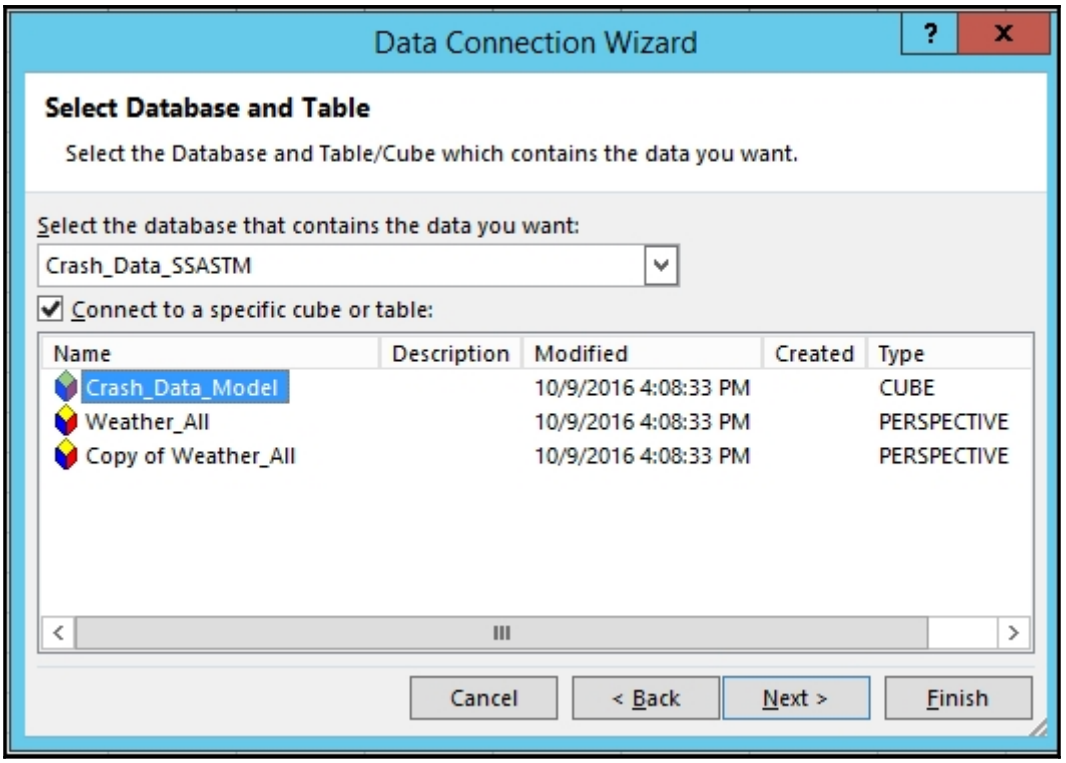
MasterCalendar_T

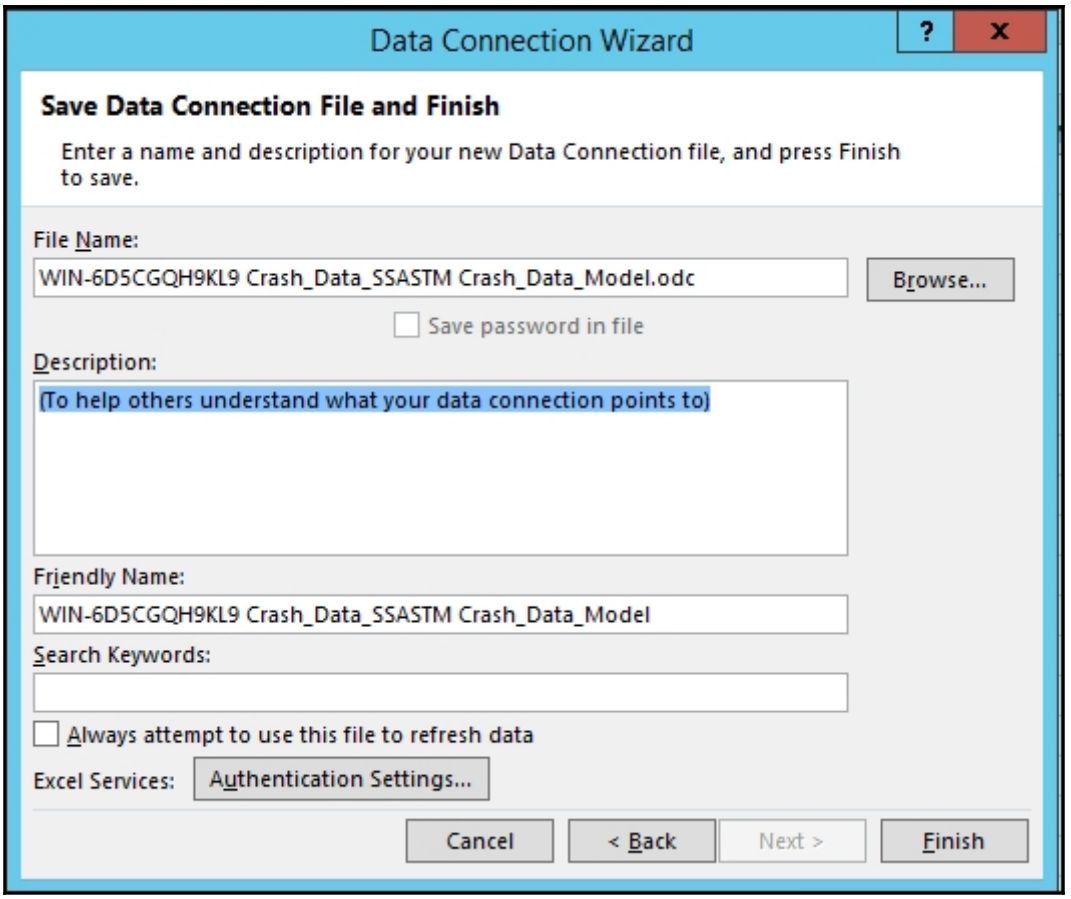
2010 - 2013 YEARS

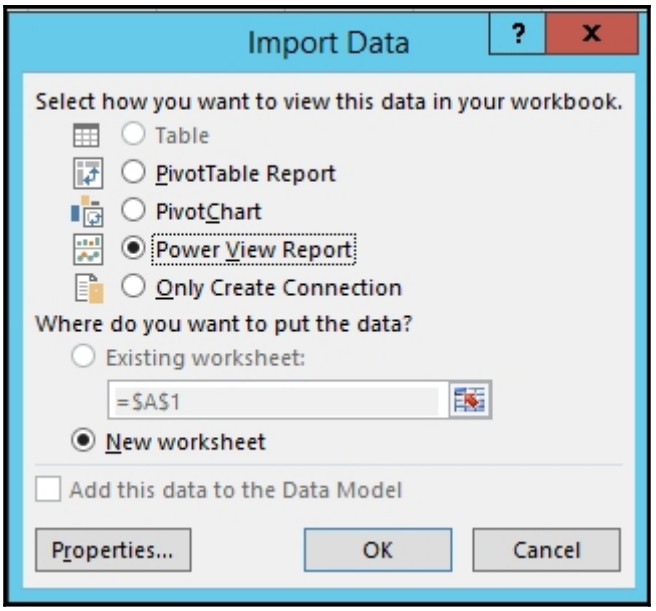
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

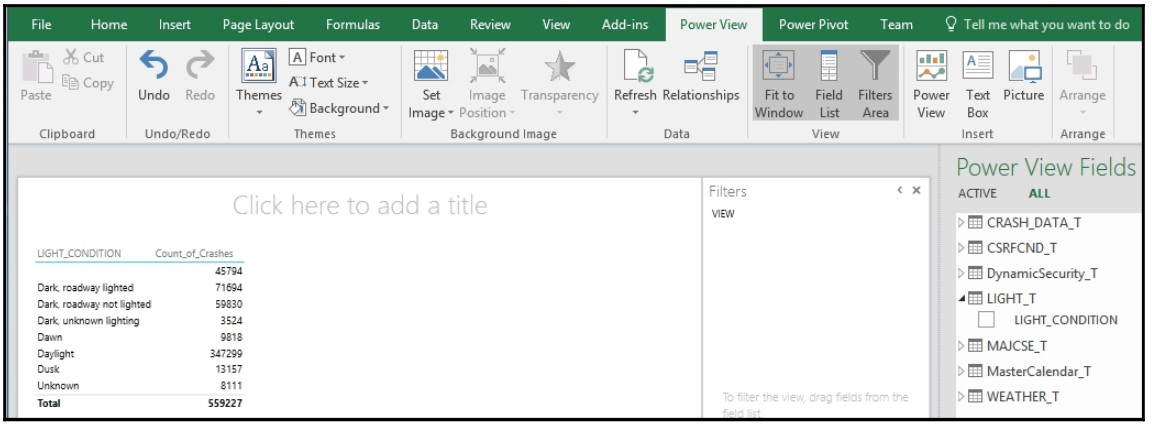


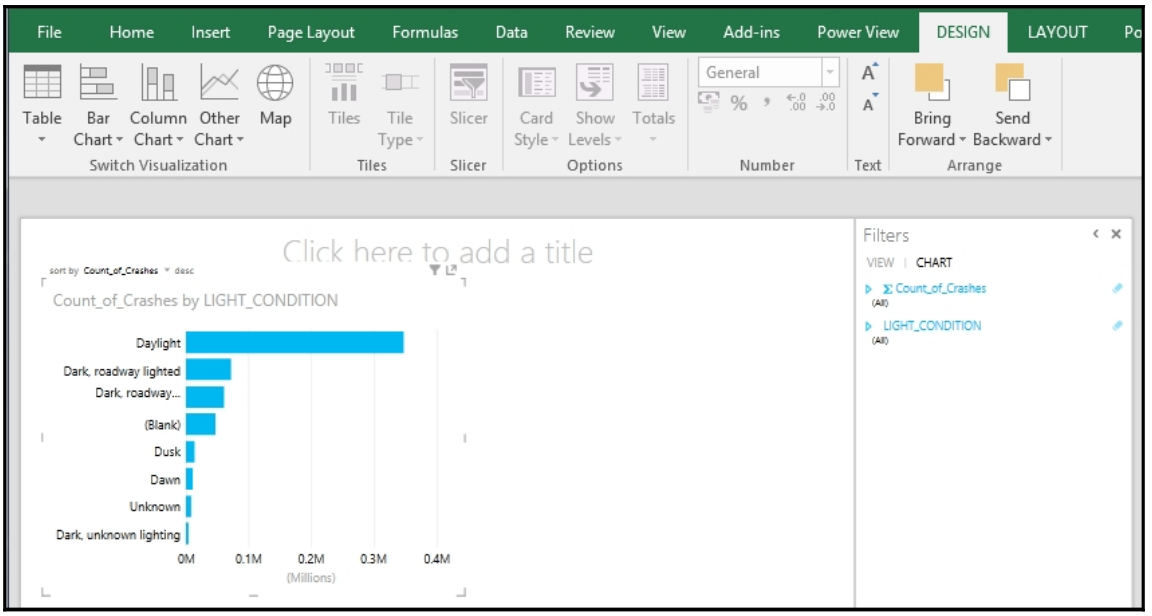

Data Connection Wizard
Connect to Database Server
Enter the information required to connect to the database server.
1. Server name:
WIN-6D5CGQH9KL9
2. Log on credentials
Use Windows Authentication
Use the following User Name and Password
User Name:
Password:
Cancel
< Back
Next >
Finish

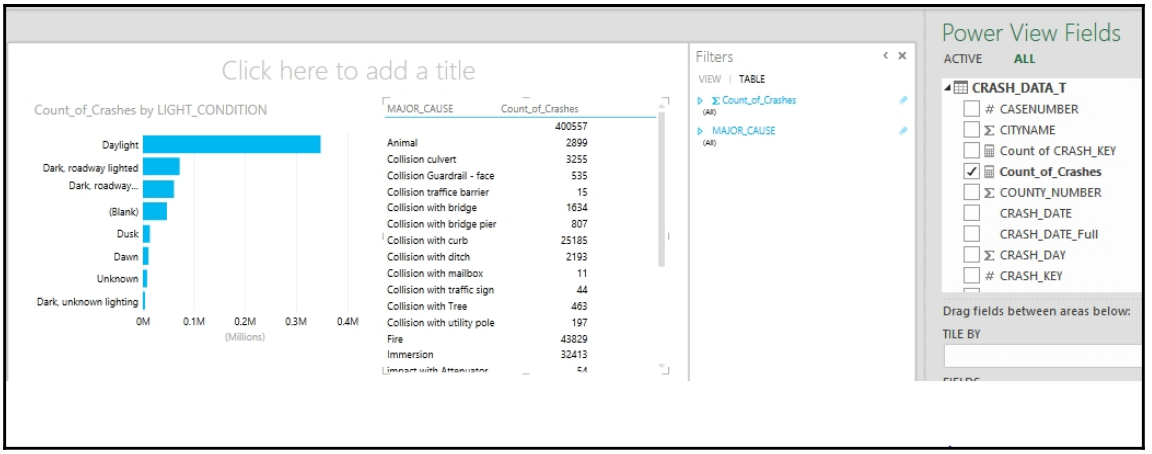

Data Connection Wizard
Select Database and Table
Select the Database and Table/Cube which contains the data you want.
Select the database that contains the data you want:
Crash_Data_SSASTM
Connect to a specific cube or table:
Name
Description
Modified
Created
Type
Crash_Data_Model
10/9/2016 4:08:33 PM
CUBE
Weather_All
10/9/2016 4:08:33 PM
PERSPECTIVE
Copy of Weather_All
10/9/2016 4:08:33 PM
PERSPECTIVE
Cancel
< Back
Next >
Finish

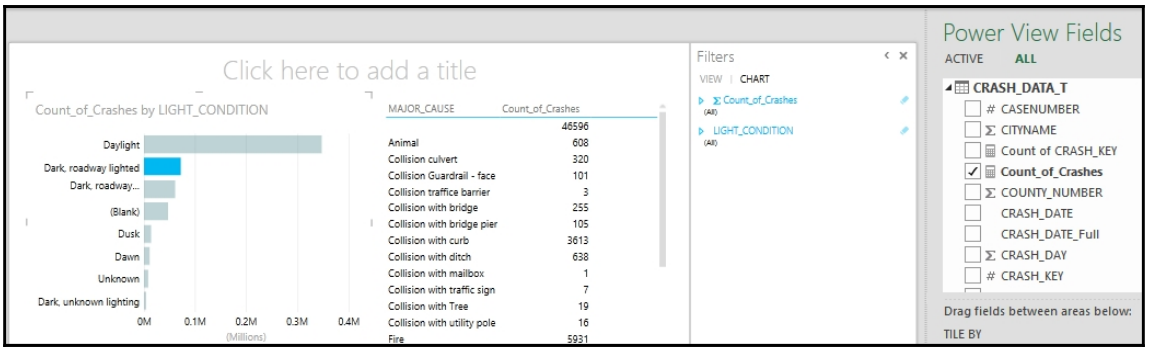

Data Connection Wizard
Save Data Connection File and Finish
Enter a name and description for your new Data Connection file, and press Finish to save.
File Name:
WIN-6D5CGQH9KL9 Crash_Data_SSASTM Crash_Data_Model.odc
Browse...
Save password in file
Description:
(To help others understand what your data connection points to)
Friendly Name:
WIN-6D5CGQH9KL9 Crash_Data_SSASTM Crash_Data_Model
Search Keywords:
Always attempt to use this file to refresh data
Excel Services:
Authentication Settings...
Cancel
< Back
Next >
Finish

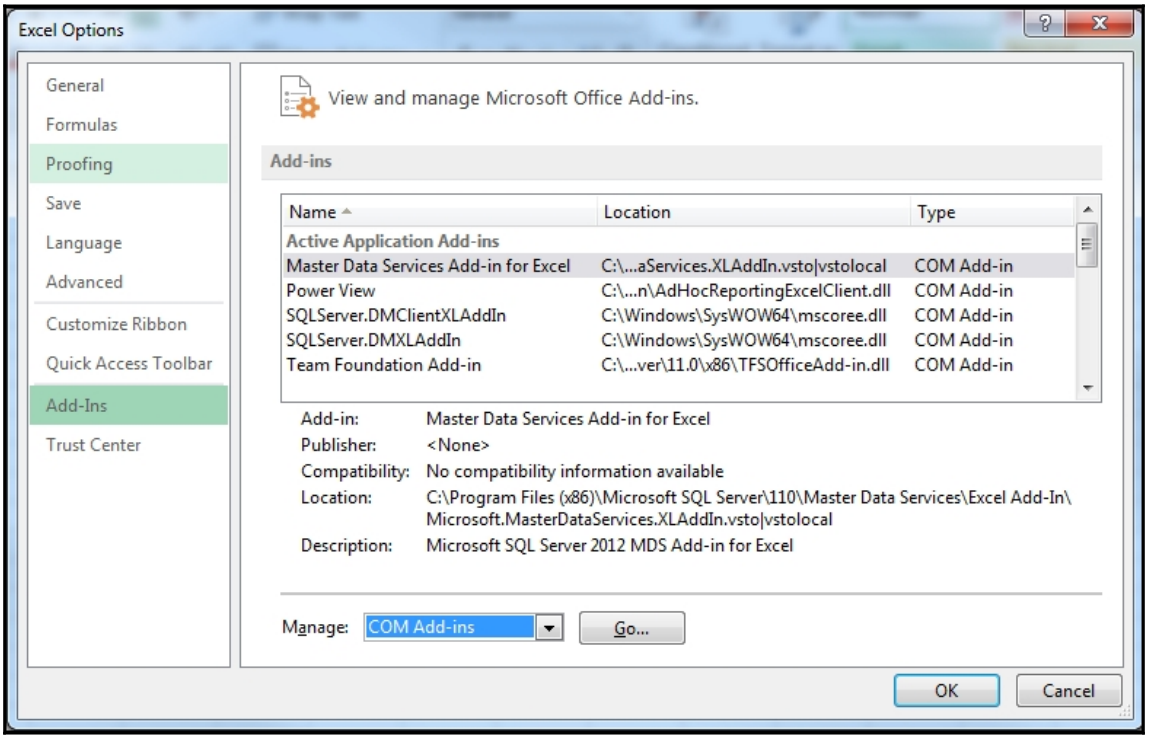

Import Data
Select how you want to view this data in your workbook.
Table
PivotTable Report
PivotChart
Power View Report
Only Create Connection
Where do you want to put the data?
Existing worksheet:
=$A$1
New worksheet
Add this data to the Data Model
Properties...
OK
Cancel

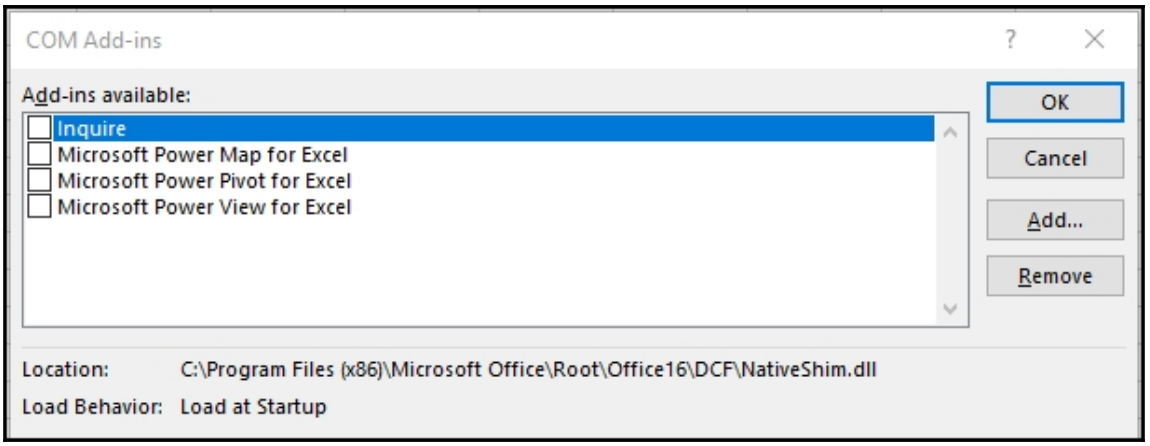

File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-ins
Power View
Power Pivot
Team
Tell me what you want to do
Paste
Cut
Copy
Undo
Redo
Themes
Font
Text Size
Background
Set Image
Image Position
Transparency
Refresh
Relationships
Fit to Window
Field List
Filters Area
Power View
Text Box
Picture
Arrange
Clipboard
Undo/Redo
Themes
Background Image
Data
View
Insert
Arrange
Click here to add a title
LIGHT_CONDITION
Count_of_Crashes
45794
Dark, roadway lighted 71694
Dark, roadway not lighted 59830
Dark, unknown lighting 3524
Dawn 9818
Daylight 347299
Dusk 13157
Unknown 8111
Total 559227
Filters
VIEW
To filter the view, drag fields from the field list
Power View Fields
ACTIVE
ALL
CRASH_DATA_T
CSRFCND_T
DynamicSecurity_T
LIGHT_T
LIGHT_CONDITION
MAJCSE_T
MasterCalendar_T
WEATHER_T

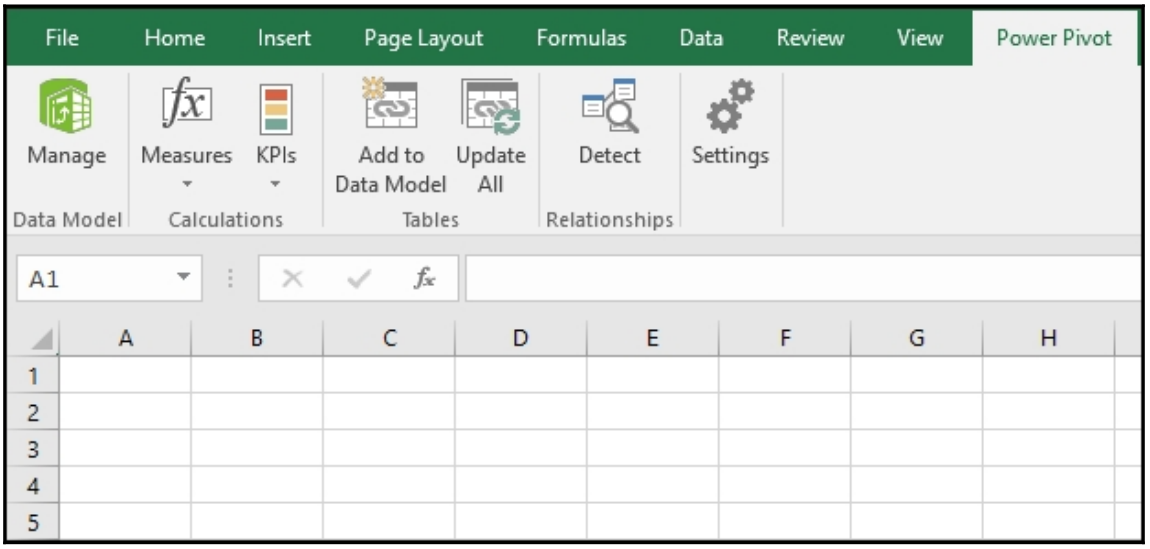

File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-ins
Power View
DESIGN
LAYOUT
Table
Bar Chart
Column Chart
Other Chart
Map
Switch Visualization
Tiles
Tile Type
Tiles
Slicer
Slicer
Card Style
Show Levels
Totals
Options
General
Number
Text
Bring Forward
Send Backward
Arrange
Click here to add a title
sort by Count_of_Crashes desc
Count_of_Crashes by LIGHT_CONDITION
Daylight
Dark, roadway lighted
Dark, roadway...
(Blank)
Dusk
Dawn
Unknown
Dark, unknown lighting
0M
0.1M
0.2M
0.3M
0.4M
(Millions)
Filters
VIEW | CHART
Count_of_Crashes
(All)
LIGHT_CONDITION
(All)

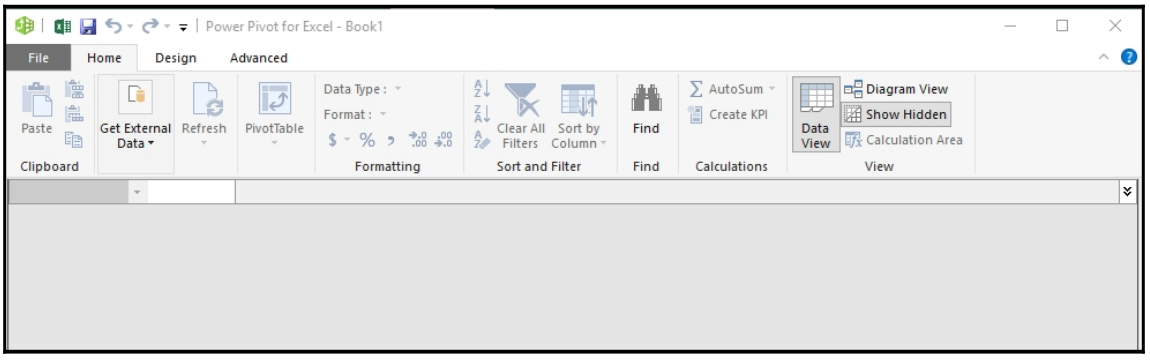

Click here to add a title
Count_of_Crashes by LIGHT_CONDITION
Daylight
Dark, roadway lighted
Dark, roadway...
(Blank)
Dusk
Dawn
Unknown
Dark, unknown lighting
0M
0.1M
0.2M
0.3M
0.4M
(Millions)
MAJOR_CAUSE
Count_of_Crashes
400557
Animal 2899
Collision culvert 3255
Collision Guardrail - face 535
Collision traffice barrier 15
Collision with bridge 1634
Collision with bridge pier 807
Collision with curb 25185
Collision with ditch 2193
Collision with mailbox 11
Collision with traffic sign 44
Collision with Tree 463
Collision with utility pole 197
Fire 43829
Immersion 32413
Filters
VIEW | TABLE
Count_of_Crashes
(All)
MAJOR_CAUSE
(All)
Power View Fields
ACTIVE
ALL
CRASH_DATA_T
CASENUMBER
CITYNAME
Count of CRASH_KEY
Count_of_Crashes
COUNTY_NUMBER
CRASH_DATE
CRASH_DATE_Full
CRASH_DAY
CRASH_KEY
Drag fields between areas below:
TILE BY


Click here to add a title
Count_of_Crashes by LIGHT_CONDITION
Daylight
Dark, roadway lighted
Dark, roadway...
(Blank)
Dusk
Dawn
Unknown
Dark, unknown lighting
0M
0.1M
0.2M
0.3M
0.4M
(Millions)
MAJOR_CAUSE
Count_of_Crashes
46596
Animal 608
Collision culvert 320
Collision Guardrail - face 101
Collision traffice barrier 3
Collision with bridge 255
Collision with bridge pier 105
Collision with curb 3613
Collision with ditch 638
Collision with mailbox 1
Collision with traffic sign 7
Collision with Tree 19
Collision with utility pole 16
Fire 5931
Filters
VIEW | CHART
Count_of_Crashes
(All)
LIGHT_CONDITION
(All)
Power View Fields
ACTIVE ALL
CRASH_DATA_T
CASENUMBER
CITYNAME
Count of CRASH_KEY
Count_of_Crashes
COUNTY_NUMBER
CRASH_DATE
CRASH_DATE_Full
CRASH_DAY
CRASH_KEY
Drag fields between areas below:
TILE BY


Excel Options
General
Formulas
Proofing
Save
Language
Advanced
Customize Ribbon
Quick Access Toolbar
Add-Ins
Trust Center
View and manage Microsoft Office Add-ins.
Add-ins
Name
Location
Type
Active Application Add-ins
Master Data Services Add-in for Excel C:\...aServices.XLAddIn.vsto|vstolocal COM Add-in
Power View C:\...n\AdHocReportingExcelClient.dll COM Add-in
SQLServer.DMClientXLAddIn C:\Windows\SysWOW64\mscoree.dll COM Add-in
SQLServer.DMXLAddIn C:\Windows\SysWOW64\mscoree.dll COM Add-in
Team Foundation Add-in C:\...ver\11.0\x86\TFSOfficeAdd-in.dll COM Add-in
Add-in: Master Data Services Add-in for Excel
Publisher: <None>
Compatibility: No compatibility information available
Location: C:\Program Files (x86)\Microsoft SQL Server\110\Master Data Services\Excel Add-In\Microsoft.MasterDataServices.XLAddIn.vsto|vstolocal
Description: Microsoft SQL Server 2012 MDS Add-in for Excel
Manage: COM Add-ins
Go...
OK
Cancel


COM Add-ins
Add-ins available:
Inquire
Microsoft Power Map for Excel
Microsoft Power Pivot for Excel
Microsoft Power View for Excel
OK
Cancel
Add...
Remove
Location: C:\Program Files (x86)\Microsoft Office\Root\Office16\DCF\NativeShim.dll
Load Behavior: Load at Startup


File
Home
Insert
Page Layout
Formulas
Data
Review
View
Power Pivot
Manage
Measures
KPIs
Add to Data Model
Update All
Detect
Settings
Data Model
Calculations
Tables
Relationships
A1
A
B
C
D
E
F
G
H
1
2
3
4
5


Power Pivot for Excel - Book1
File
Home
Design
Advanced
Paste
Get External Data
Refresh
PivotTable
Data Type :
Format :
Clear All Filters
Sort by Column
Find
AutoSum
Create KPI
Data View
Diagram View
Show Hidden
Calculation Area
Clipboard
Formatting
Sort and Filter
Find
Calculations
View

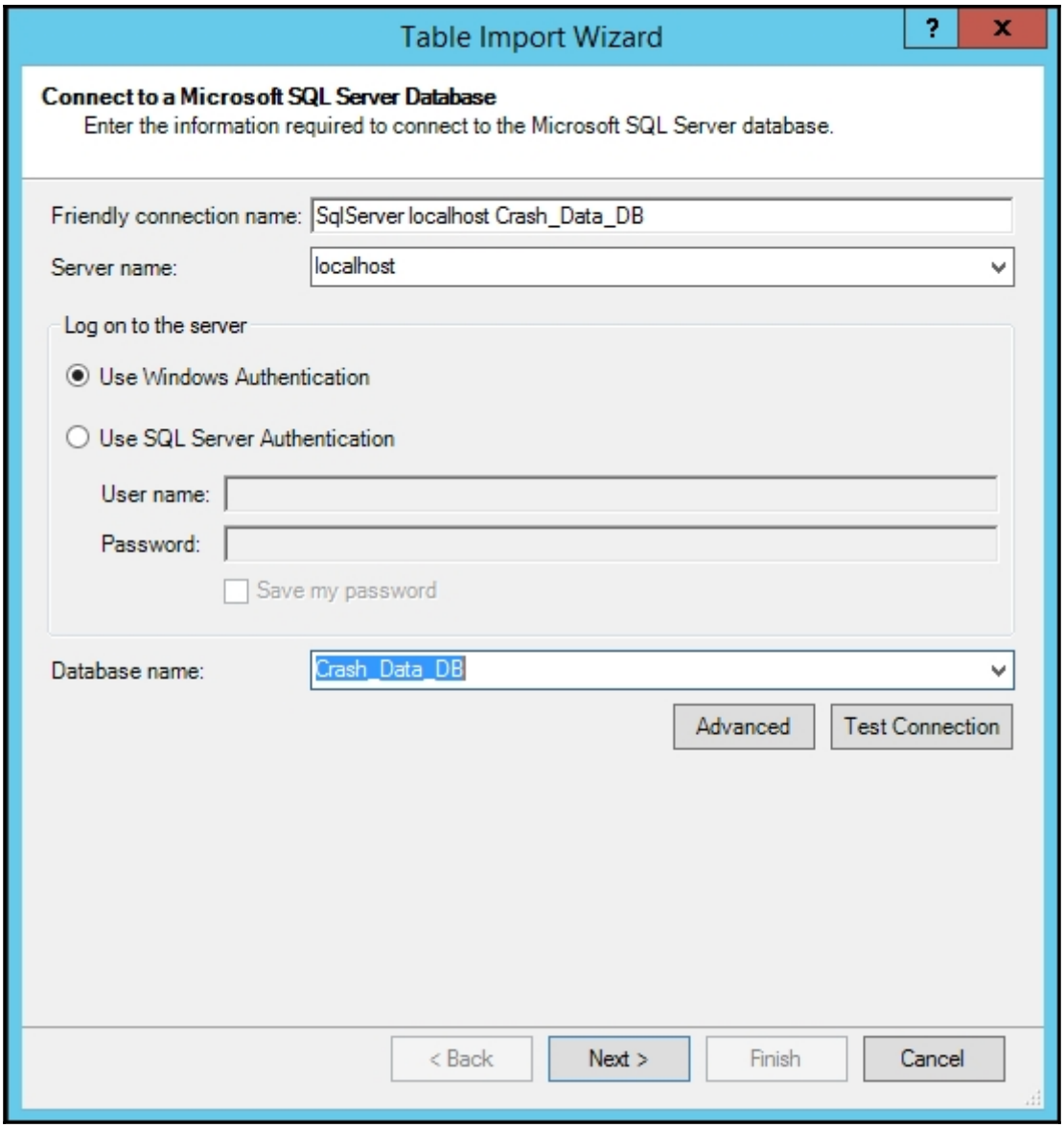


Table Import Wizard
?
X
Connect to a Microsoft SQL Server Database
Enter the information required to connect to the Microsoft SQL Server database.
Friendly connection name:
SqlServer localhost Crash_Data_DB
Server name:
localhost
Log on to the server
Use Windows Authentication
Use SQL Server Authentication
User name:
Password:
Save my password
Database name:
Crash_Data_DB
Advanced
Test Connection
< Back
Next >
Finish
Cancel

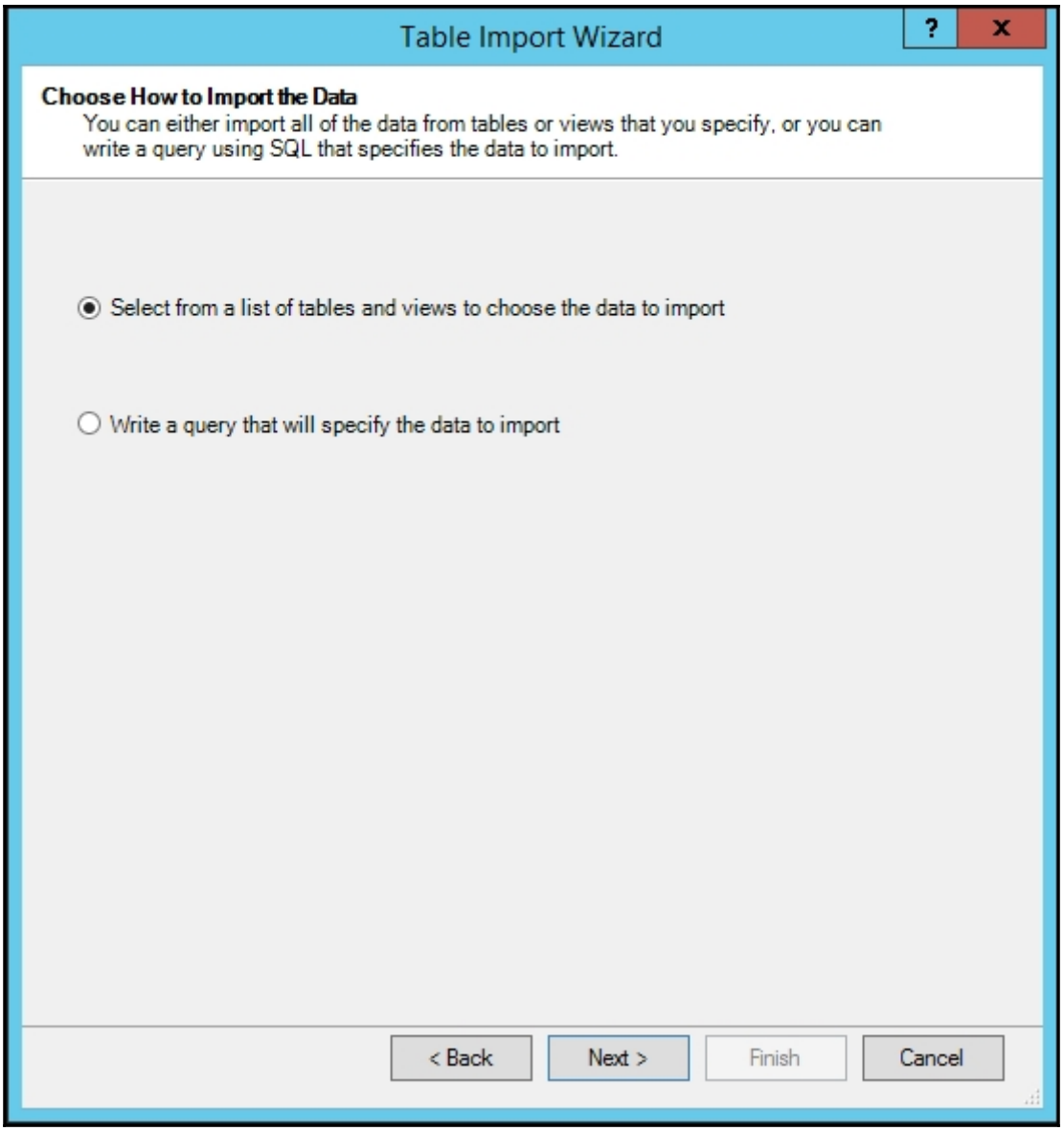
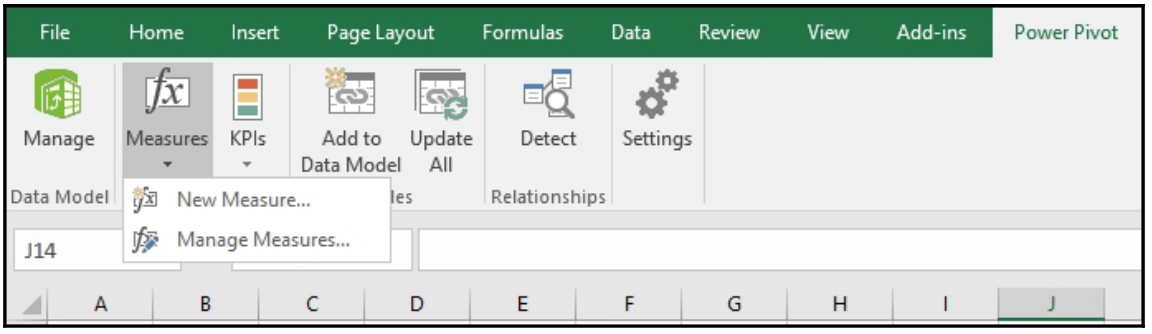
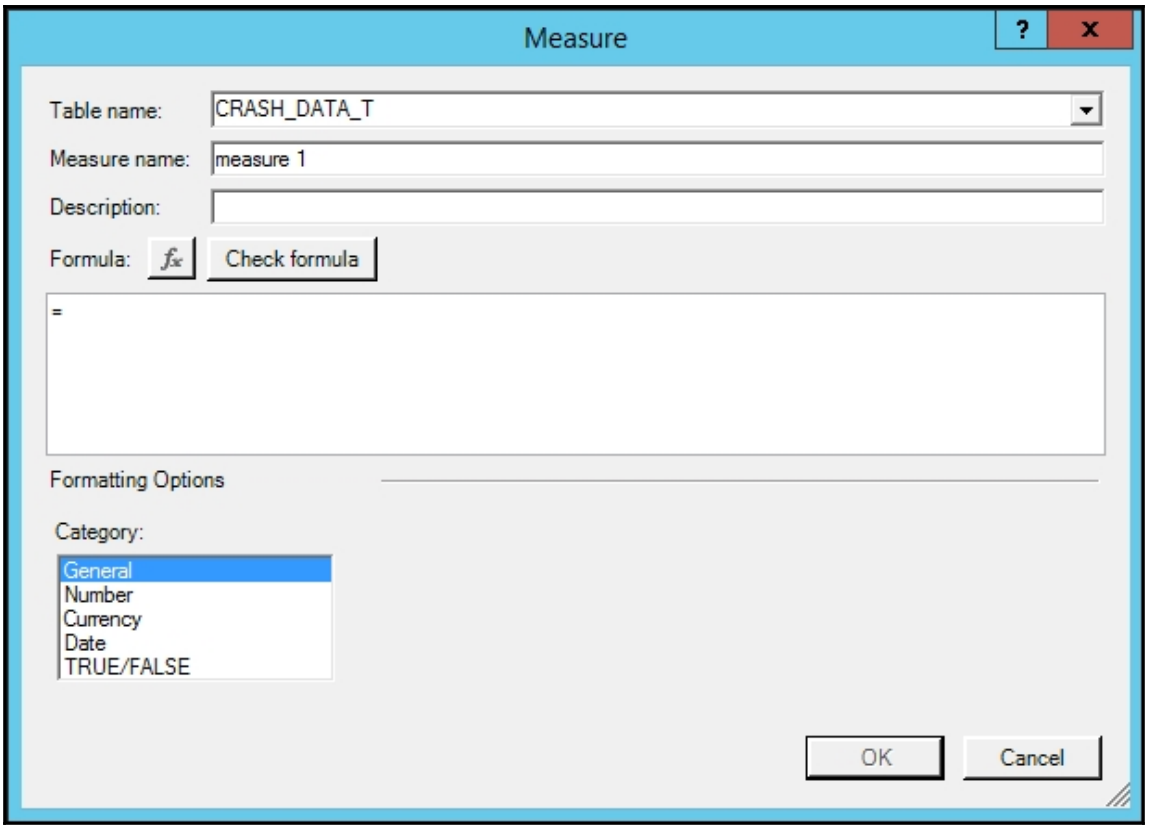


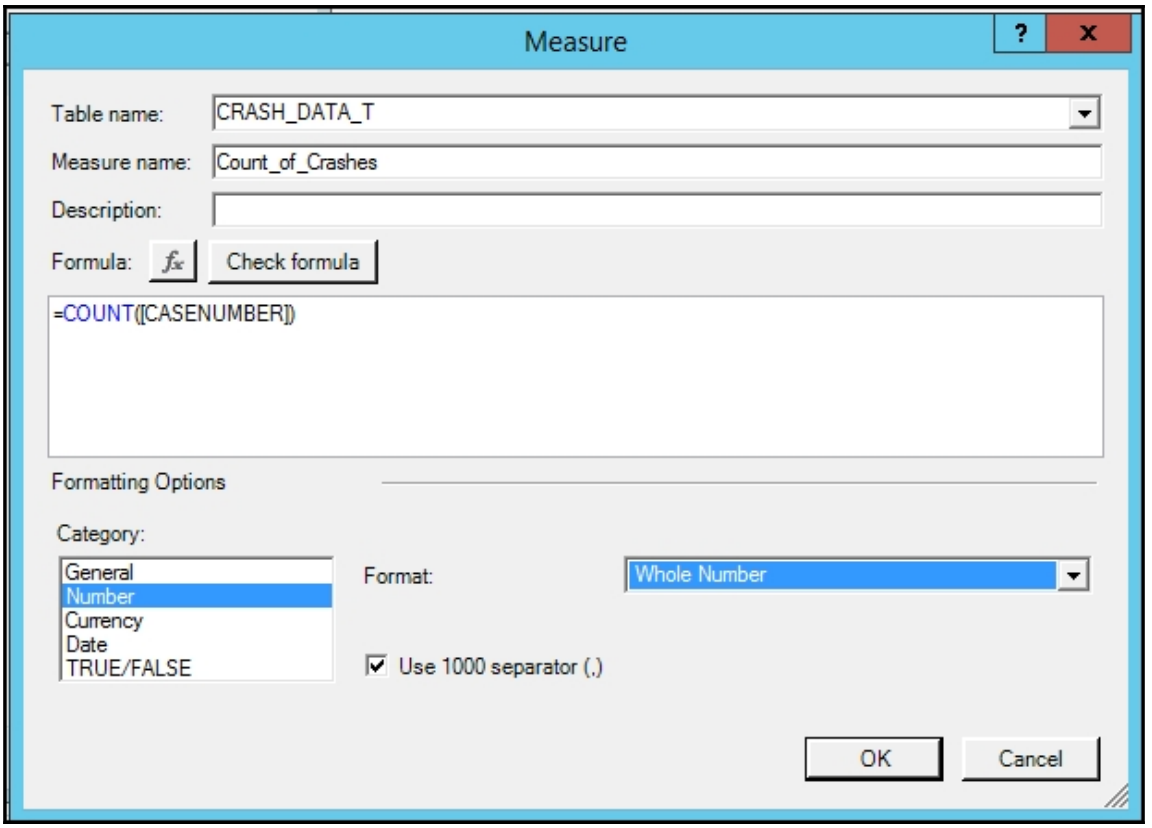
Table Import Wizard
?
X
Choose How to Import the Data
You can either import all of the data from tables or views that you specify, or you can write a query using SQL that specifies the data to import.
Select from a list of tables and views to choose the data to import
Write a query that will specify the data to import
< Back
Next >
Finish
Cancel

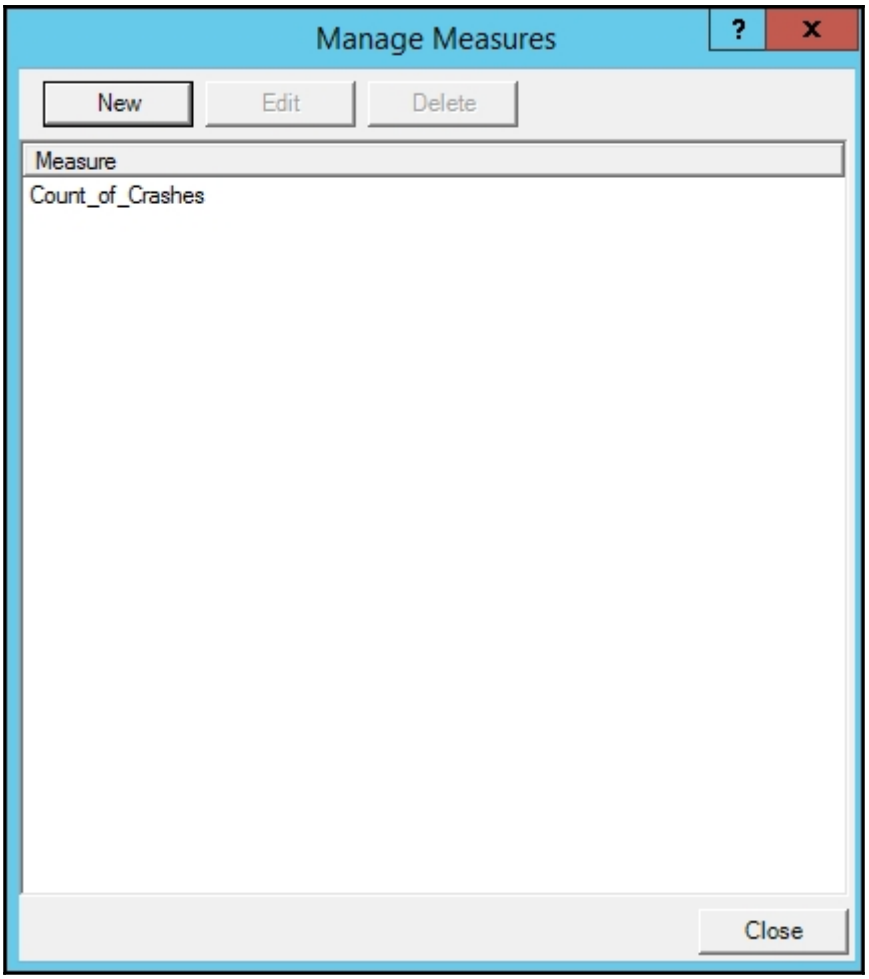
Chapter 9: DAX Syntax and Calculations

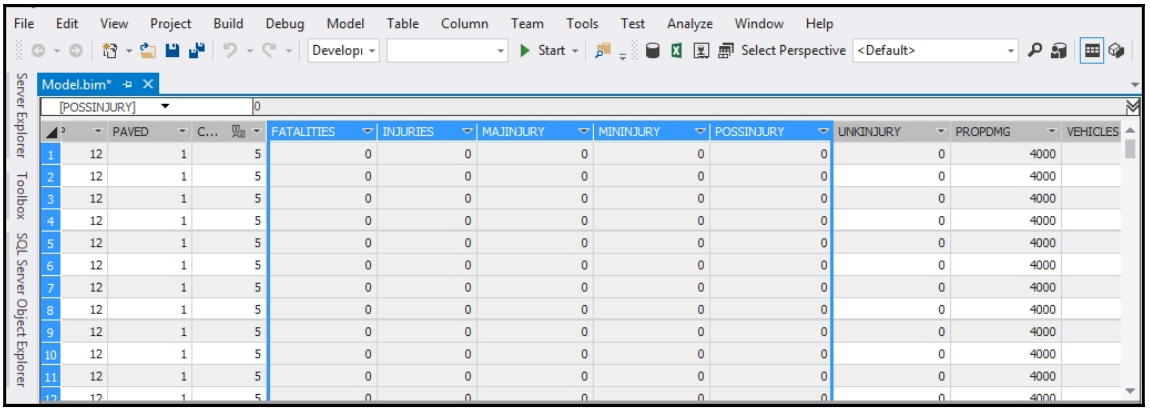
LIGHT_CONDITION	Count_of_Crashes
	45794
Dark, roadway lighted	71694
Dark, roadway not lighted	59830
Dark, unknown lighting	3524
Dawn	9818
Daylight	347299
Dusk	13157
Unknown	8111
Total	**559227**



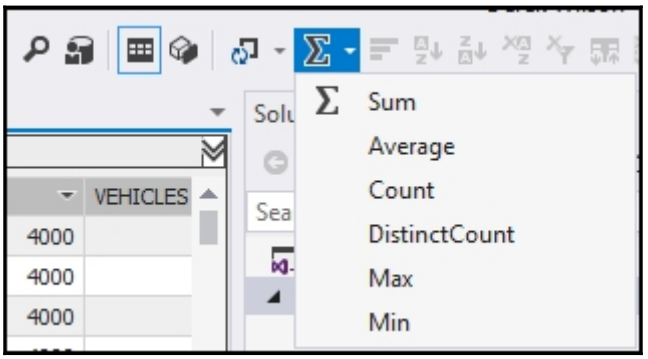

Measure
Table name:
CRASH_DATA_T
Measure name:
measure 1
Description:
Formula:
Check formula
=
Formatting Options
Category:
General
Number
Currency
Date
TRUE/FALSE
OK
Cancel

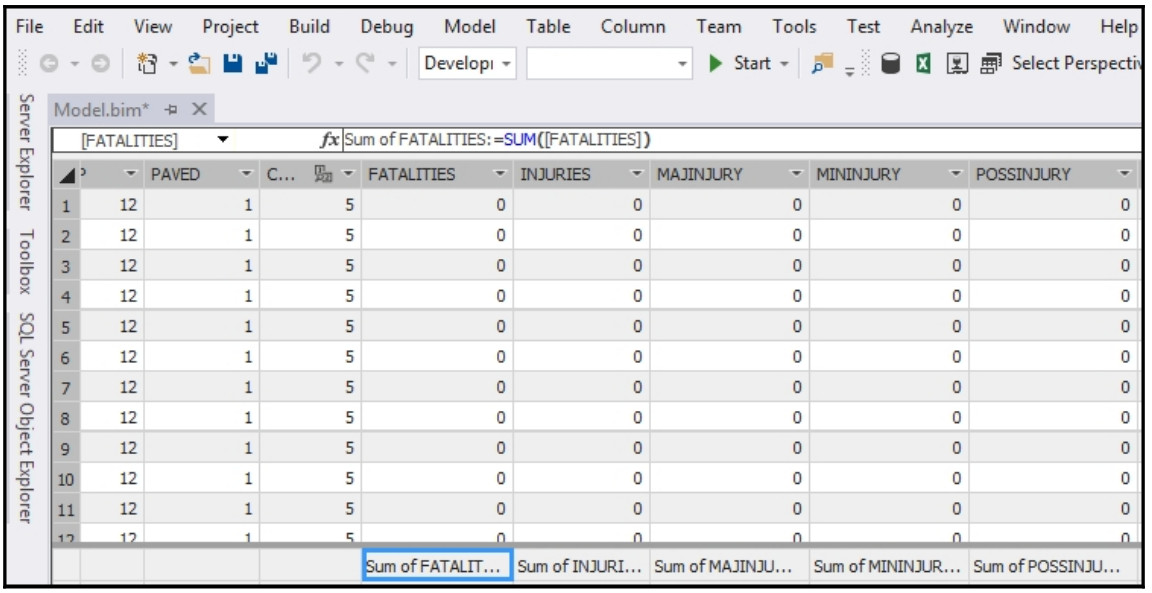

Measure
Table name:
CRASH_DATA_T
Measure name:
Count_of_Crashes
Description:
Formula:
Check formula
=COUNT([CASENUMBER])
Formatting Options
Category:
General
Number
Currency
Date
TRUE/FALSE
Format:
Whole Number
Use 1000 separator (,)
OK
Cancel

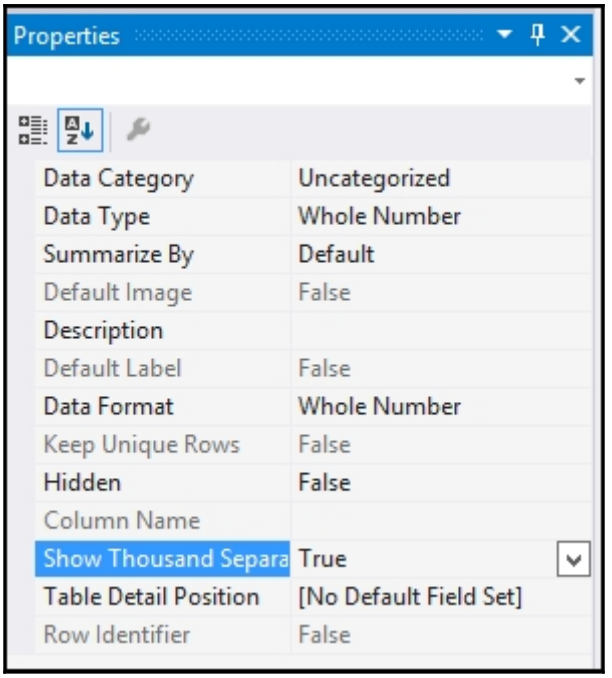

Manage Measures
?
X
New
Edit
Delete
Measure
Count_of_Crashes
Close

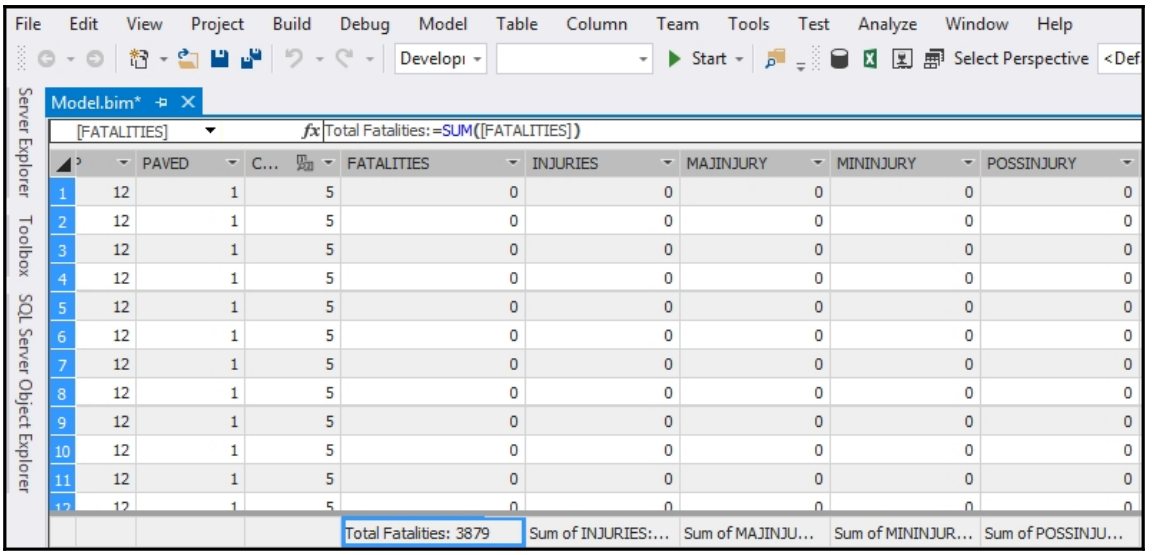


		PAVED	C...	FATALITIES	INJURIES	MAJINJURY	MININJURY	POSSINJURY	UNKINJURY	PROPDMG	VEHICLES
1	12	1	5	0	0	0	0	0	0	4000	
2	12	1	5	0	0	0	0	0	0	4000	
3	12	1	5	0	0	0	0	0	0	4000	
4	12	1	5	0	0	0	0	0	0	4000	
5	12	1	5	0	0	0	0	0	0	4000	
6	12	1	5	0	0	0	0	0	0	4000	
7	12	1	5	0	0	0	0	0	0	4000	
8	12	1	5	0	0	0	0	0	0	4000	
9	12	1	5	0	0	0	0	0	0	4000	
10	12	1	5	0	0	0	0	0	0	4000	
11	12	1	5	0	0	0	0	0	0	4000	
12	12	1	5	0	0	0	0	0	0	4000	

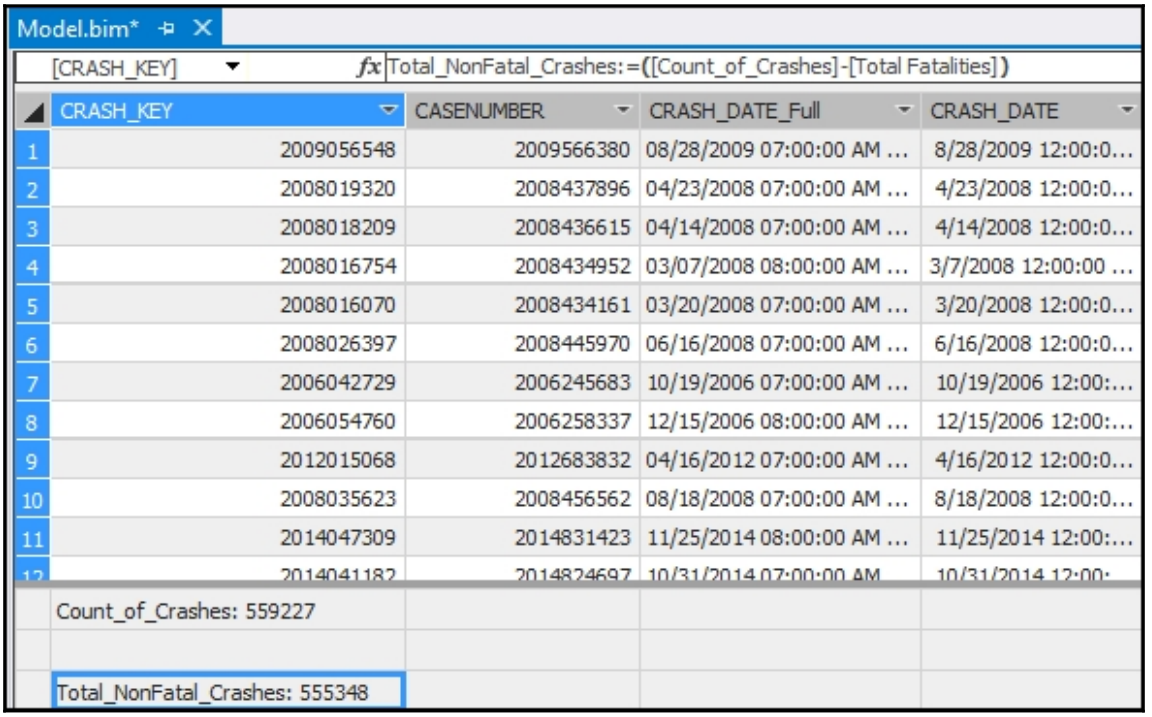



File Edit View Project Build Debug Model Table Column Team Tools Test Analyze Window Help
Start
Select Perspectiv
Server Explorer
Toolbox
SQL Server Object Explorer
Model.bim*
[FATALITIES]
Sum of FATALITIES:=SUM([FATALITIES])
PAVED
C...
FATALITIES
INJURIES
MAJINJURY
MININJURY
POSSINJURY
Sum of FATALIT...
Sum of INJURI...
Sum of MAJINJU...
Sum of MININJUR...
Sum of POSSINJU...

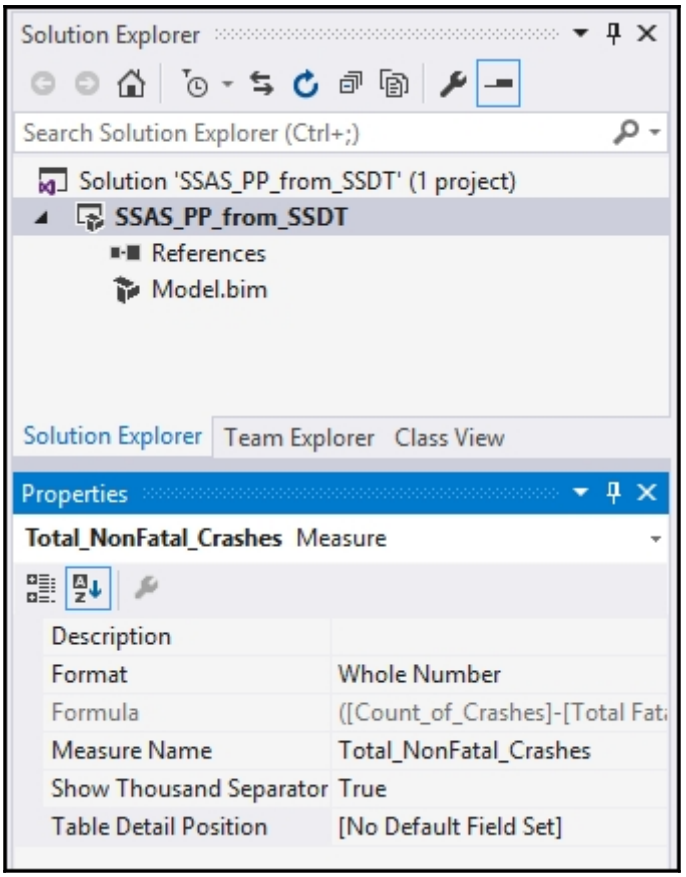

Properties
Data Category Uncategorized
Data Type Whole Number
Summarize By Default
Default Image False
Description
Default Label False
Data Format Whole Number
Keep Unique Rows False
Hidden False
Column Name
Show Thousand Separa True
Table Detail Position [No Default Field Set]
Row Identifier False

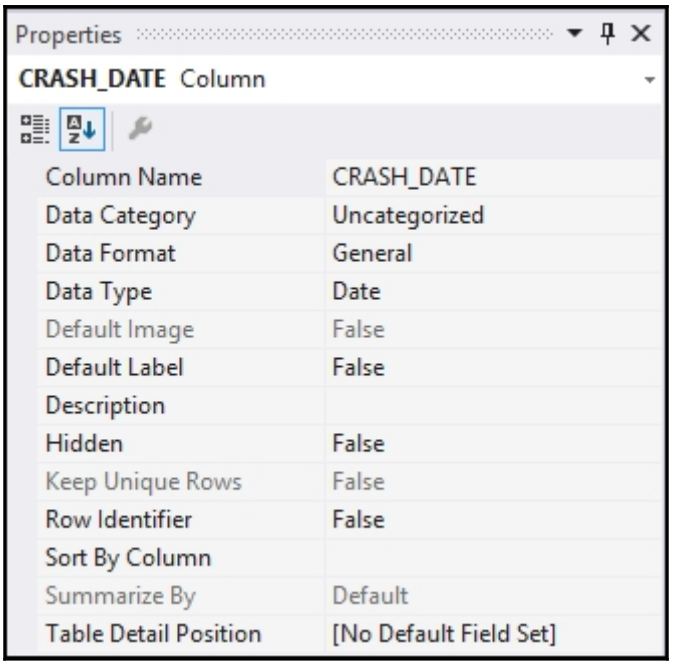


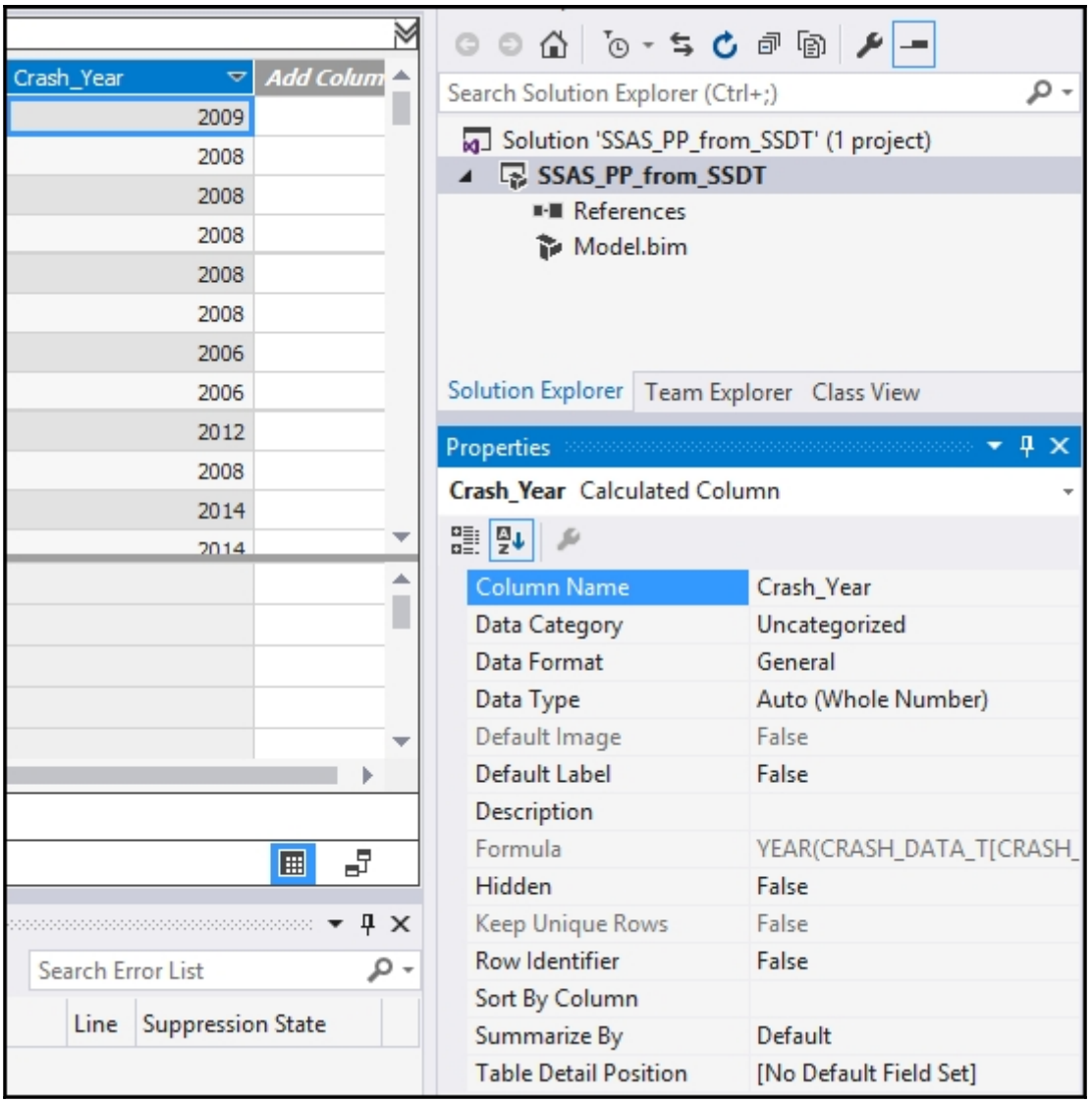
	PAVED	C...	FATALITIES	INJURIES	MAJINJURY	MININJURY	POSSINJURY
1	1	5	0	0	0	0	0
2	1	5	0	0	0	0	0
3	1	5	0	0	0	0	0
4	1	5	0	0	0	0	0
5	1	5	0	0	0	0	0
6	1	5	0	0	0	0	0
7	1	5	0	0	0	0	0
8	1	5	0	0	0	0	0
9	1	5	0	0	0	0	0
10	1	5	0	0	0	0	0
11	1	5	0	0	0	0	0
12	1	5	0	0	0	0	0
			Total Fatalities: 3879	Sum of INJURIES:...	Sum of MAJINJU...	Sum of MININJUR...	Sum of POSSINJU...

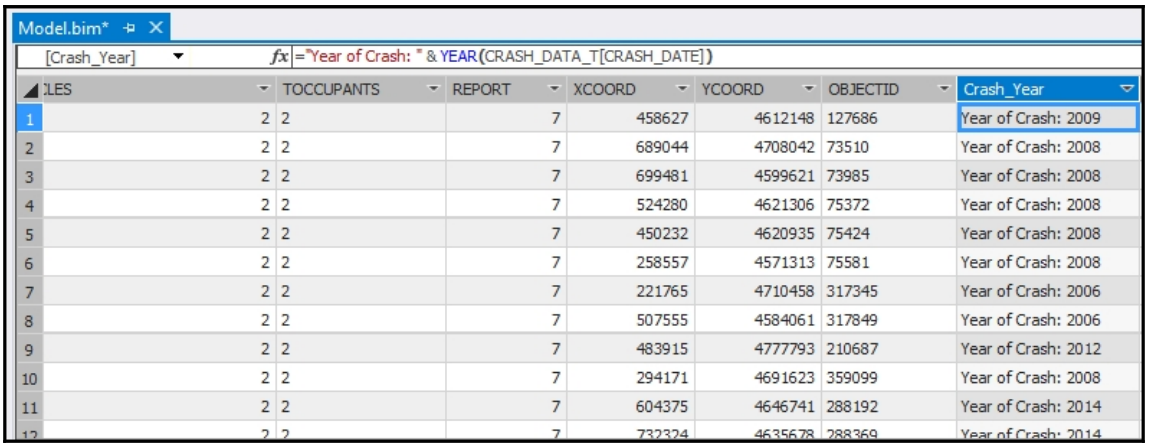


	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE
1	2009056548	2009566380	08/28/2009 07:00:00 AM ...	8/28/2009 12:00:0...
2	2008019320	2008437896	04/23/2008 07:00:00 AM ...	4/23/2008 12:00:0...
3	2008018209	2008436615	04/14/2008 07:00:00 AM ...	4/14/2008 12:00:0...
4	2008016754	2008434952	03/07/2008 08:00:00 AM ...	3/7/2008 12:00:00 ...
5	2008016070	2008434161	03/20/2008 07:00:00 AM ...	3/20/2008 12:00:0...
6	2008026397	2008445970	06/16/2008 07:00:00 AM ...	6/16/2008 12:00:0...
7	2006042729	2006245683	10/19/2006 07:00:00 AM ...	10/19/2006 12:00:...
8	2006054760	2006258337	12/15/2006 08:00:00 AM ...	12/15/2006 12:00:...
9	2012015068	2012683832	04/16/2012 07:00:00 AM ...	4/16/2012 12:00:0...
10	2008035623	2008456562	08/18/2008 07:00:00 AM ...	8/18/2008 12:00:0...
11	2014047309	2014831423	11/25/2014 08:00:00 AM ...	11/25/2014 12:00:...
12	2014041182	2014824697	10/31/2014 07:00:00 AM	10/31/2014 12:00:
	Count_of_Crashes: 559227			
	Total_NonFatal_Crashes: 555348			

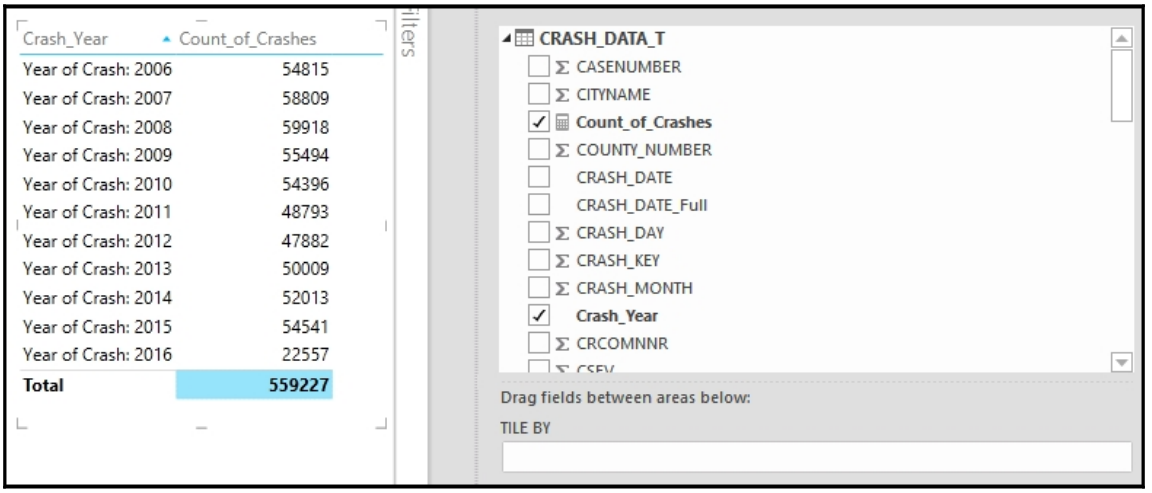

Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'SSAS_PP_from_SSDT' (1 project)
SSAS_PP_from_SSDT
References
Model.bim
Solution Explorer
Team Explorer
Class View
Properties
Total_NonFatal_Crashes Measure
Description
Format
Whole Number
Formula
([Count_of_Crashes]-[Total Fat
Measure Name
Total_NonFatal_Crashes
Show Thousand Separator
True
Table Detail Position
[No Default Field Set]


Properties
CRASH_DATE Column
Column Name CRASH_DATE
Data Category Uncategorized
Data Format General
Data Type Date
Default Image False
Default Label False
Description
Hidden False
Keep Unique Rows False
Row Identifier False
Sort By Column
Summarize By Default
Table Detail Position [No Default Field Set]


Crash_Year
Add Colum
2009
2008
2008
2008
2008
2008
2006
2006
2012
2008
2014
2014
Search Error List
Line
Suppression State
Search Solution Explorer (Ctrl+;)
Solution 'SSAS_PP_from_SSDT' (1 project)
SSAS_PP_from_SSDT
References
Model.bim
Solution Explorer
Team Explorer
Class View
Properties
Crash_Year Calculated Column
Column Name
Crash_Year
Data Category
Uncategorized
Data Format
General
Data Type
Auto (Whole Number)
Default Image
False
Default Label
False
Description
Formula
YEAR(CRASH_DATA_T[CRASH_
Hidden
False
Keep Unique Rows
False
Row Identifier
False
Sort By Column
Summarize By
Default
Table Detail Position
[No Default Field Set]



	LES	TOCCUPANTS	REPORT	XCOORD	YCOORD	OBJECTID	Crash_Year
1	2	2	7	458627	4612148	127686	Year of Crash: 2009
2	2	2	7	689044	4708042	73510	Year of Crash: 2008
3	2	2	7	699481	4599621	73985	Year of Crash: 2008
4	2	2	7	524280	4621306	75372	Year of Crash: 2008
5	2	2	7	450232	4620935	75424	Year of Crash: 2008
6	2	2	7	258557	4571313	75581	Year of Crash: 2008
7	2	2	7	221765	4710458	317345	Year of Crash: 2006
8	2	2	7	507555	4584061	317849	Year of Crash: 2006
9	2	2	7	483915	4777793	210687	Year of Crash: 2012
10	2	2	7	294171	4691623	359099	Year of Crash: 2008
11	2	2	7	604375	4646741	288192	Year of Crash: 2014
12	2	2	7	732324	4635678	288369	Year of Crash: 2014



Crash_Year	Count_of_Crashes
Year of Crash: 2006	54815
Year of Crash: 2007	58809
Year of Crash: 2008	59918
Year of Crash: 2009	55494
Year of Crash: 2010	54396
Year of Crash: 2011	48793
Year of Crash: 2012	47882
Year of Crash: 2013	50009
Year of Crash: 2014	52013
Year of Crash: 2015	54541
Year of Crash: 2016	22557
Total	**559227**

Model.bim*

[Fatality Flag] =IF([FATALITIES]>=1, "Was Fatal", "Non Fatal")

		VEHICLES	TOCCUPANTS	REPORT	XCOORD	YCOORD	OBJECTID	Fatality Flag
1	4000	2	2	7	458627	4612148	127686	Non Fatal
2	4000	2	2	7	689044	4708042	73510	Non Fatal
3	4000	2	2	7	699481	4599621	73985	Non Fatal
4	4000	2	2	7	524280	4621306	75372	Non Fatal
5	4000	2	2	7	450232	4620935	75424	Non Fatal
6	4000	2	2	7	258557	4571313	75581	Non Fatal
7	4000	2	2	7	221765	4710458	317345	Non Fatal
8	4000	2	2	7	507555	4584061	317849	Non Fatal
9	4000	2	2	7	483915	4777793	210687	Non Fatal
10	4000	2	2	7	294171	4691623	359099	Non Fatal

Model.bim

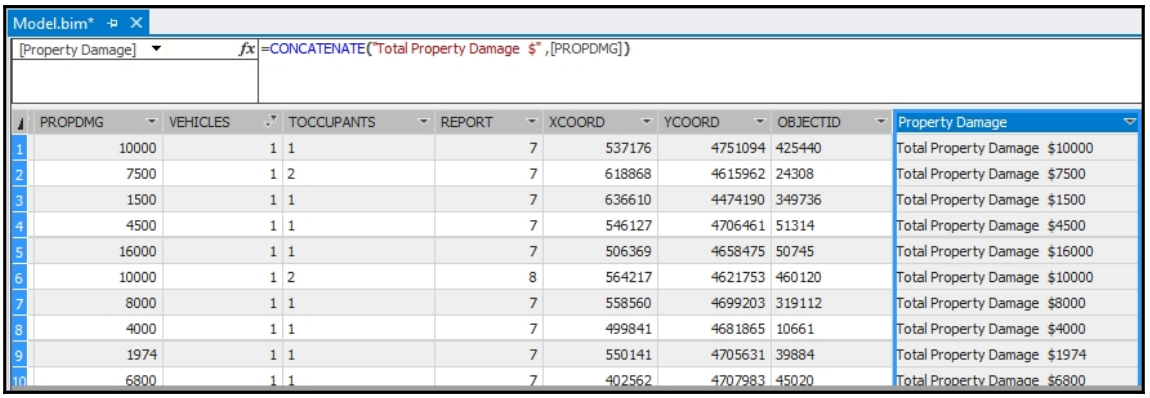
[Fatality Group] =IF(And([FATALITIES]>=1, [VEHICLES]=1), "Single Vehicle Fatality", "Multiple Vehicle Fatality")

	PROPDMG	VEHICLES	TOCCUPANTS	REPORT	XCOORD	YCOORD	OBJECTID	Fatality Group
1	4000	2	2	7	458627	4612148	127686	Multiple Vehicle Fatality
2	4000	2	2	7	689044	4708042	73510	Multiple Vehicle Fatality
3	4000	2	2	7	699481	4599621	73985	Multiple Vehicle Fatality
4	4000	2	2	7	524280	4621306	75372	Multiple Vehicle Fatality
5	4000	2	2	7	450232	4620935	75424	Multiple Vehicle Fatality
6	4000	2	2	7	258557	4571313	75581	Multiple Vehicle Fatality
7	4000	2	2	7	221765	4710458	317345	Multiple Vehicle Fatality
8	4000	2	2	7	507555	4584061	317849	Multiple Vehicle Fatality
9	4000	2	2	7	483915	4777793	210687	Multiple Vehicle Fatality
10	4000	2	2	7	294171	4691623	359099	Multiple Vehicle Fatality

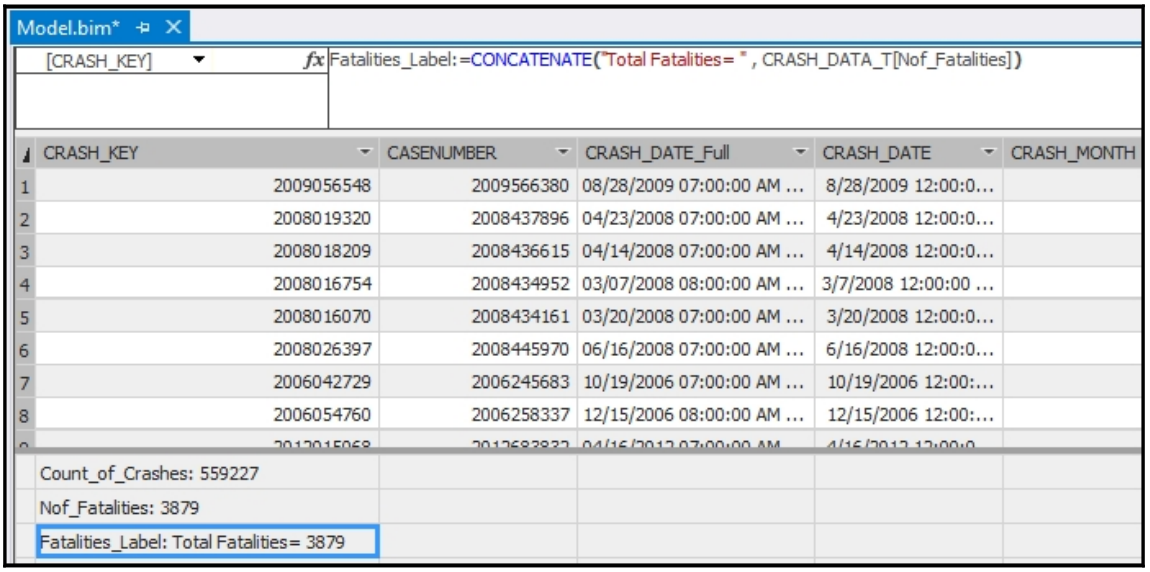
Model.bim

[Paved Condition] =SWITCH([PAVED], 1, "Paved", 2, "Unpaved", 99, "Unknown")

		PROPDMG	VEHICLES	TOCCUPANTS	REPORT	XCOORD	YCOORD	OBJECTID	Paved Condition
1	0	10000	1	1	7	537176	4751094	425440	Paved
2	0	7500	1	2	7	618868	4615962	24308	Paved
3	0	1500	1	1	7	636610	4474190	349736	Paved
4	0	4500	1	1	7	546127	4706461	51314	Paved
5	0	16000	1	1	7	506369	4658475	50745	Unpaved
6	0	10000	1	2	8	564217	4621753	460120	Paved
7	0	8000	1	1	7	558560	4699203	319112	Paved
8	0	4000	1	1	7	499841	4681865	10661	Paved
9	0	1974	1	1	7	550141	4705631	39884	Paved
10	0	6800	1	1	7	402562	4707983	45020	Paved

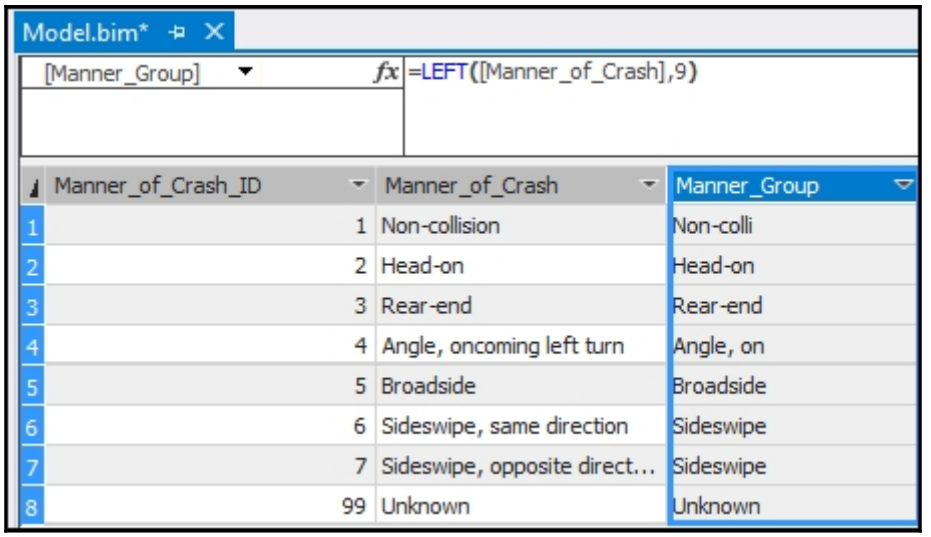


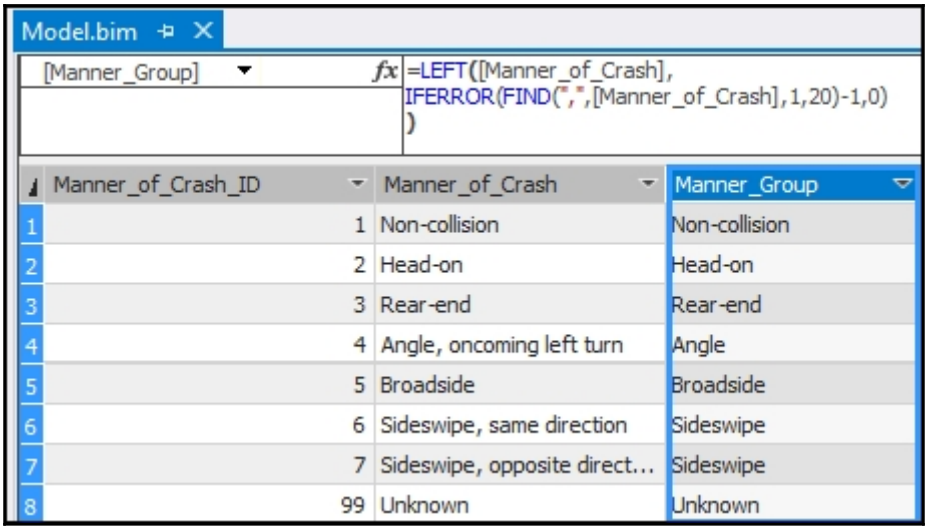
	PROPDMG	VEHICLES	TOCCUPANTS	REPORT	XCOORD	YCOORD	OBJECTID	Property Damage
1	10000	1	1	7	537176	4751094	425440	Total Property Damage $10000
2	7500	1	2	7	618868	4615962	24308	Total Property Damage $7500
3	1500	1	1	7	636610	4474190	349736	Total Property Damage $1500
4	4500	1	1	7	546127	4706461	51314	Total Property Damage $4500
5	16000	1	1	7	506369	4658475	50745	Total Property Damage $16000
6	10000	1	2	8	564217	4621753	460120	Total Property Damage $10000
7	8000	1	1	7	558560	4699203	319112	Total Property Damage $8000
8	4000	1	1	7	499841	4681865	10661	Total Property Damage $4000
9	1974	1	1	7	550141	4705631	39884	Total Property Damage $1974
10	6800	1	1	7	402562	4707983	45020	Total Property Damage $6800



	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONTH
1	2009056548	2009566380	08/28/2009 07:00:00 AM ...	8/28/2009 12:00:0...	
2	2008019320	2008437896	04/23/2008 07:00:00 AM ...	4/23/2008 12:00:0...	
3	2008018209	2008436615	04/14/2008 07:00:00 AM ...	4/14/2008 12:00:0...	
4	2008016754	2008434952	03/07/2008 08:00:00 AM ...	3/7/2008 12:00:00 ...	
5	2008016070	2008434161	03/20/2008 07:00:00 AM ...	3/20/2008 12:00:0...	
6	2008026397	2008445970	06/16/2008 07:00:00 AM ...	6/16/2008 12:00:0...	
7	2006042729	2006245683	10/19/2006 07:00:00 AM ...	10/19/2006 12:00:...	
8	2006054760	2006258337	12/15/2006 08:00:00 AM ...	12/15/2006 12:00:...	

Count_of_Crashes: 559227	
Nof_Fatalities: 3879	
Fatalities_Label: Total Fatalities= 3879	


Model.bim*
[Manner_Group]
fx
=LEFT([Manner_of_Crash],9)
Manner_of_Crash_ID
Manner_of_Crash
Manner_Group
1 1 Non-collision Non-colli
2 2 Head-on Head-on
3 3 Rear-end Rear-end
4 4 Angle, oncoming left turn Angle, on
5 5 Broadside Broadside
6 6 Sideswipe, same direction Sideswipe
7 7 Sideswipe, opposite direct... Sideswipe
8 99 Unknown Unknown


Model.bim
[Manner_Group]
fx
=LEFT([Manner_of_Crash],
IFERROR(FIND(",",[Manner_of_Crash],1,20)-1,0)
)
Manner_of_Crash_ID
Manner_of_Crash
Manner_Group
1 1 Non-collision Non-collision
2 2 Head-on Head-on
3 3 Rear-end Rear-end
4 4 Angle, oncoming left turn Angle
5 5 Broadside Broadside
6 6 Sideswipe, same direction Sideswipe
7 7 Sideswipe, opposite direct... Sideswipe
8 99 Unknown Unknown

Model.bim*

```
=RELATED(LIGHT_T[LIGHT_CONDITION])
```

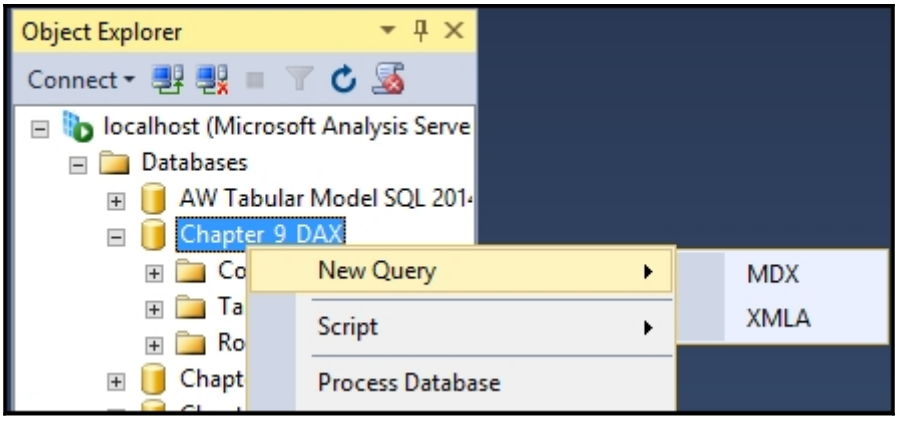
	TS	REPORT	XCOORD	YCOORD	OBJECTID	Light_Condition
1		7	537176	4751094	425440	Daylight
2		7	618868	4615962	24308	Daylight
3		7	636610	4474190	349736	Dark, roadway lighted
4		7	546127	4706461	51314	Dark, roadway lighted
5		7	506369	4658475	50745	Dark, roadway not lig...
6		8	564217	4621753	460120	Daylight
7		7	558560	4699203	319112	Dark, roadway not lig...
8		7	499841	4681865	10661	Daylight
9		7	550141	4705631	39884	Dark, roadway lighted

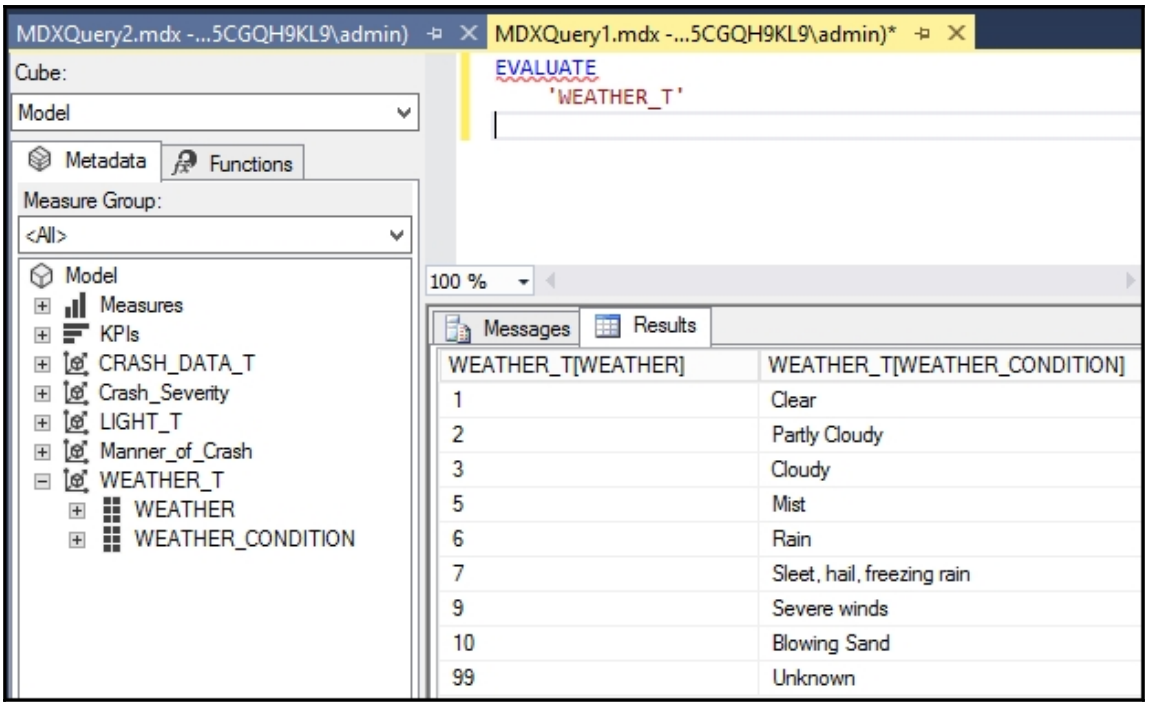
Light_Condition	Count_of_Crashes
	45794
Dark, roadway lighted	71694
Dark, roadway not lighted	59830
Dark, unknown lighting	3524
Dawn	9818
Daylight	347299
Dusk	13157
Unknown	8111
Total	**559227**

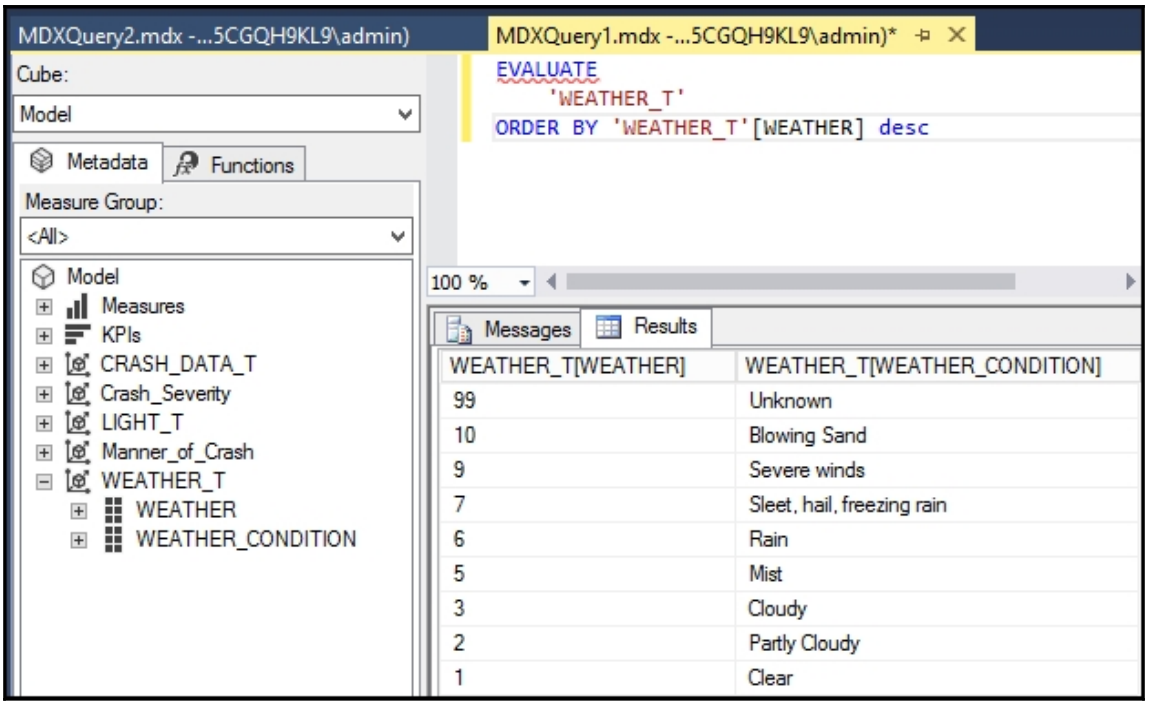
Model.bim*

```
=COUNTROWS( RELATEDTABLE(CRASH_DATA_T) )
```

	Manner_of_Crash_ID	Manner_of_Crash	Manner_Group	Nof_Events
1	1	Non-collision	Non-collision	161423
2	2	Head-on	Head-on	12442
3	3	Rear-end	Rear-end	131565
4	4	Angle, oncoming left turn	Angle	32494
5	5	Broadside	Broadside	103879
6	6	Sideswipe, same direction	Sideswipe	55229
7	7	Sideswipe, opposite direct…	Sideswipe	12459
8	99	Unknown	Unknown	12676




MDXQuery2.mdx -...5CGQH9KL9\admin)
MDXQuery1.mdx -...5CGQH9KL9\admin)*
Cube:
Model
Metadata
Functions
Measure Group:
<All>
Model
Measures
KPIs
CRASH_DATA_T
Crash_Severity
LIGHT_T
Manner_of_Crash
WEATHER_T
WEATHER
WEATHER_CONDITION
EVALUATE
'WEATHER_T'
100 %
Messages
Results
WEATHER_T[WEATHER]
WEATHER_T[WEATHER_CONDITION]
1
Clear
2
Partly Cloudy
3
Cloudy
5
Mist
6
Rain
7
Sleet, hail, freezing rain
9
Severe winds
10
Blowing Sand
99
Unknown


MDXQuery2.mdx -...5CGQH9KL9\admin)
MDXQuery1.mdx -...5CGQH9KL9\admin)*
Cube:
Model
Metadata
Functions
Measure Group:
<All>
Model
Measures
KPIs
CRASH_DATA_T
Crash_Severity
LIGHT_T
Manner_of_Crash
WEATHER_T
WEATHER
WEATHER_CONDITION
EVALUATE
'WEATHER_T'
ORDER BY 'WEATHER_T'[WEATHER] desc
100 %
Messages
Results
WEATHER_T[WEATHER]
WEATHER_T[WEATHER_CONDITION]
99
Unknown
10
Blowing Sand
9
Severe winds
7
Sleet, hail, freezing rain
6
Rain
5
Mist
3
Cloudy
2
Partly Cloudy
1
Clear

Model.bim*

[CRASH_KEY] fx Total_Fatalities_GT2_MajorInjuries:=SUMX(filter(CRASH_DATA_T, CRASH_DATA_T[MAJINJURY]>2),CRASH_DATA_T[FATALITIES])

	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE
1	2009056548	2009566380	08/28/2009 07:00:00 AM ...	8/28/2009 12:00:0...
2	2008019320	2008437896	04/23/2008 07:00:00 AM ...	4/23/2008 12:00:0...
3	2008018209	2008436615	04/14/2008 07:00:00 AM ...	4/14/2008 12:00:0...
4	2008016754	2008434952	03/07/2008 08:00:00 AM ...	3/7/2008 12:00:00 ...
5	2008016070	2008434161	03/20/2008 07:00:00 AM ...	3/20/2008 12:00:0...
6	2008026397	2008445970	06/16/2008 07:00:00 AM ...	6/16/2008 12:00:0...
7	2006042729	2006245683	10/19/2006 07:00:00 AM ...	10/19/2006 12:00:...
8	2006054760	2006258337	12/15/2006 08:00:00 AM ...	12/15/2006 12:00:...
9	2012015068	2012683832	04/16/2012 07:00:00 AM ...	4/16/2012 12:00:0...

Count_of_Crashes: 559227

Nof_Fatalities: 3879

Total_Fatalities_GT2_MajorInjuries: 88

Model.bim*

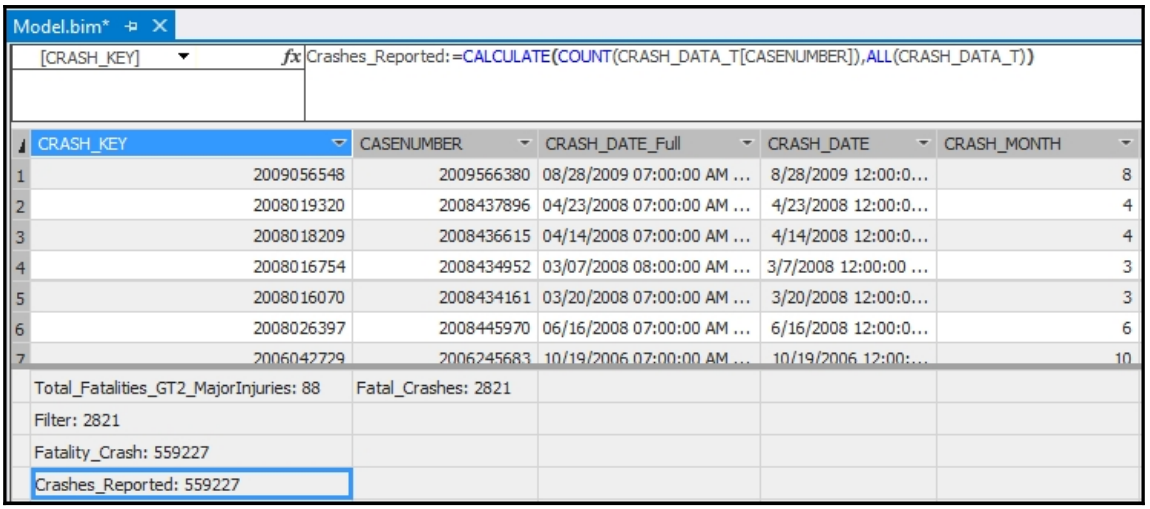
[CASENUMBER] fx Fatal_Crashes:=SUMX(FIlter(CRASH_DATA_T, RELATED(Crash_Severity[Severity_Descr])="fatal"), CRASH_DATA_T[INJURIES])

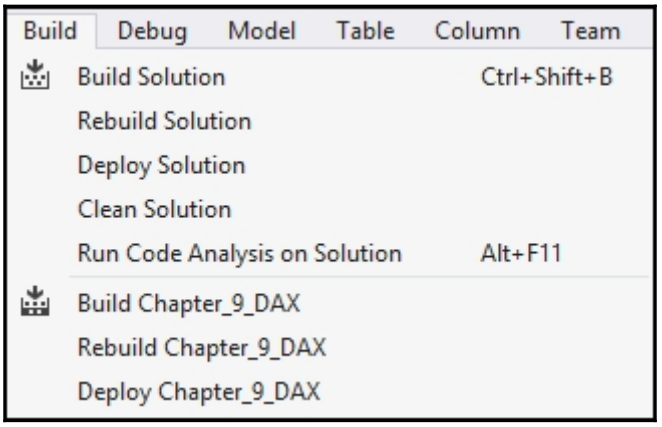
	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONT
1	2009056548	2009566380	08/28/2009 07:00:00 AM ...	8/28/2009 12:00:0...	
2	2008019320	2008437896	04/23/2008 07:00:00 AM ...	4/23/2008 12:00:0...	
3	2008018209	2008436615	04/14/2008 07:00:00 AM ...	4/14/2008 12:00:0...	
4	2008016754	2008434952	03/07/2008 08:00:00 AM ...	3/7/2008 12:00:00 ...	
5	2008016070	2008434161	03/20/2008 07:00:00 AM ...	3/20/2008 12:00:0...	
6	2008026397	2008445970	06/16/2008 07:00:00 AM ...	6/16/2008 12:00:0...	
7	2006042729	2006245683	10/19/2006 07:00:00 AM ...	10/19/2006 12:00:...	
8	2006054760	2006258337	12/15/2006 08:00:00 AM ...	12/15/2006 12:00:...	
9	2012015068	2012683832	04/16/2012 07:00:00 AM ...	4/16/2012 12:00:0...	

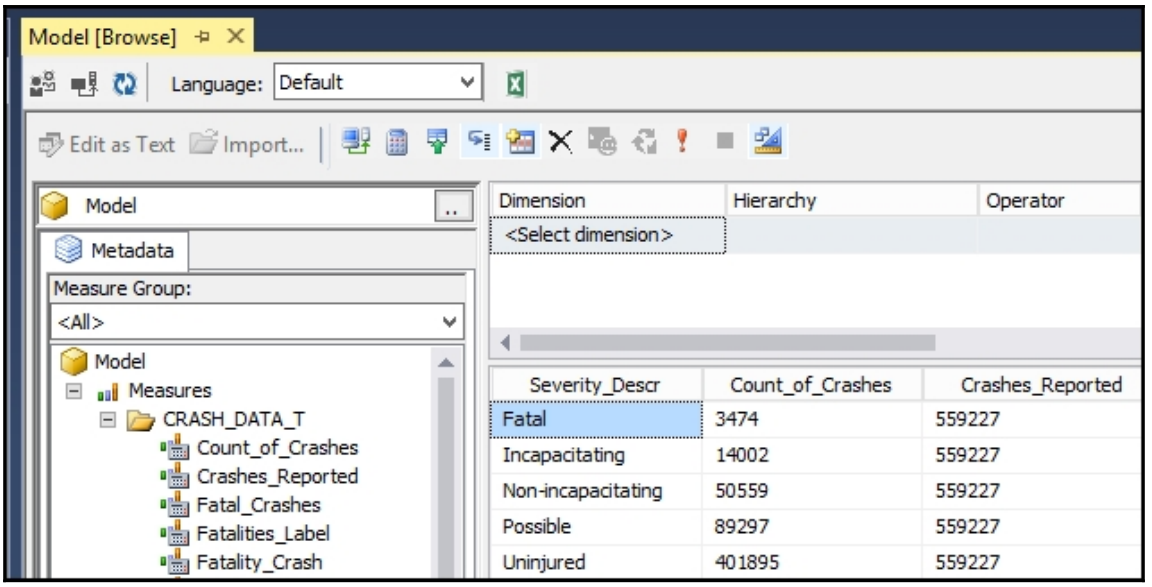
Count_of_Crashes: 559227

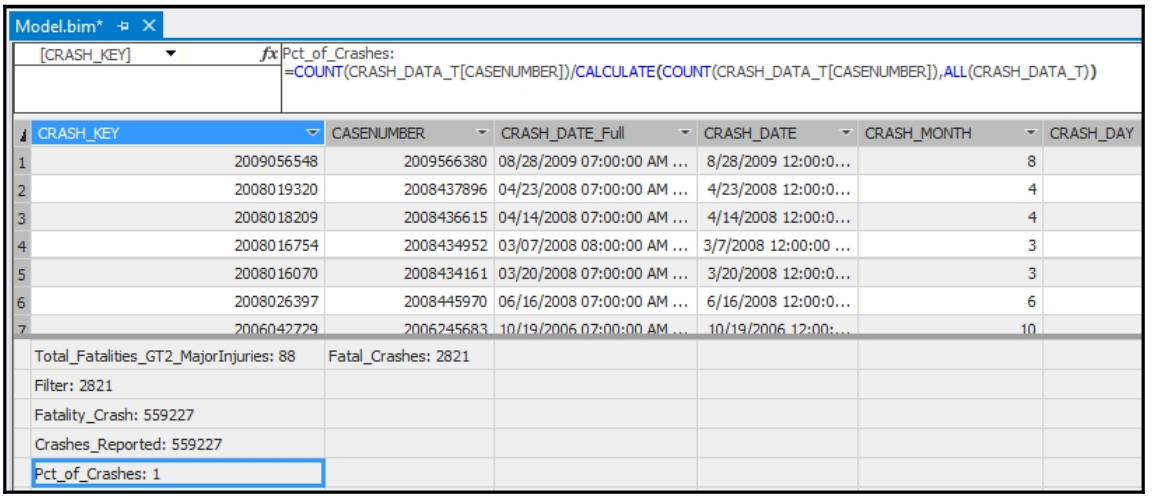
Nof_Fatalities: 3879

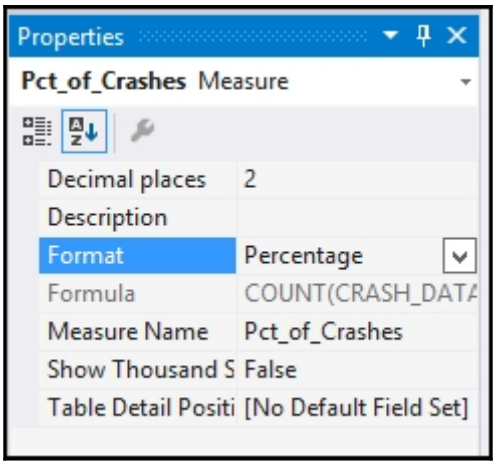
Total_Fatalities_GT2_MajorInjuries: 88 Fatal_Crashes: 2821

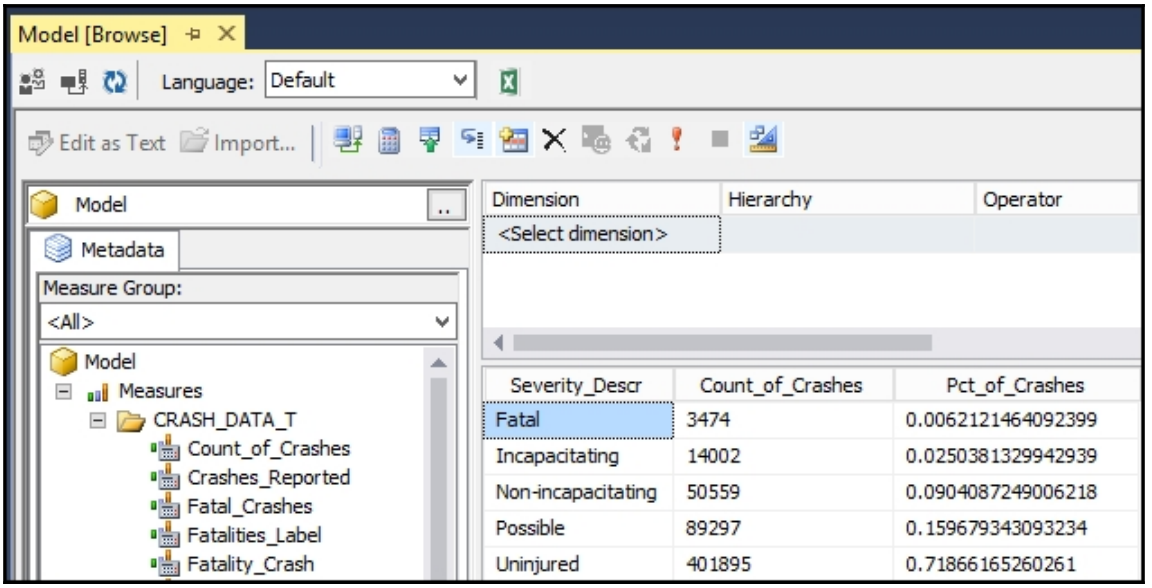

Model.bim*
[CRASH_KEY]
fx
Crashes_Reported:=CALCULATE(COUNT(CRASH_DATA_T[CASENUMBER]),ALL(CRASH_DATA_T))
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
1 2009056548 2009566380 08/28/2009 07:00:00 AM ... 8/28/2009 12:00:0... 8
2 2008019320 2008437896 04/23/2008 07:00:00 AM ... 4/23/2008 12:00:0... 4
3 2008018209 2008436615 04/14/2008 07:00:00 AM ... 4/14/2008 12:00:0... 4
4 2008016754 2008434952 03/07/2008 08:00:00 AM ... 3/7/2008 12:00:00 ... 3
5 2008016070 2008434161 03/20/2008 07:00:00 AM ... 3/20/2008 12:00:0... 3
6 2008026397 2008445970 06/16/2008 07:00:00 AM ... 6/16/2008 12:00:0... 6
7 2006042729 2006245683 10/19/2006 07:00:00 AM ... 10/19/2006 12:00:... 10
Total_Fatalities_GT2_MajorInjuries: 88
Fatal_Crashes: 2821
Filter: 2821
Fatality_Crash: 559227
Crashes_Reported: 559227

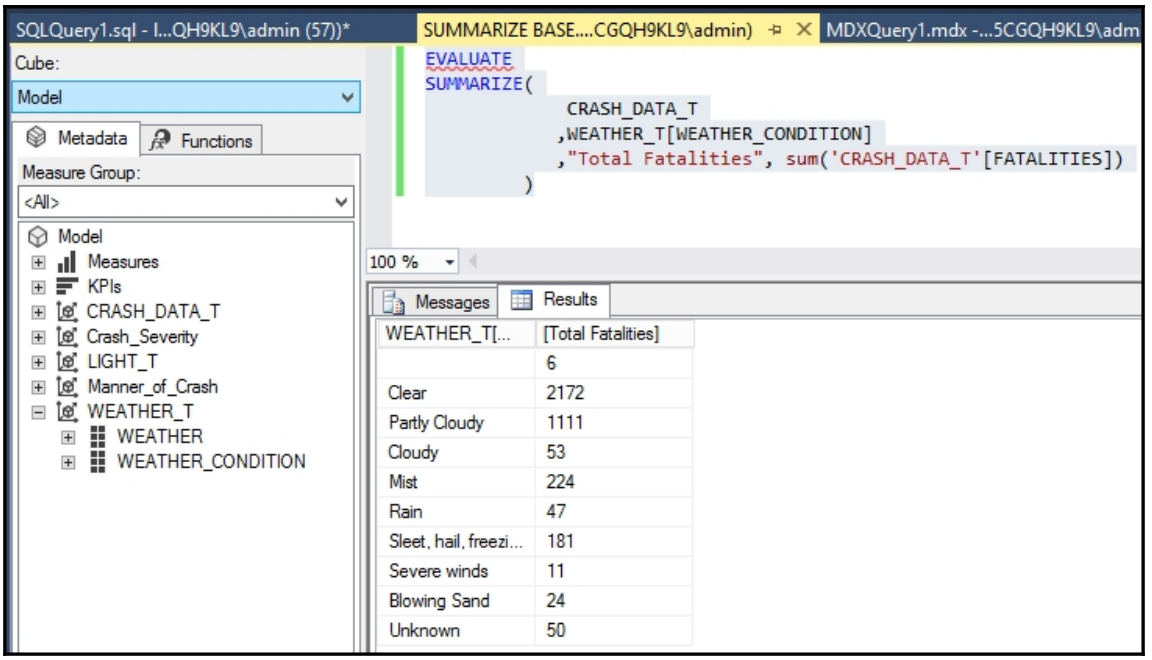

Build
Debug
Model
Table
Column
Team
Build Solution Ctrl+Shift+B
Rebuild Solution
Deploy Solution
Clean Solution
Run Code Analysis on Solution Alt+F11
Build Chapter_9_DAX
Rebuild Chapter_9_DAX
Deploy Chapter_9_DAX

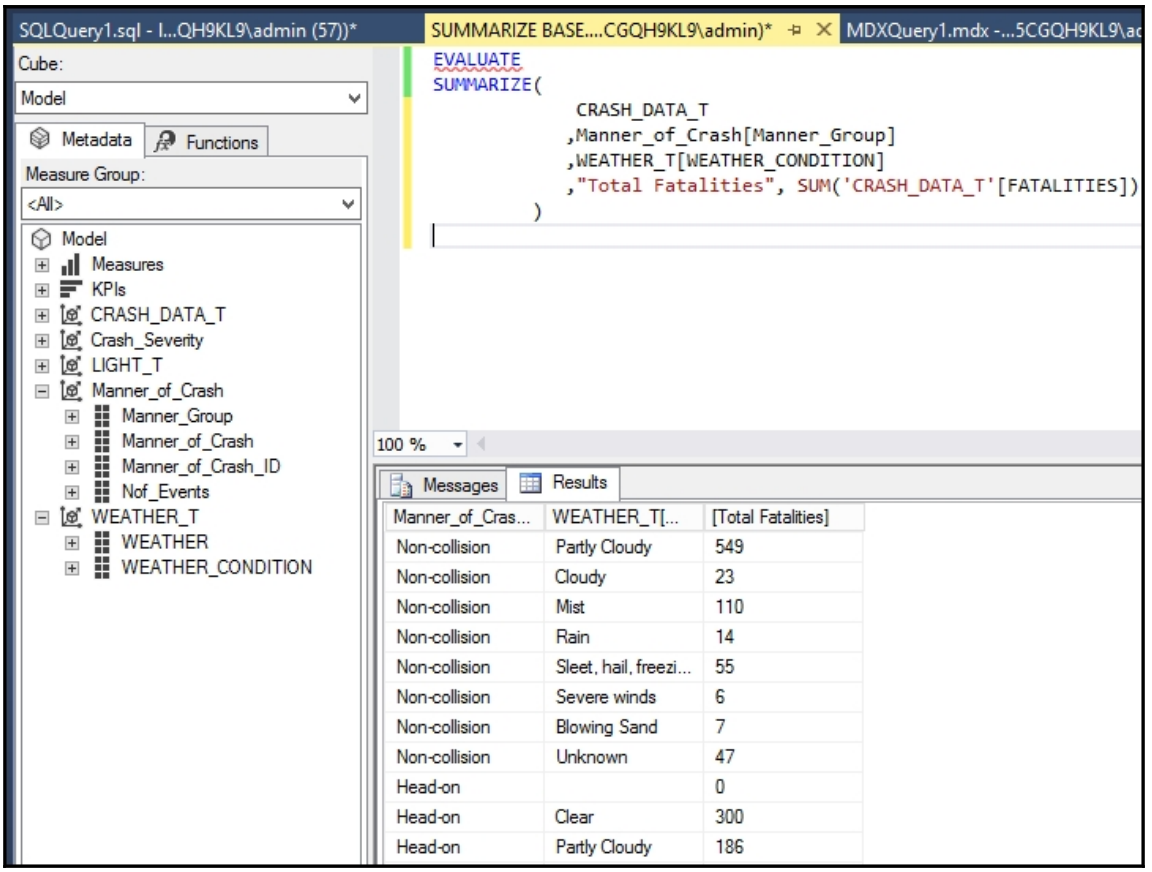

Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Model
Measures
CRASH_DATA_T
Count_of_Crashes
Crashes_Reported
Fatal_Crashes
Fatalities_Label
Fatality_Crash
Dimension
Hierarchy
Operator
<Select dimension>
Severity_Descr
Count_of_Crashes
Crashes_Reported
Fatal
3474
559227
Incapacitating
14002
559227
Non-incapacitating
50559
559227
Possible
89297
559227
Uninjured
401895
559227


Model.bim*
[CRASH_KEY]
Pct_of_Crashes:
=COUNT(CRASH_DATA_T[CASENUMBER])/CALCULATE(COUNT(CRASH_DATA_T[CASENUMBER]),ALL(CRASH_DATA_T))
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
CRASH_DAY
1 2009056548 2009566380 08/28/2009 07:00:00 AM ... 8/28/2009 12:00:0... 8
2 2008019320 2008437896 04/23/2008 07:00:00 AM ... 4/23/2008 12:00:0... 4
3 2008018209 2008436615 04/14/2008 07:00:00 AM ... 4/14/2008 12:00:0... 4
4 2008016754 2008434952 03/07/2008 08:00:00 AM ... 3/7/2008 12:00:00 ... 3
5 2008016070 2008434161 03/20/2008 07:00:00 AM ... 3/20/2008 12:00:0... 3
6 2008026397 2008445970 06/16/2008 07:00:00 AM ... 6/16/2008 12:00:0... 6
7 2006042729 2006245683 10/19/2006 07:00:00 AM ... 10/19/2006 12:00:... 10
Total_Fatalities_GT2_MajorInjuries: 88
Fatal_Crashes: 2821
Filter: 2821
Fatality_Crash: 559227
Crashes_Reported: 559227
Pct_of_Crashes: 1

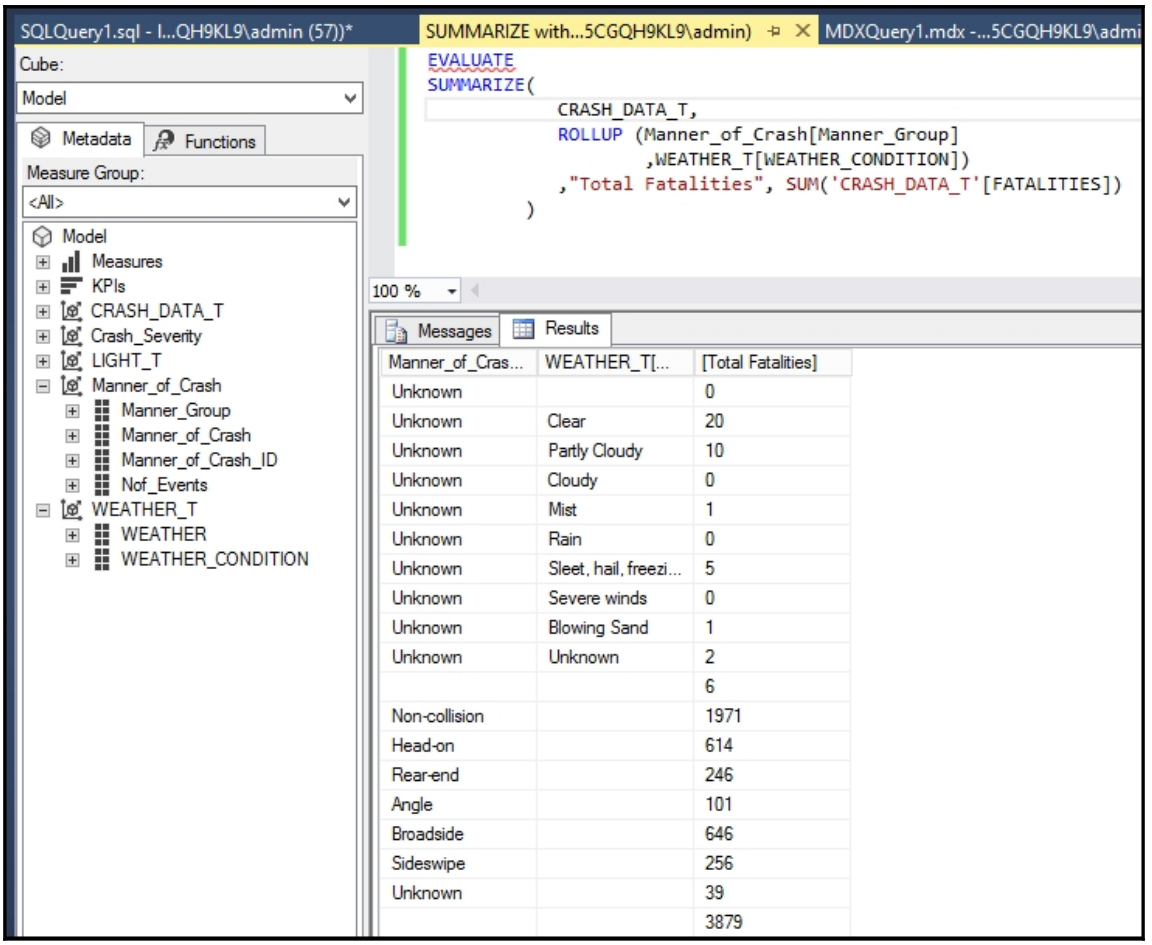

Properties
Pct_of_Crashes Measure
Decimal places 2
Description
Format Percentage
Formula COUNT(CRASH_DATA
Measure Name Pct_of_Crashes
Show Thousand S False
Table Detail Positi [No Default Field Set]


Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Model
Measures
CRASH_DATA_T
Count_of_Crashes
Crashes_Reported
Fatal_Crashes
Fatalities_Label
Fatality_Crash
Dimension
Hierarchy
Operator
<Select dimension>
Severity_Descr
Count_of_Crashes
Pct_of_Crashes
Fatal 3474 0.0062121464092399
Incapacitating 14002 0.0250381329942939
Non-incapacitating 50559 0.0904087249006218
Possible 89297 0.159679343093234
Uninjured 401895 0.71866165260261

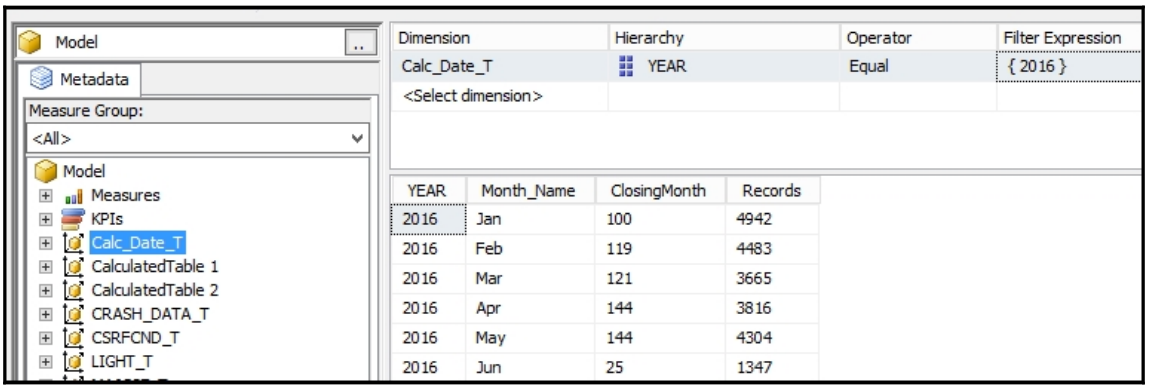

SQLQuery1.sql - I...QH9KL9\admin (57))*
SUMMARIZE BASE....CGQH9KL9\admin)
MDXQuery1.mdx -...5CGQH9KL9\adm
Cube:
Model
Metadata
Functions
Measure Group:
<All>
Model
Measures
KPIs
CRASH_DATA_T
Crash_Severity
LIGHT_T
Manner_of_Crash
WEATHER_T
WEATHER
WEATHER_CONDITION
EVALUATE
SUMMARIZE(
CRASH_DATA_T
,WEATHER_T[WEATHER_CONDITION]
,"Total Fatalities", sum('CRASH_DATA_T'[FATALITIES])
)
100 %
Messages
Results
WEATHER_T[...
[Total Fatalities]
6
Clear
2172
Partly Cloudy
1111
Cloudy
53
Mist
224
Rain
47
Sleet, hail, freezi...
181
Severe winds
11
Blowing Sand
24
Unknown
50

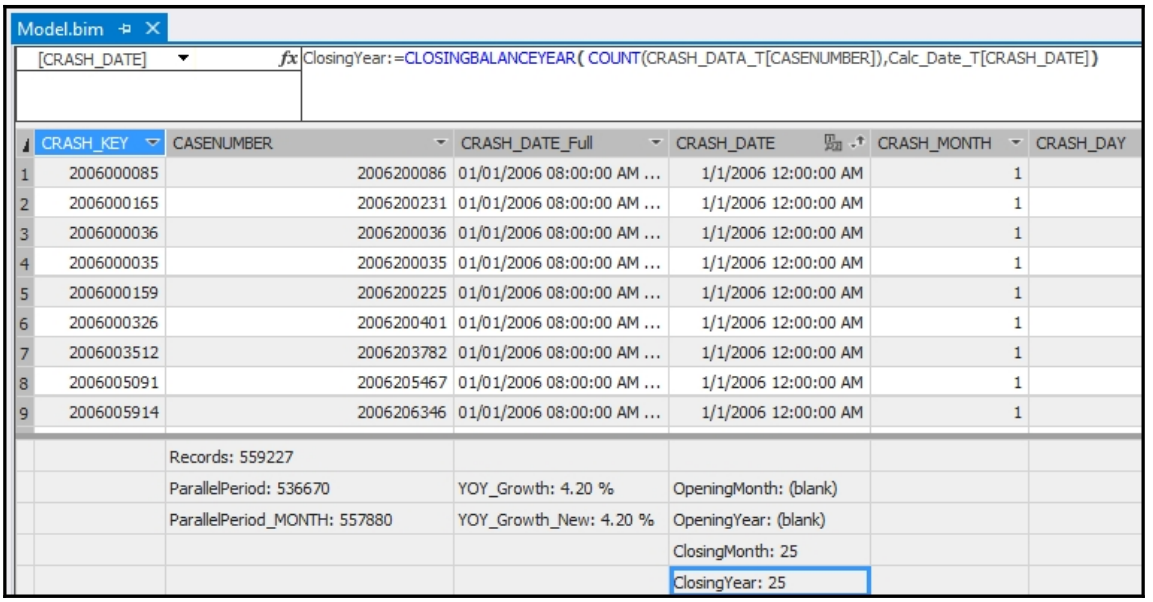


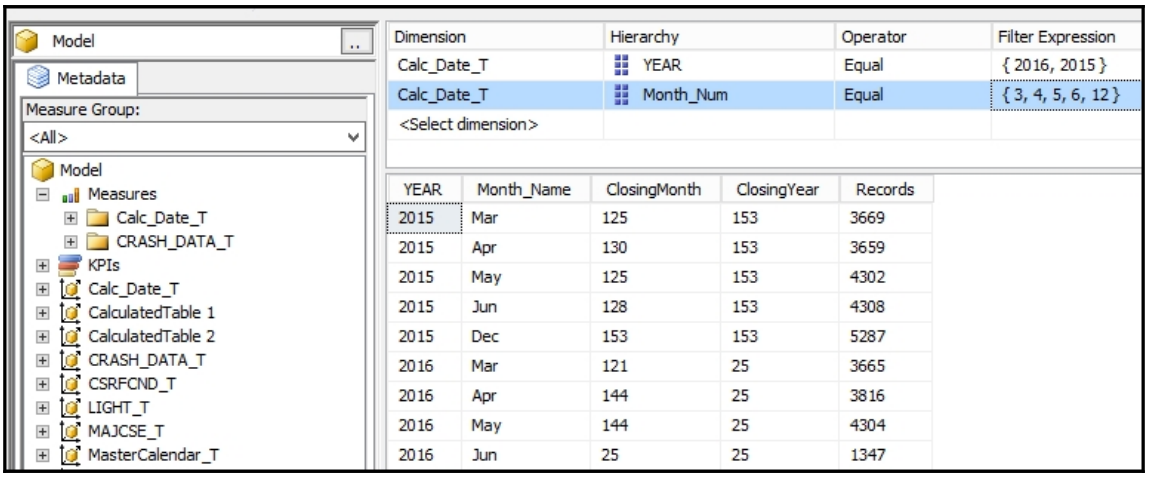
Manner_of_Cras...	WEATHER_T[...	[Total Fatalities]
Non-collision	Partly Cloudy	549
Non-collision	Cloudy	23
Non-collision	Mist	110
Non-collision	Rain	14
Non-collision	Sleet, hail, freezi...	55
Non-collision	Severe winds	6
Non-collision	Blowing Sand	7
Non-collision	Unknown	47
Head-on		0
Head-on	Clear	300
Head-on	Partly Cloudy	186

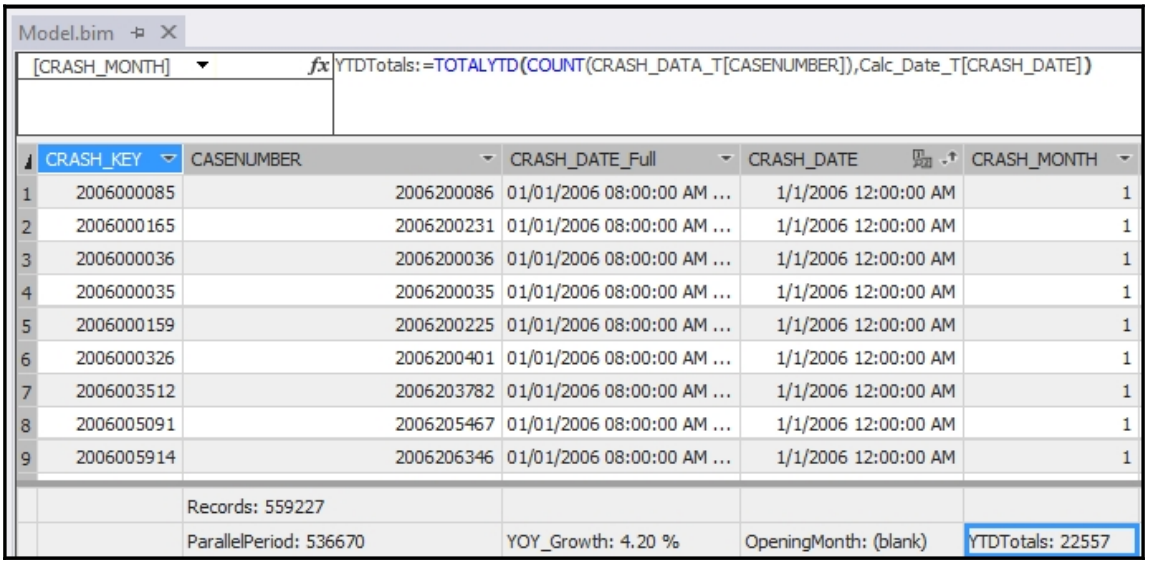

SQLQuery1.sql - I...QH9KL9\admin (57))*
SUMMARIZE with...5CGQH9KL9\admin)
MDXQuery1.mdx -...5CGQH9KL9\admi
Cube:
Model
Metadata
Functions
Measure Group:
<All>
Model
Measures
KPIs
CRASH_DATA_T
Crash_Severity
LIGHT_T
Manner_of_Crash
Manner_Group
Manner_of_Crash
Manner_of_Crash_ID
Nof_Events
WEATHER_T
WEATHER
WEATHER_CONDITION
EVALUATE
SUMMARIZE(
CRASH_DATA_T,
ROLLUP (Manner_of_Crash[Manner_Group]
,WEATHER_T[WEATHER_CONDITION])
,"Total Fatalities", SUM('CRASH_DATA_T'[FATALITIES])
)
100 %
Messages
Results
Manner_of_Cras...
WEATHER_T[...
[Total Fatalities]
Unknown 0
Unknown Clear 20
Unknown Partly Cloudy 10
Unknown Cloudy 0
Unknown Mist 1
Unknown Rain 0
Unknown Sleet, hail, freezi... 5
Unknown Severe winds 0
Unknown Blowing Sand 1
Unknown Unknown 2
6
Non-collision 1971
Head-on 614
Rear-end 246
Angle 101
Broadside 646
Sideswipe 256
Unknown 39
3879

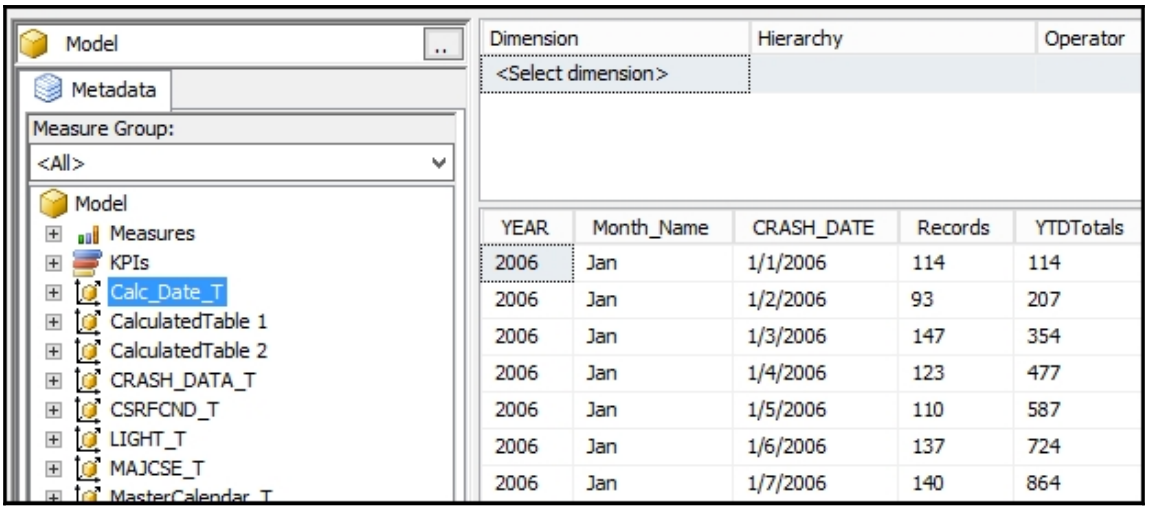
Chapter 10: Working with Dates and Time Intelligence

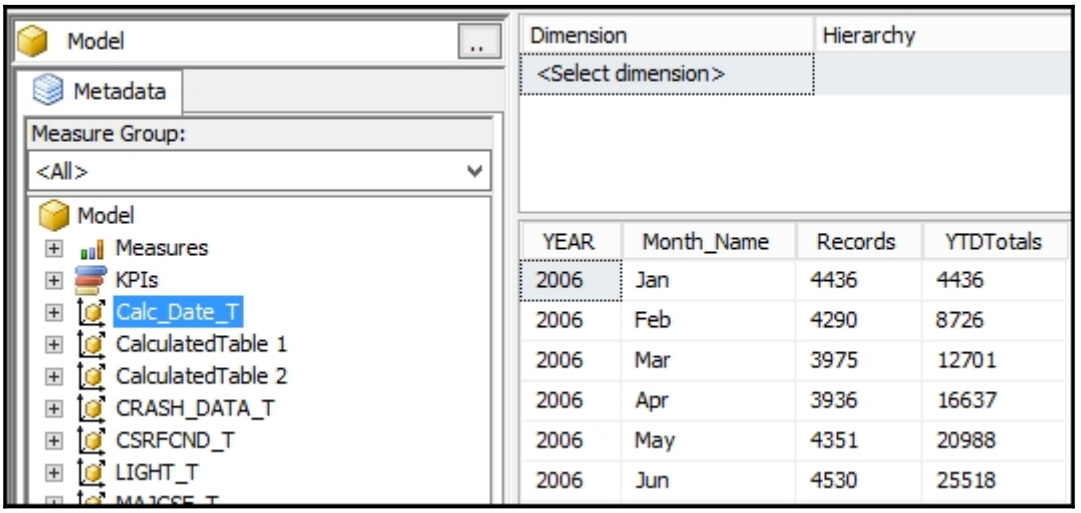


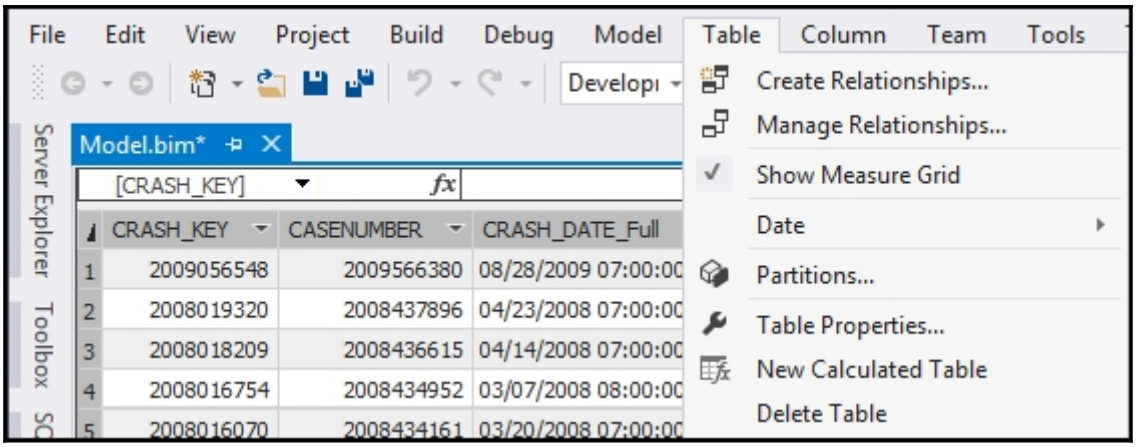


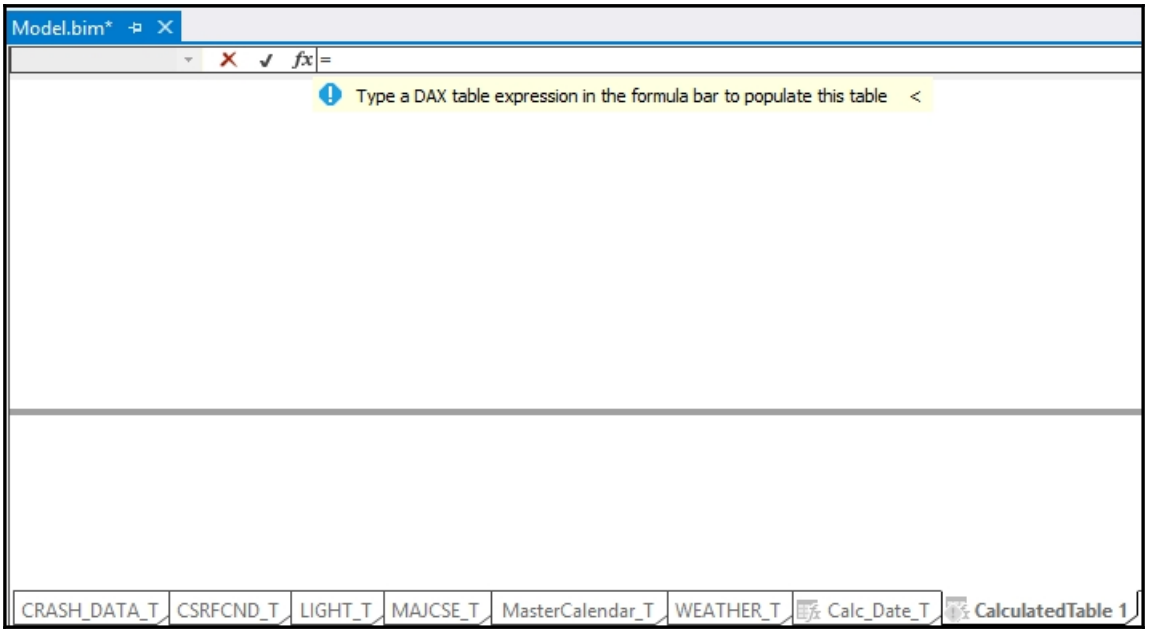

Model
Metadata
Measure Group:
<All>
Model
Measures
Calc_Date_T
CRASH_DATA_T
KPIs
Calc_Date_T
CalculatedTable 1
CalculatedTable 2
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
Dimension
Hierarchy
Operator
Filter Expression
Calc_Date_T
YEAR
Equal
{ 2016, 2015 }
Calc_Date_T
Month_Num
Equal
{ 3, 4, 5, 6, 12 }
<Select dimension>
YEAR
Month_Name
ClosingMonth
ClosingYear
Records
2015 Mar 125 153 3669
2015 Apr 130 153 3659
2015 May 125 153 4302
2015 Jun 128 153 4308
2015 Dec 153 153 5287
2016 Mar 121 25 3665
2016 Apr 144 25 3816
2016 May 144 25 4304
2016 Jun 25 25 1347

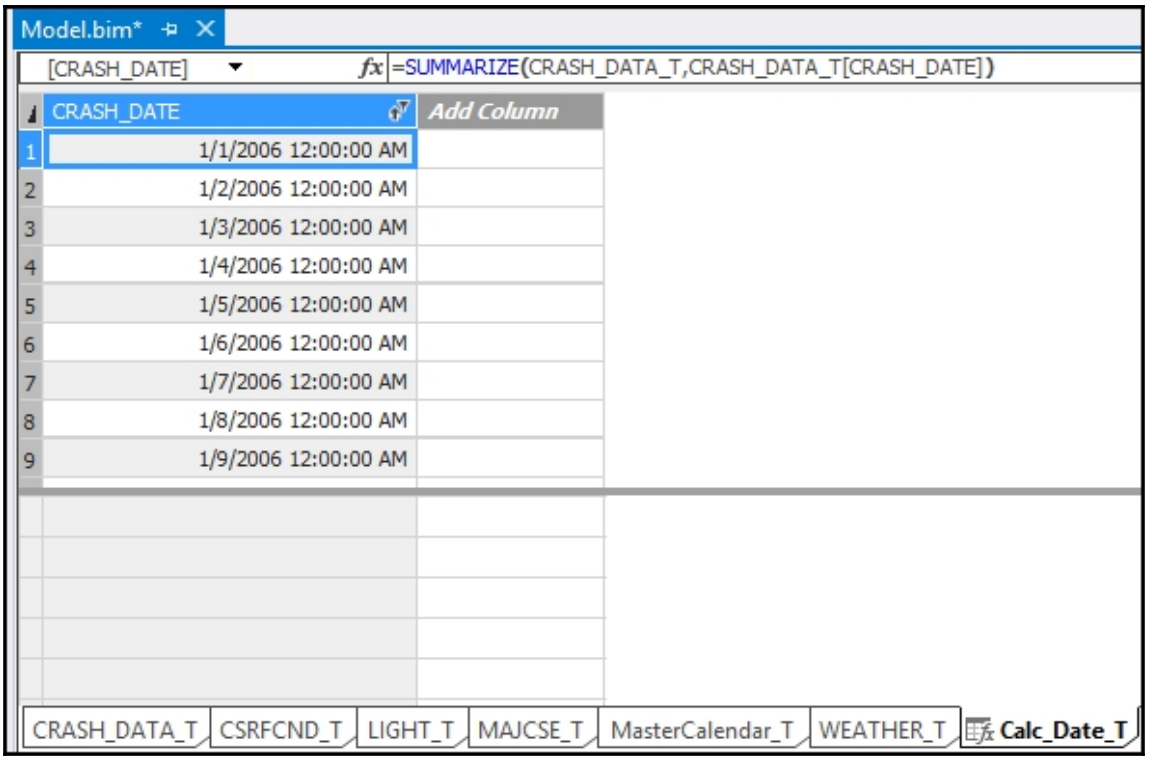

Model.bim
[CRASH_MONTH]
YTDTotals:=TOTALYTD(COUNT(CRASH_DATA_T[CASENUMBER]),Calc_Date_T[CRASH_DATE])
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
1 2006000085 2006200086 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
2 2006000165 2006200231 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
3 2006000036 2006200036 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
4 2006000035 2006200035 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
5 2006000159 2006200225 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
6 2006000326 2006200401 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
7 2006003512 2006203782 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
8 2006005091 2006205467 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
9 2006005914 2006206346 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
Records: 559227
ParallelPeriod: 536670
YOY_Growth: 4.20 %
OpeningMonth: (blank)
YTDTotals: 22557

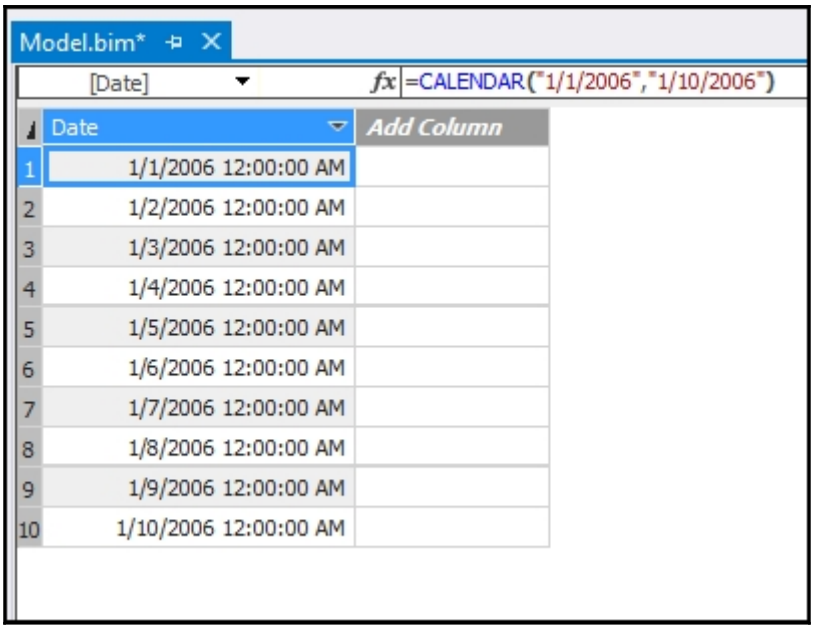

Model
..
Metadata
Measure Group:
<All>
Model
Measures
KPIs
Calc_Date_T
CalculatedTable 1
CalculatedTable 2
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
Dimension
Hierarchy
Operator
<Select dimension>
YEAR
Month_Name
CRASH_DATE
Records
YTDTotals
2006 Jan 1/1/2006 114 114
2006 Jan 1/2/2006 93 207
2006 Jan 1/3/2006 147 354
2006 Jan 1/4/2006 123 477
2006 Jan 1/5/2006 110 587
2006 Jan 1/6/2006 137 724
2006 Jan 1/7/2006 140 864


Model
..
Metadata
Measure Group:
<All>
Model
Measures
KPIs
Calc_Date_T
CalculatedTable 1
CalculatedTable 2
CRASH_DATA_T
CSRFCND_T
LIGHT_T
Dimension
Hierarchy
<Select dimension>
YEAR
Month_Name
Records
YTDTotals
2006 Jan 4436 4436
2006 Feb 4290 8726
2006 Mar 3975 12701
2006 Apr 3936 16637
2006 May 4351 20988
2006 Jun 4530 25518


File
Edit
View
Project
Build
Debug
Model
Table
Column
Team
Tools
Create Relationships...
Manage Relationships...
Show Measure Grid
Date
Partitions...
Table Properties...
New Calculated Table
Delete Table
Model.bim*
[CRASH_KEY]
fx
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
1 2009056548 2009566380 08/28/2009 07:00:00
2 2008019320 2008437896 04/23/2008 07:00:00
3 2008018209 2008436615 04/14/2008 07:00:00
4 2008016754 2008434952 03/07/2008 08:00:00
5 2008016070 2008434161 03/20/2008 07:00:00
Server Explorer
Toolbox


Model.bim*
fx
=
Type a DAX table expression in the formula bar to populate this table
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
Calc_Date_T
CalculatedTable 1


Model.bim*
[CRASH_DATE]
=SUMMARIZE(CRASH_DATA_T,CRASH_DATA_T[CRASH_DATE])
CRASH_DATE
Add Column
1 1/1/2006 12:00:00 AM
2 1/2/2006 12:00:00 AM
3 1/3/2006 12:00:00 AM
4 1/4/2006 12:00:00 AM
5 1/5/2006 12:00:00 AM
6 1/6/2006 12:00:00 AM
7 1/7/2006 12:00:00 AM
8 1/8/2006 12:00:00 AM
9 1/9/2006 12:00:00 AM
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
Calc_Date_T


Model.bim*
[Date]
=CALENDAR("1/1/2006","1/10/2006")
Date
Add Column
1 1/1/2006 12:00:00 AM
2 1/2/2006 12:00:00 AM
3 1/3/2006 12:00:00 AM
4 1/4/2006 12:00:00 AM
5 1/5/2006 12:00:00 AM
6 1/6/2006 12:00:00 AM
7 1/7/2006 12:00:00 AM
8 1/8/2006 12:00:00 AM
9 1/9/2006 12:00:00 AM
10 1/10/2006 12:00:00 AM

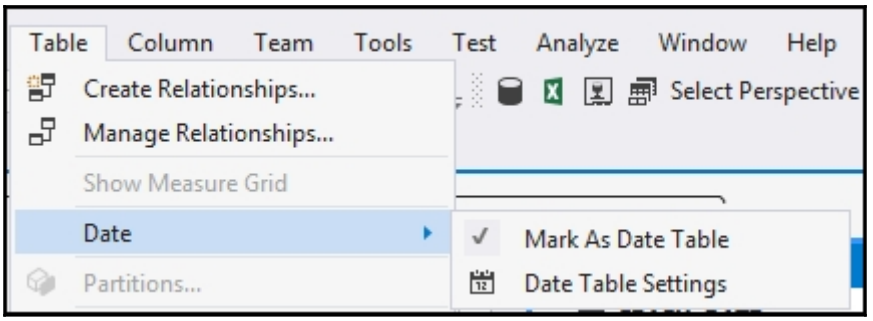
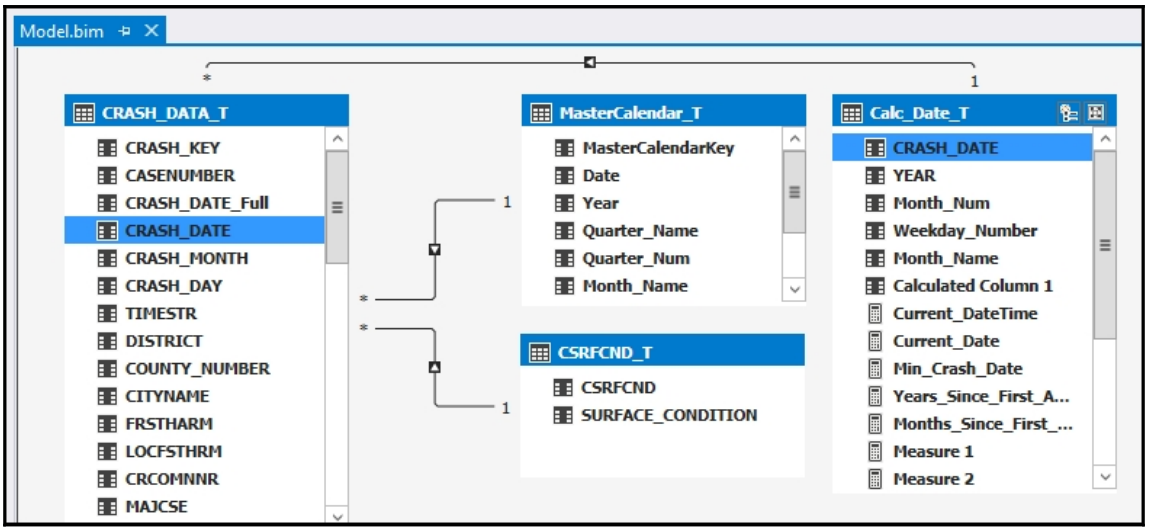
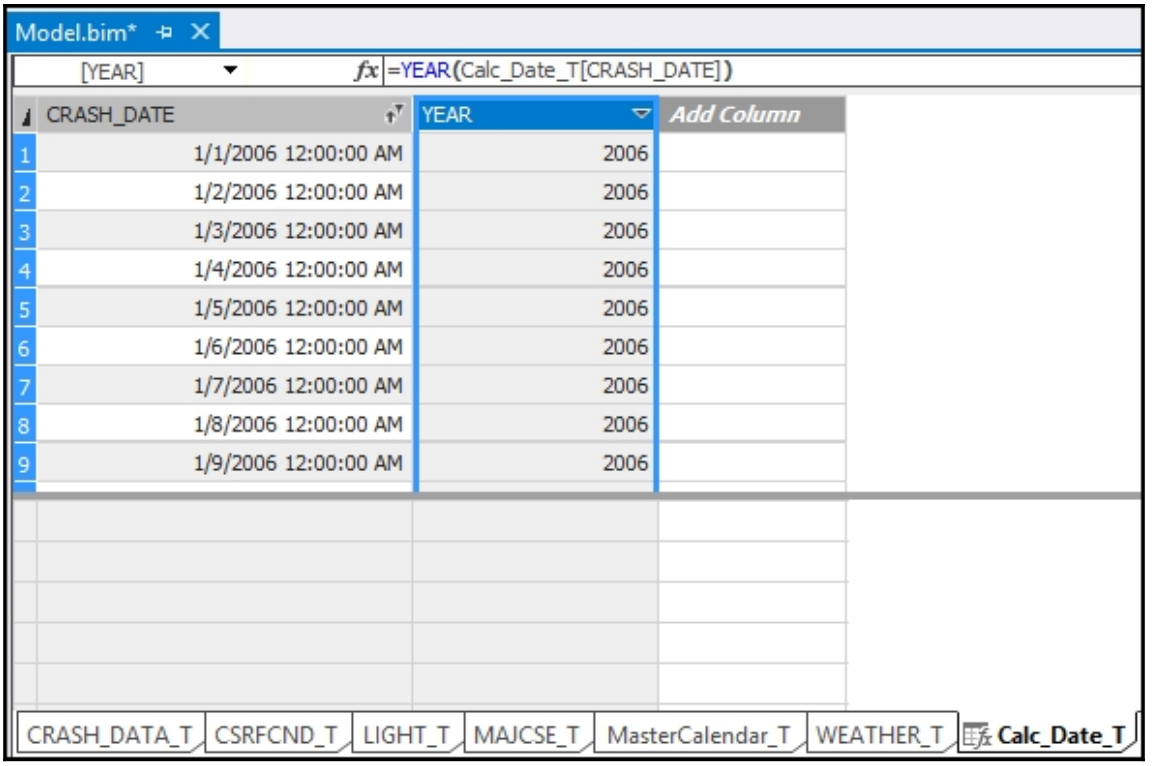
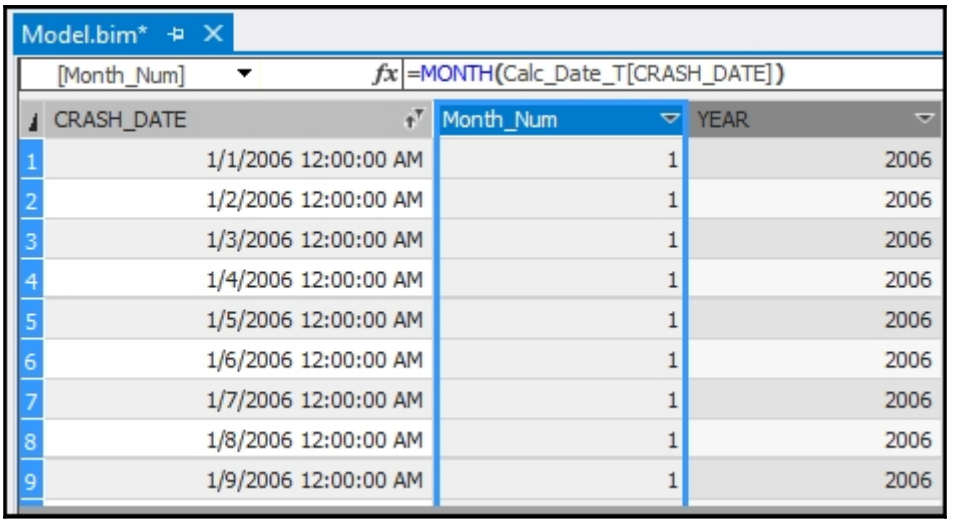
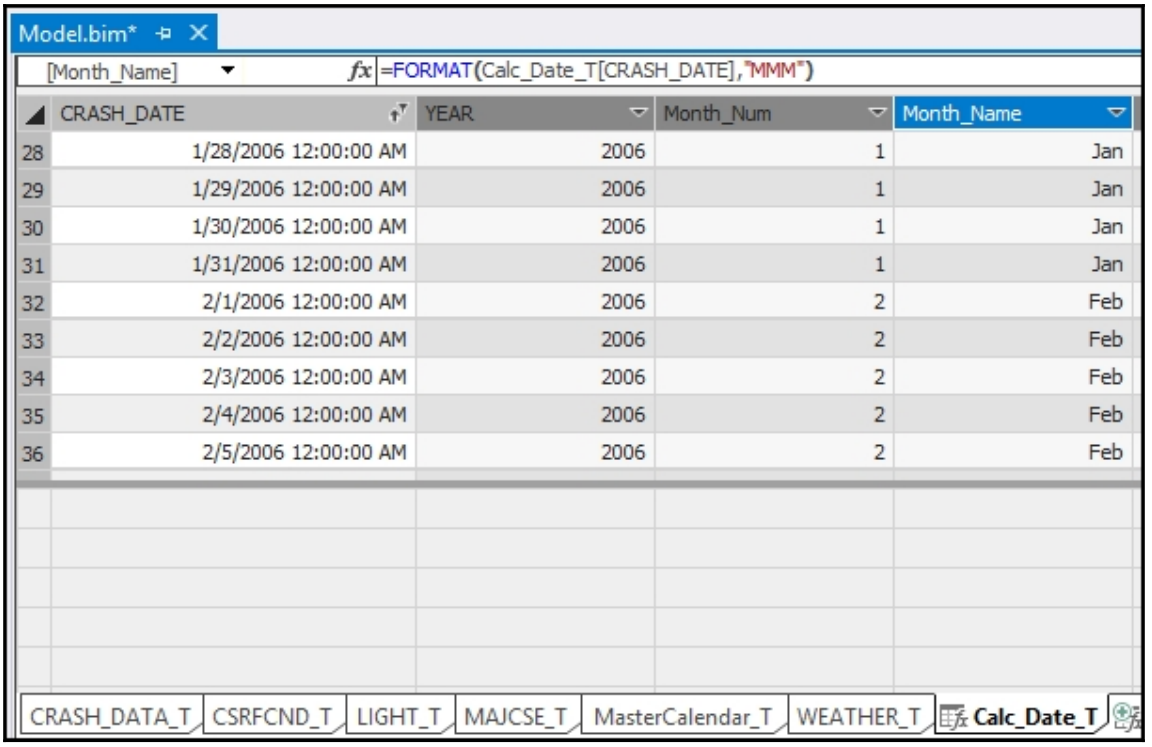


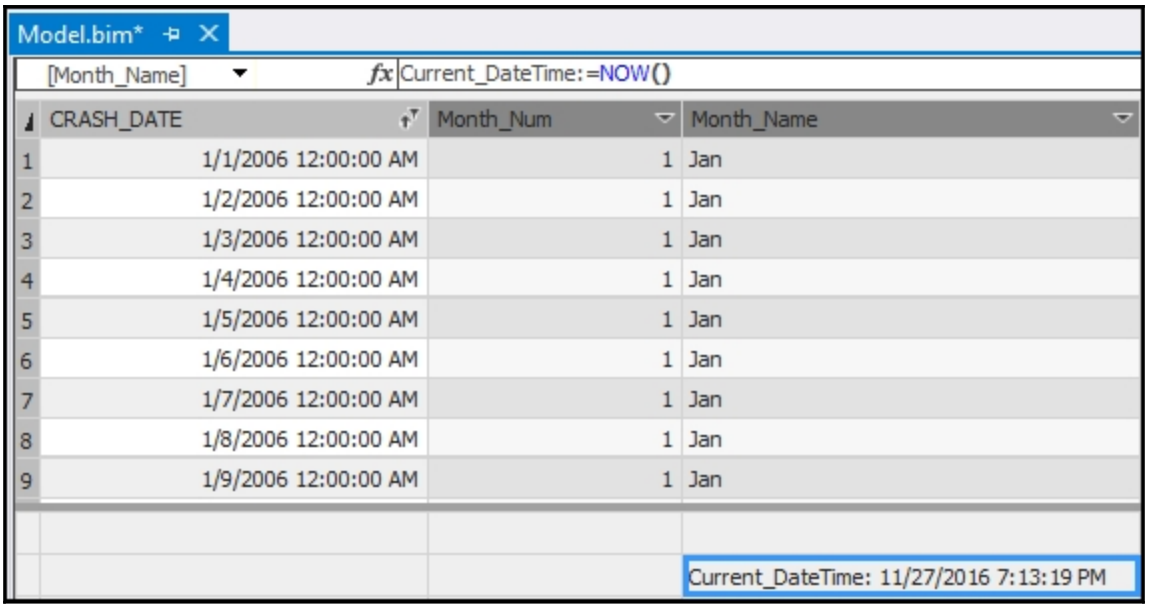
Table
Column
Team
Tools
Test
Analyze
Window
Help
Create Relationships...
Manage Relationships...
Show Measure Grid
Date
Partitions...
Select Perspective
Mark As Date Table
Date Table Settings

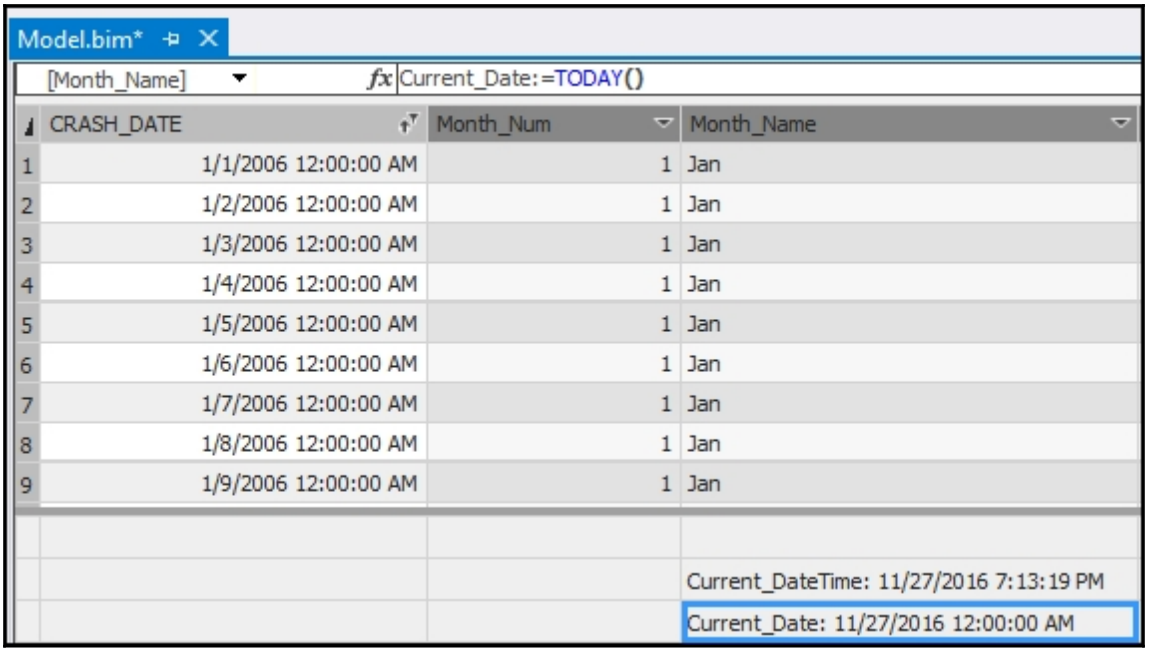

Model.bim
*
1
CRASH_DATA_T
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
CRASH_DAY
TIMESTR
DISTRICT
COUNTY_NUMBER
CITYNAME
FRSTHARM
LOCFSTHRM
CRCOMNNR
MAJCSE
MasterCalendar_T
MasterCalendarKey
Date
Year
Quarter_Name
Quarter_Num
Month_Name
CSRFCND_T
CSRFCND
SURFACE_CONDITION
Calc_Date_T
CRASH_DATE
YEAR
Month_Num
Weekday_Number
Month_Name
Calculated Column 1
Current_DateTime
Current_Date
Min_Crash_Date
Years_Since_First_A...
Months_Since_First_...
Measure 1
Measure 2

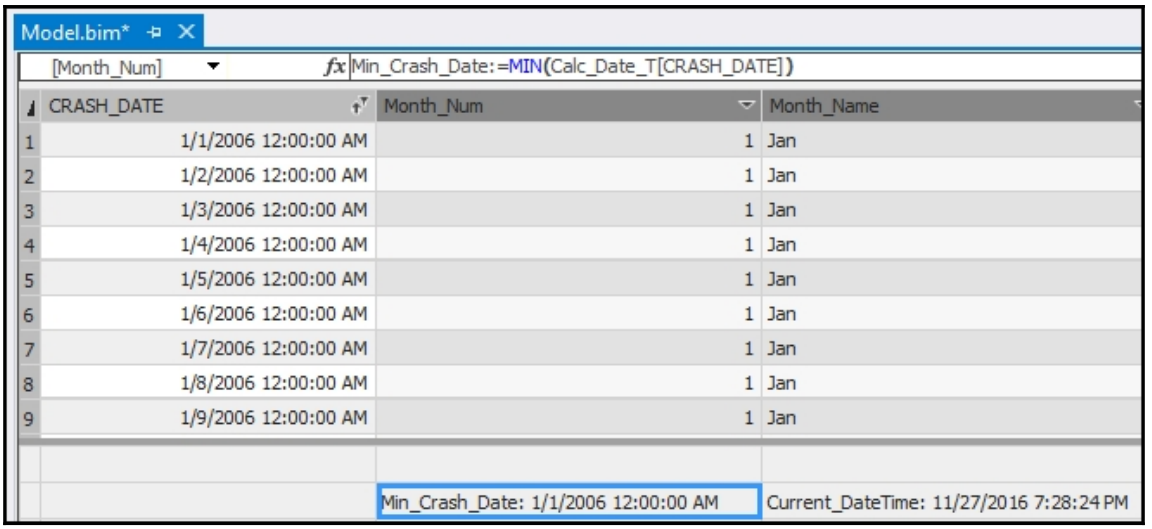

Model.bim*
[YEAR]
=YEAR(Calc_Date_T[CRASH_DATE])
CRASH_DATE
YEAR
Add Column
1 1/1/2006 12:00:00 AM 2006
2 1/2/2006 12:00:00 AM 2006
3 1/3/2006 12:00:00 AM 2006
4 1/4/2006 12:00:00 AM 2006
5 1/5/2006 12:00:00 AM 2006
6 1/6/2006 12:00:00 AM 2006
7 1/7/2006 12:00:00 AM 2006
8 1/8/2006 12:00:00 AM 2006
9 1/9/2006 12:00:00 AM 2006
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
Calc_Date_T

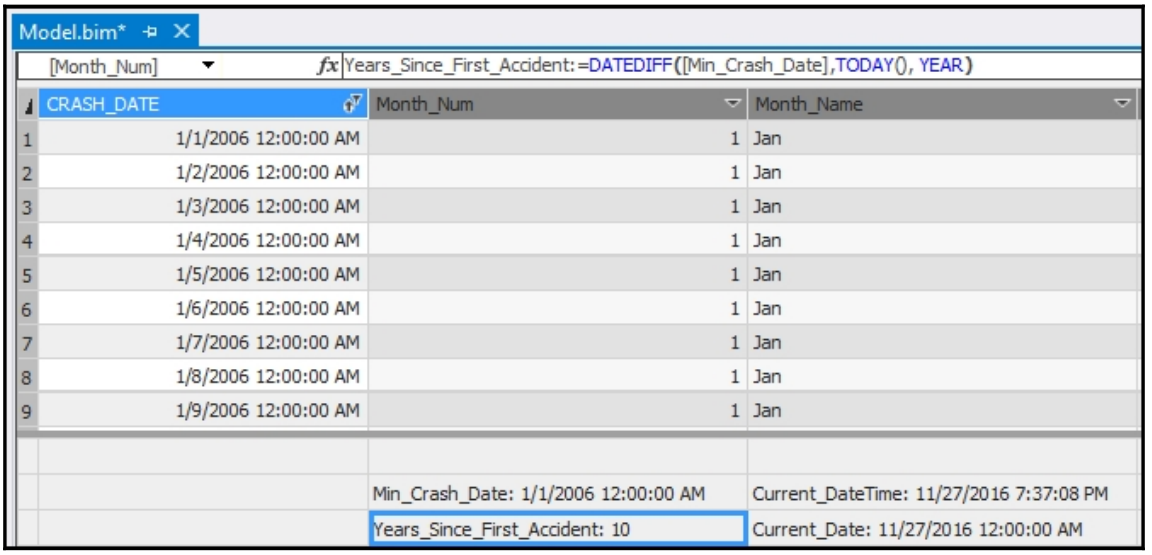

Model.bim*
[Month_Num]
fx
=MONTH(Calc_Date_T[CRASH_DATE])
CRASH_DATE
Month_Num
YEAR
1 1/1/2006 12:00:00 AM 1 2006
2 1/2/2006 12:00:00 AM 1 2006
3 1/3/2006 12:00:00 AM 1 2006
4 1/4/2006 12:00:00 AM 1 2006
5 1/5/2006 12:00:00 AM 1 2006
6 1/6/2006 12:00:00 AM 1 2006
7 1/7/2006 12:00:00 AM 1 2006
8 1/8/2006 12:00:00 AM 1 2006
9 1/9/2006 12:00:00 AM 1 2006

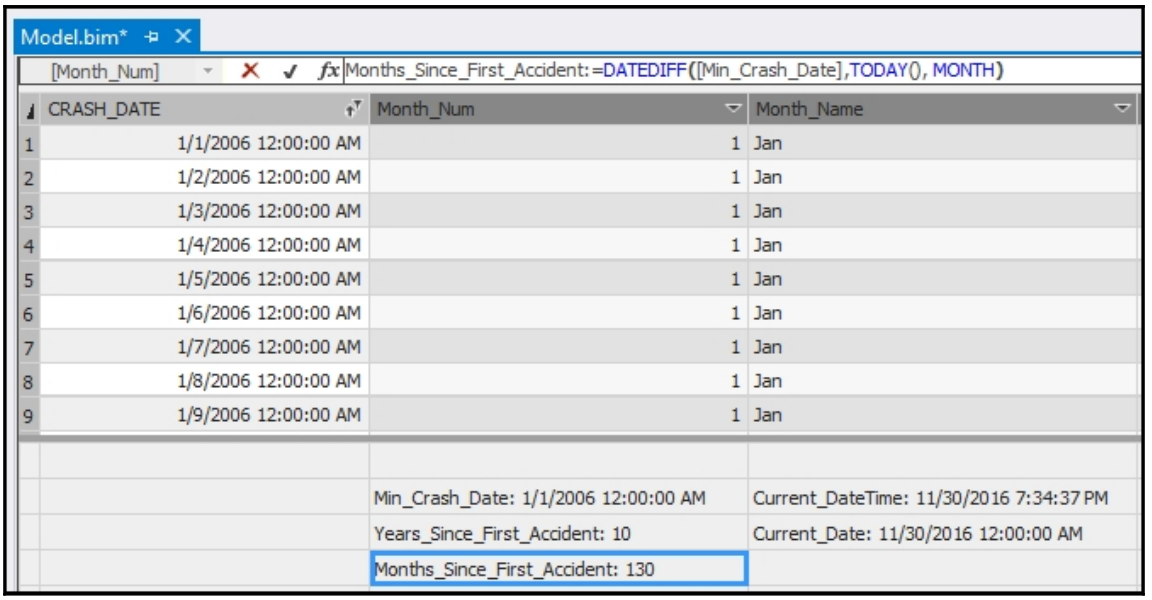

Model.bim*
[Month_Name]
fx
=FORMAT(Calc_Date_T[CRASH_DATE],"MMM")
CRASH_DATE
YEAR
Month_Num
Month_Name
28 1/28/2006 12:00:00 AM 2006 1 Jan
29 1/29/2006 12:00:00 AM 2006 1 Jan
30 1/30/2006 12:00:00 AM 2006 1 Jan
31 1/31/2006 12:00:00 AM 2006 1 Jan
32 2/1/2006 12:00:00 AM 2006 2 Feb
33 2/2/2006 12:00:00 AM 2006 2 Feb
34 2/3/2006 12:00:00 AM 2006 2 Feb
35 2/4/2006 12:00:00 AM 2006 2 Feb
36 2/5/2006 12:00:00 AM 2006 2 Feb
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
Calc_Date_T

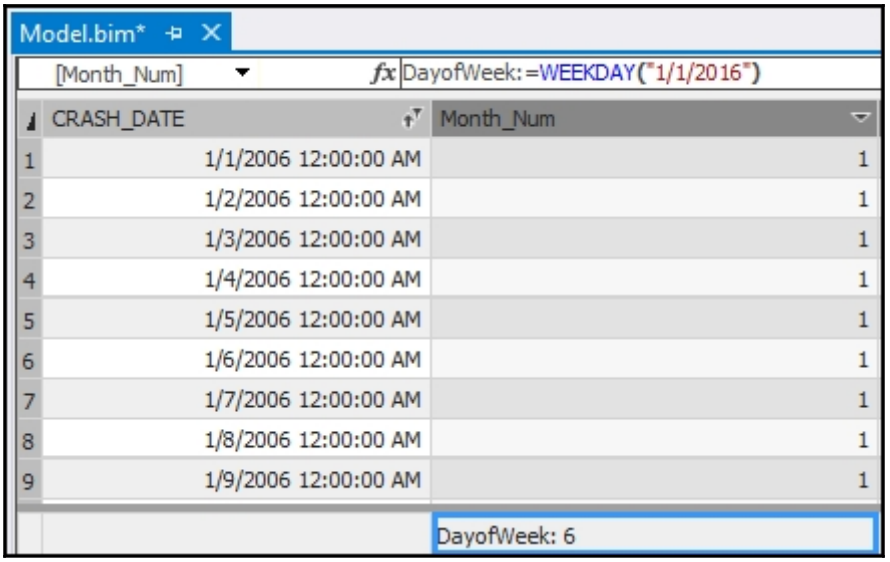

Model.bim*
[Month_Name]
fx
Current_DateTime:=NOW()
CRASH_DATE
Month_Num
Month_Name
1 1/1/2006 12:00:00 AM 1 Jan
2 1/2/2006 12:00:00 AM 1 Jan
3 1/3/2006 12:00:00 AM 1 Jan
4 1/4/2006 12:00:00 AM 1 Jan
5 1/5/2006 12:00:00 AM 1 Jan
6 1/6/2006 12:00:00 AM 1 Jan
7 1/7/2006 12:00:00 AM 1 Jan
8 1/8/2006 12:00:00 AM 1 Jan
9 1/9/2006 12:00:00 AM 1 Jan
Current_DateTime: 11/27/2016 7:13:19 PM


Model.bim*
[Month_Name]
fx
Current_Date:=TODAY()
CRASH_DATE
Month_Num
Month_Name
1 1/1/2006 12:00:00 AM 1 Jan
2 1/2/2006 12:00:00 AM 1 Jan
3 1/3/2006 12:00:00 AM 1 Jan
4 1/4/2006 12:00:00 AM 1 Jan
5 1/5/2006 12:00:00 AM 1 Jan
6 1/6/2006 12:00:00 AM 1 Jan
7 1/7/2006 12:00:00 AM 1 Jan
8 1/8/2006 12:00:00 AM 1 Jan
9 1/9/2006 12:00:00 AM 1 Jan
Current_DateTime: 11/27/2016 7:13:19 PM
Current_Date: 11/27/2016 12:00:00 AM


Model.bim*
[Month_Num]
Min_Crash_Date:=MIN(Calc_Date_T[CRASH_DATE])
CRASH_DATE
Month_Num
Month_Name
1 1/1/2006 12:00:00 AM 1 Jan
2 1/2/2006 12:00:00 AM 1 Jan
3 1/3/2006 12:00:00 AM 1 Jan
4 1/4/2006 12:00:00 AM 1 Jan
5 1/5/2006 12:00:00 AM 1 Jan
6 1/6/2006 12:00:00 AM 1 Jan
7 1/7/2006 12:00:00 AM 1 Jan
8 1/8/2006 12:00:00 AM 1 Jan
9 1/9/2006 12:00:00 AM 1 Jan
Min_Crash_Date: 1/1/2006 12:00:00 AM
Current_DateTime: 11/27/2016 7:28:24 PM


Model.bim*
[Month_Num]
Years_Since_First_Accident:=DATEDIFF([Min_Crash_Date],TODAY(), YEAR)
CRASH_DATE
Month_Num
Month_Name
1 1/1/2006 12:00:00 AM 1 Jan
2 1/2/2006 12:00:00 AM 1 Jan
3 1/3/2006 12:00:00 AM 1 Jan
4 1/4/2006 12:00:00 AM 1 Jan
5 1/5/2006 12:00:00 AM 1 Jan
6 1/6/2006 12:00:00 AM 1 Jan
7 1/7/2006 12:00:00 AM 1 Jan
8 1/8/2006 12:00:00 AM 1 Jan
9 1/9/2006 12:00:00 AM 1 Jan
Min_Crash_Date: 1/1/2006 12:00:00 AM
Current_DateTime: 11/27/2016 7:37:08 PM
Years_Since_First_Accident: 10
Current_Date: 11/27/2016 12:00:00 AM


Model.bim*
[Month_Num]
Months_Since_First_Accident:=DATEDIFF([Min_Crash_Date],TODAY(), MONTH)
CRASH_DATE
Month_Num
Month_Name
1/1/2006 12:00:00 AM 1 Jan
1/2/2006 12:00:00 AM 1 Jan
1/3/2006 12:00:00 AM 1 Jan
1/4/2006 12:00:00 AM 1 Jan
1/5/2006 12:00:00 AM 1 Jan
1/6/2006 12:00:00 AM 1 Jan
1/7/2006 12:00:00 AM 1 Jan
1/8/2006 12:00:00 AM 1 Jan
1/9/2006 12:00:00 AM 1 Jan
Min_Crash_Date: 1/1/2006 12:00:00 AM
Current_DateTime: 11/30/2016 7:34:37 PM
Years_Since_First_Accident: 10
Current_Date: 11/30/2016 12:00:00 AM
Months_Since_First_Accident: 130


Model.bim*
[Month_Num]
DayofWeek:=WEEKDAY("1/1/2016")
CRASH_DATE
Month_Num
1/1/2006 12:00:00 AM 1
1/2/2006 12:00:00 AM 1
1/3/2006 12:00:00 AM 1
1/4/2006 12:00:00 AM 1
1/5/2006 12:00:00 AM 1
1/6/2006 12:00:00 AM 1
1/7/2006 12:00:00 AM 1
1/8/2006 12:00:00 AM 1
1/9/2006 12:00:00 AM 1
DayofWeek: 6

Model.bim*

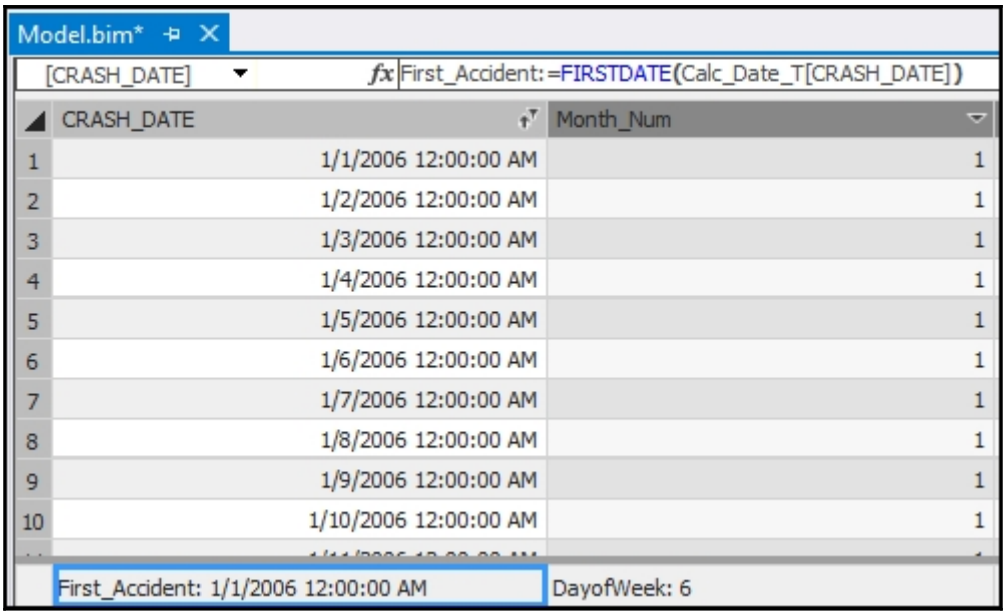
[Month_Name] fx DayofWeekName:=FORMAT(WEEKDAY("1/1/2016"),"DDDD")

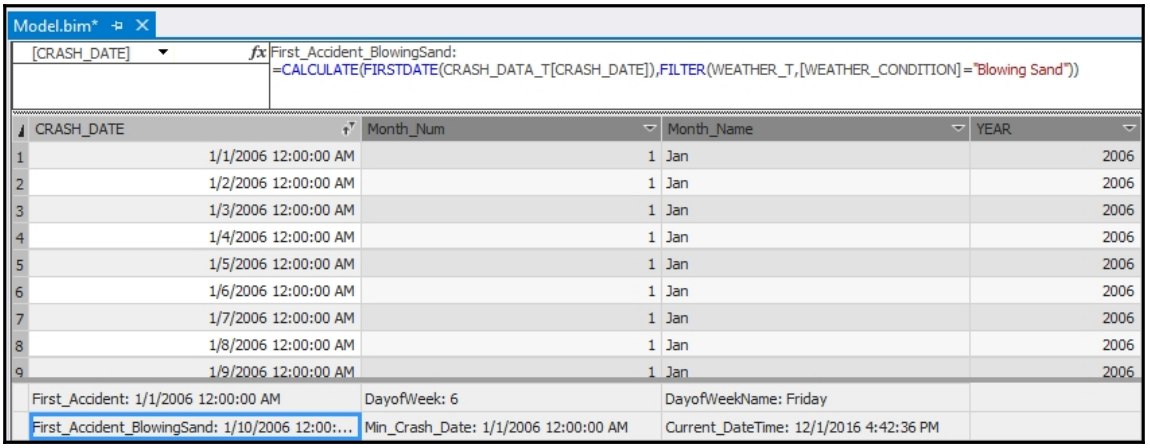
	CRASH_DATE	Month_Num	Month_Name
1	1/1/2006 12:00:00 AM	1	Jan
2	1/2/2006 12:00:00 AM	1	Jan
3	1/3/2006 12:00:00 AM	1	Jan
4	1/4/2006 12:00:00 AM	1	Jan
5	1/5/2006 12:00:00 AM	1	Jan
6	1/6/2006 12:00:00 AM	1	Jan
7	1/7/2006 12:00:00 AM	1	Jan
8	1/8/2006 12:00:00 AM	1	Jan
9	1/9/2006 12:00:00 AM	1	Jan
		DayofWeek: 6	DayofWeekName: Friday

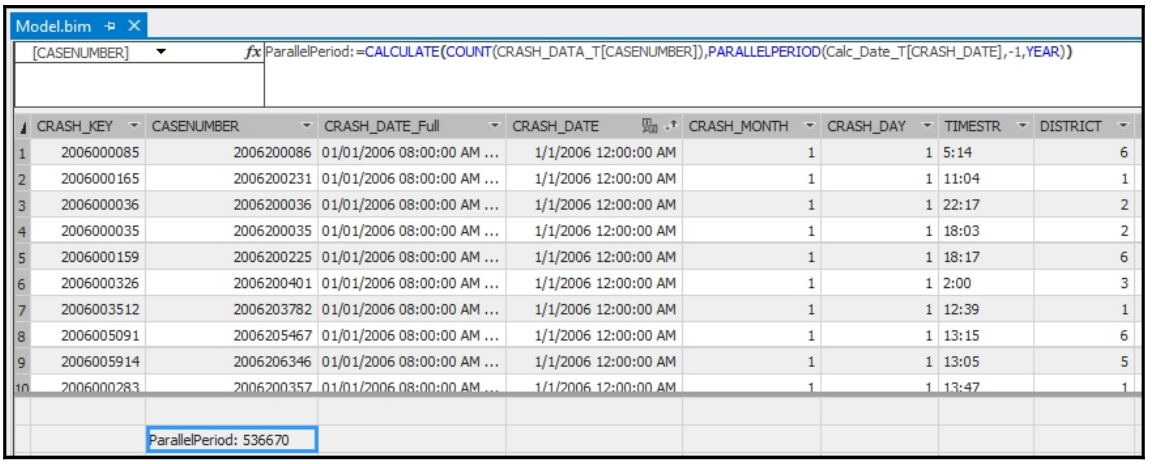
Model.bim*

[CASENUMBER] fx Tuesday_Crashes:=CALCULATE(COUNT(CRASH_DATA_T[CASENUMBER]),WEEKDAY(CRASH_DATA_T[CRASH_DATE])=3)

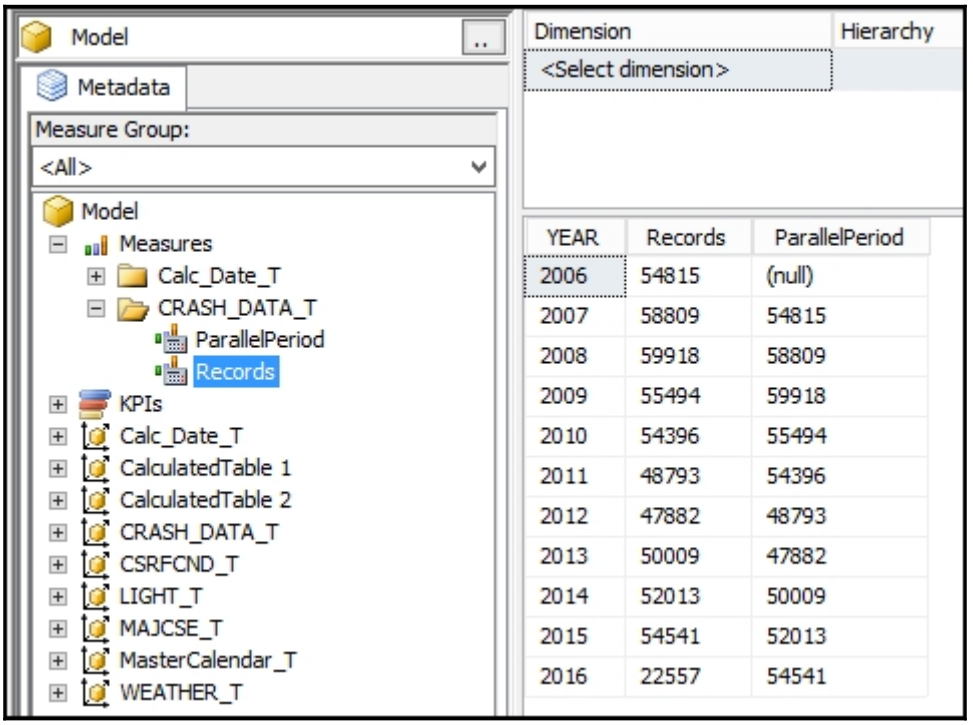
	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONTH	CRASH_DAY	TIMESTR
1	2006000085	2006200086	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	5:14
2	2006000165	2006200231	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	11:04
3	2006000036	2006200036	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	22:17
4	2006000035	2006200035	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:03
5	2006000159	2006200225	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:17
6	2006000326	2006200401	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	2:00
7	2006003512	2006203782	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	12:39
8	2006005091	2006205467	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:15
9	2006005914	2006206346	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:05
10	2006000283	2006200357	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:47
11	2006005228	2006205616	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:04
12	2006005389	2006205782	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	1:16
				ClosingMonth: 25			
		Friday_Crashes: 95709		ClosingYear: 25			
		Tuesday_Crashes: 81459					


Model.bim*
[CRASH_DATE]
First_Accident:=FIRSTDATE(Calc_Date_T[CRASH_DATE])
CRASH_DATE
Month_Num
1 1/1/2006 12:00:00 AM 1
2 1/2/2006 12:00:00 AM 1
3 1/3/2006 12:00:00 AM 1
4 1/4/2006 12:00:00 AM 1
5 1/5/2006 12:00:00 AM 1
6 1/6/2006 12:00:00 AM 1
7 1/7/2006 12:00:00 AM 1
8 1/8/2006 12:00:00 AM 1
9 1/9/2006 12:00:00 AM 1
10 1/10/2006 12:00:00 AM 1
First_Accident: 1/1/2006 12:00:00 AM
DayofWeek: 6


Model.bim*
[CRASH_DATE]
First_Accident_BlowingSand:
=CALCULATE(FIRSTDATE(CRASH_DATA_T[CRASH_DATE]),FILTER(WEATHER_T,[WEATHER_CONDITION]="Blowing Sand"))
CRASH_DATE
Month_Num
Month_Name
YEAR
1 1/1/2006 12:00:00 AM 1 Jan 2006
2 1/2/2006 12:00:00 AM 1 Jan 2006
3 1/3/2006 12:00:00 AM 1 Jan 2006
4 1/4/2006 12:00:00 AM 1 Jan 2006
5 1/5/2006 12:00:00 AM 1 Jan 2006
6 1/6/2006 12:00:00 AM 1 Jan 2006
7 1/7/2006 12:00:00 AM 1 Jan 2006
8 1/8/2006 12:00:00 AM 1 Jan 2006
9 1/9/2006 12:00:00 AM 1 Jan 2006
First_Accident: 1/1/2006 12:00:00 AM
DayofWeek: 6
DayofWeekName: Friday
First_Accident_BlowingSand: 1/10/2006 12:00:...
Min_Crash_Date: 1/1/2006 12:00:00 AM
Current_DateTime: 12/1/2016 4:42:36 PM



	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONTH	CRASH_DAY	TIMESTR	DISTRICT
1	2006000085	2006200086	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	5:14	6
2	2006000165	2006200231	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	11:04	1
3	2006000036	2006200036	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	22:17	2
4	2006000035	2006200035	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:03	2
5	2006000159	2006200225	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:17	6
6	2006000326	2006200401	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	2:00	3
7	2006003512	2006203782	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	12:39	1
8	2006005091	2006205467	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:15	6
9	2006005914	2006206346	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:05	5
10	2006000283	2006200357	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:47	1



YEAR	Records	ParallelPeriod
2006	54815	(null)
2007	58809	54815
2008	59918	58809
2009	55494	59918
2010	54396	55494
2011	48793	54396
2012	47882	48793
2013	50009	47882
2014	52013	50009
2015	54541	52013
2016	22557	54541

Model.bim

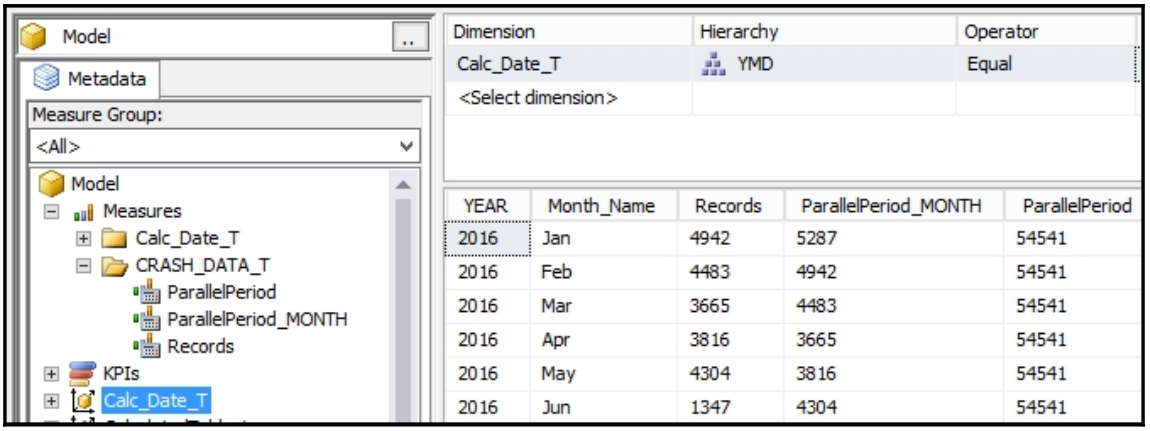
[CASENUMBER] fx ParallelPeriod_MONTH:=CALCULATE(COUNT(CRASH_DATA_T[CASENUMBER]),PARALLELPERIOD(Calc_Date_T[CRASH_DATE],-1,MONTH))

	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONTH	CRASH_DAY	TIMESTR	DISTRICT
1	2006000085	2006200086	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	5:14	
2	2006000165	2006200231	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	11:04	
3	2006000036	2006200036	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	22:17	
4	2006000035	2006200035	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:03	
5	2006000159	2006200225	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:17	
6	2006000326	2006200401	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	2:00	
7	2006003512	2006203782	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	12:39	
8	2006005091	2006205467	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:15	
9	2006005914	2006206346	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:05	
10	2006000283	2006200357	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	13:47	
11	2006005228	2006205616	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	1	18:04	

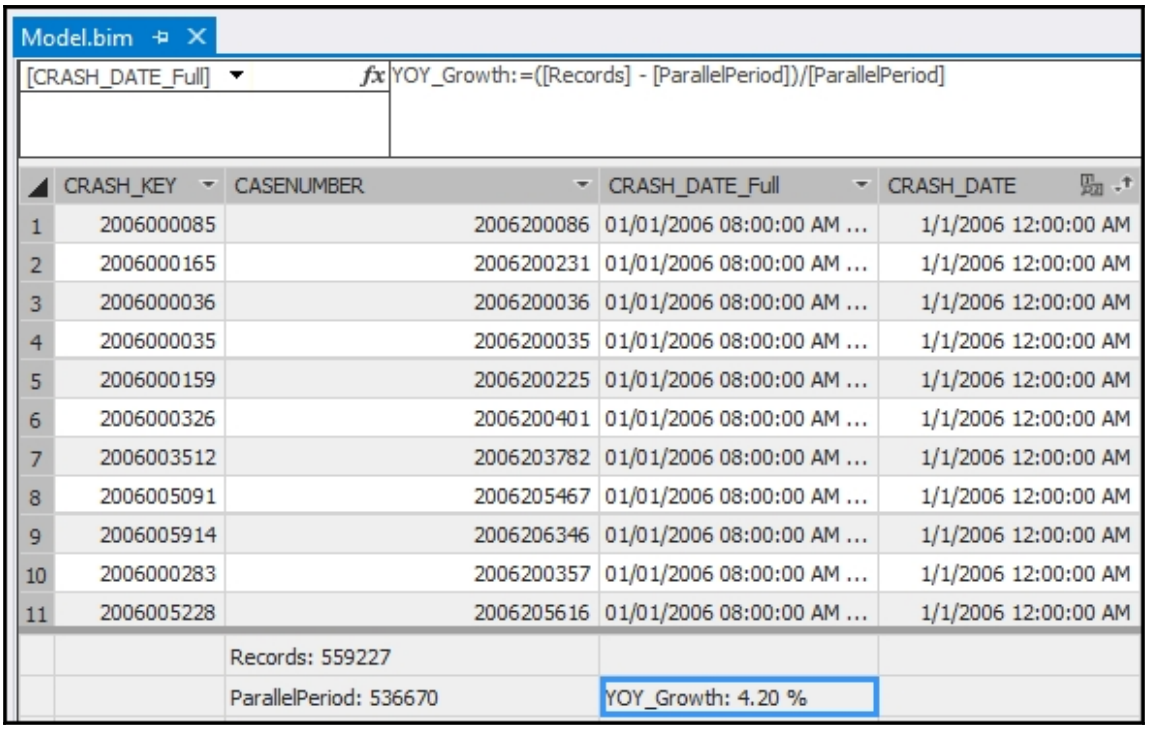
Records: 559227

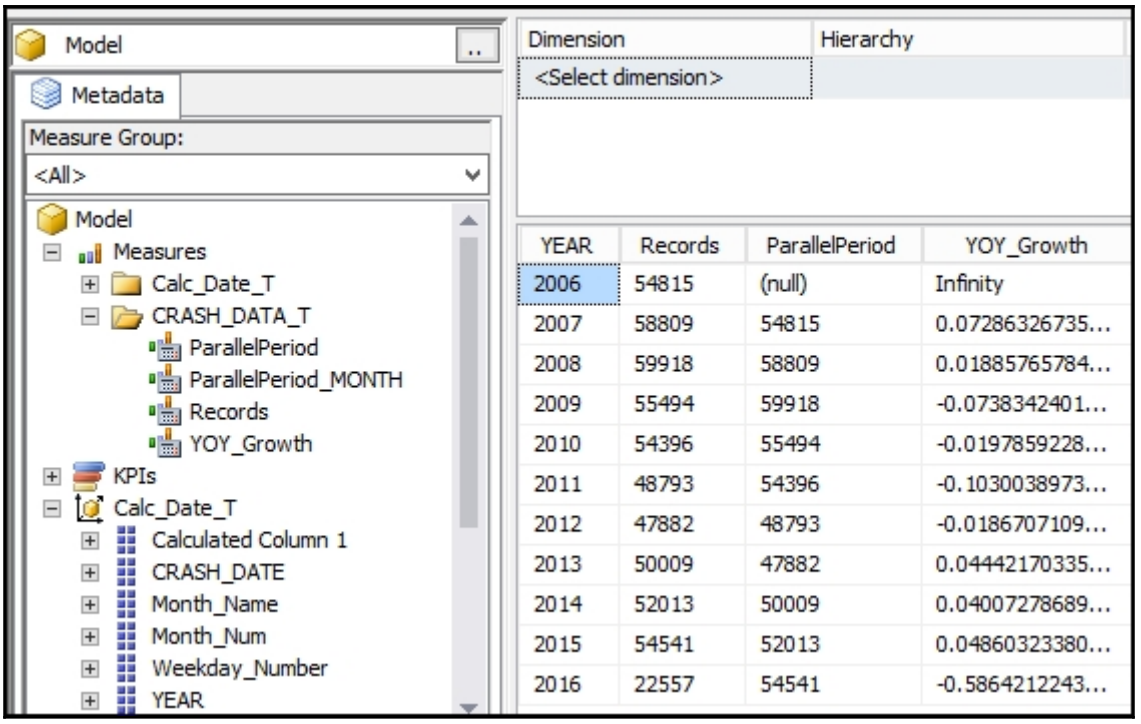
ParallelPeriod: 536670

ParallelPeriod_MONTH: 557880

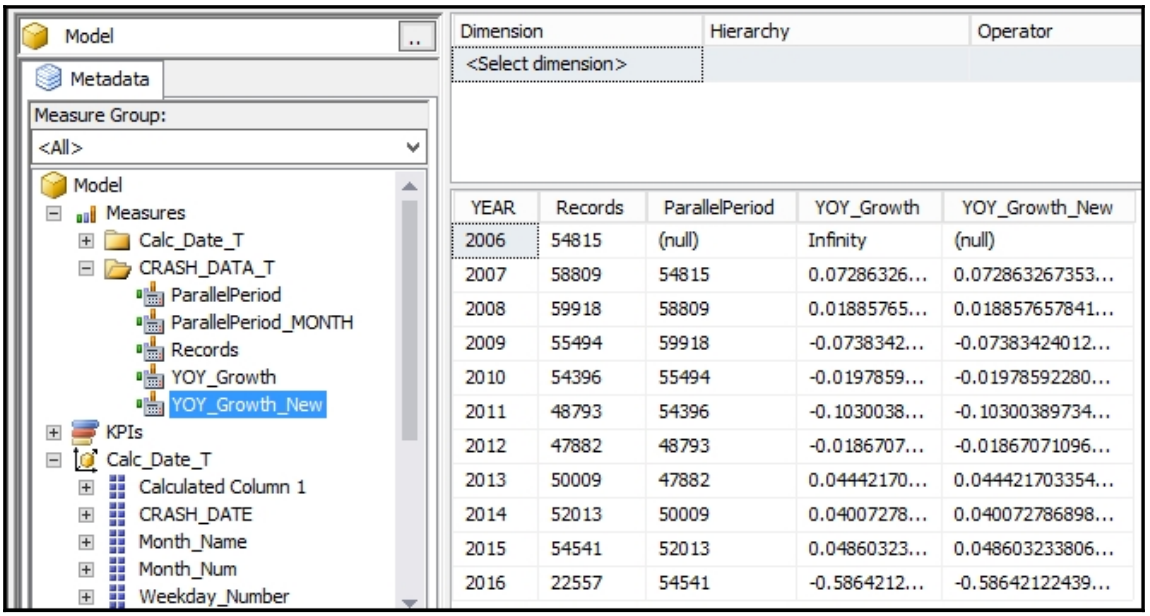


YEAR	Month_Name	Records	ParallelPeriod_MONTH	ParallelPeriod
2016	Jan	4942	5287	54541
2016	Feb	4483	4942	54541
2016	Mar	3665	4483	54541
2016	Apr	3816	3665	54541
2016	May	4304	3816	54541
2016	Jun	1347	4304	54541

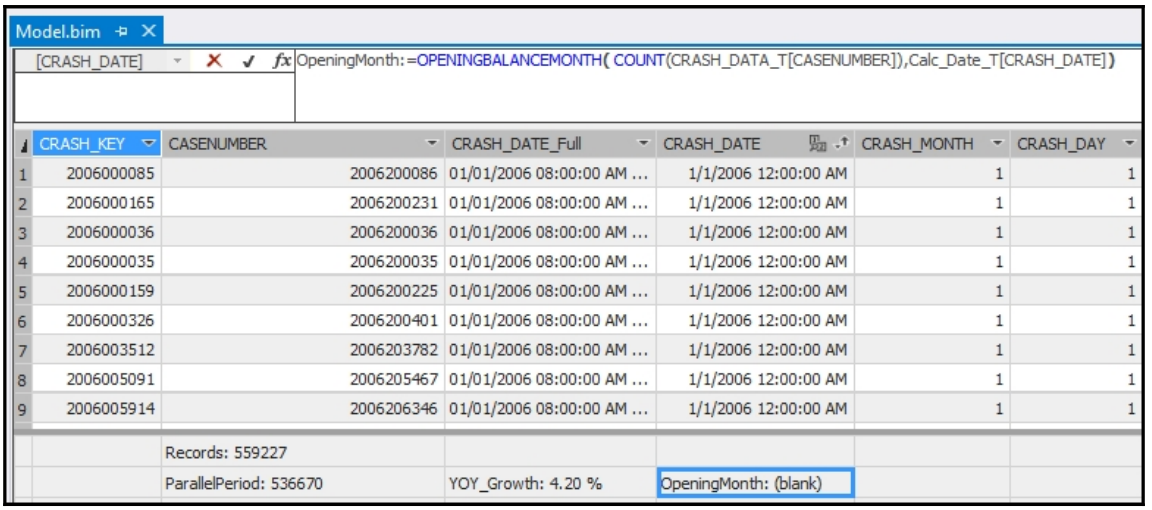

Model.bim
[CRASH_DATE_Full]
fx
YOY_Growth:=([Records] - [ParallelPeriod])/[ParallelPeriod]
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
1 2006000085 2006200086 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
2 2006000165 2006200231 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
3 2006000036 2006200036 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
4 2006000035 2006200035 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
5 2006000159 2006200225 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
6 2006000326 2006200401 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
7 2006003512 2006203782 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
8 2006005091 2006205467 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
9 2006005914 2006206346 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
10 2006000283 2006200357 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
11 2006005228 2006205616 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM
Records: 559227
ParallelPeriod: 536670
YOY_Growth: 4.20 %

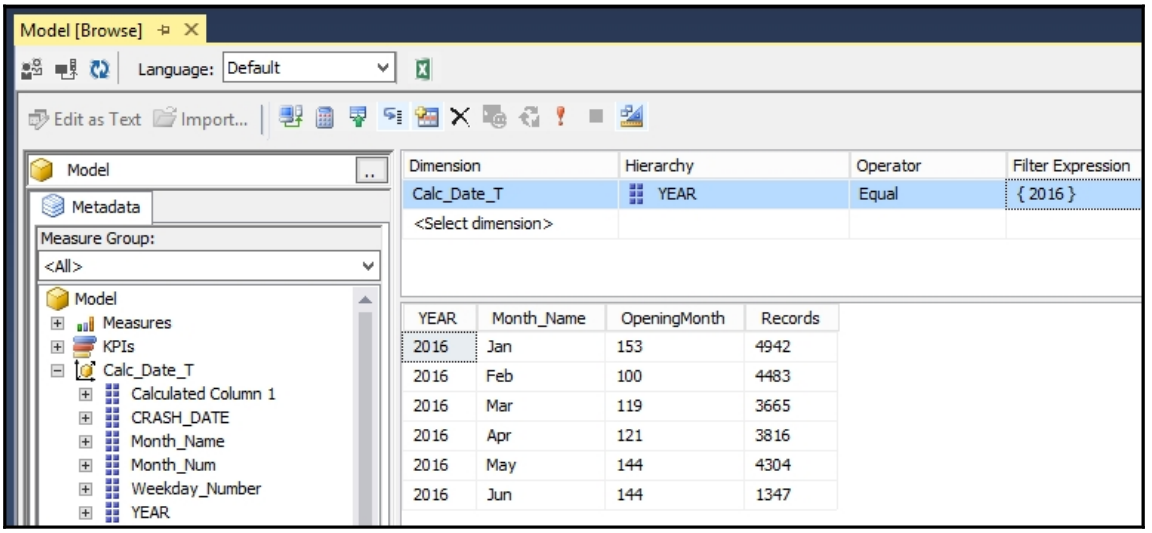


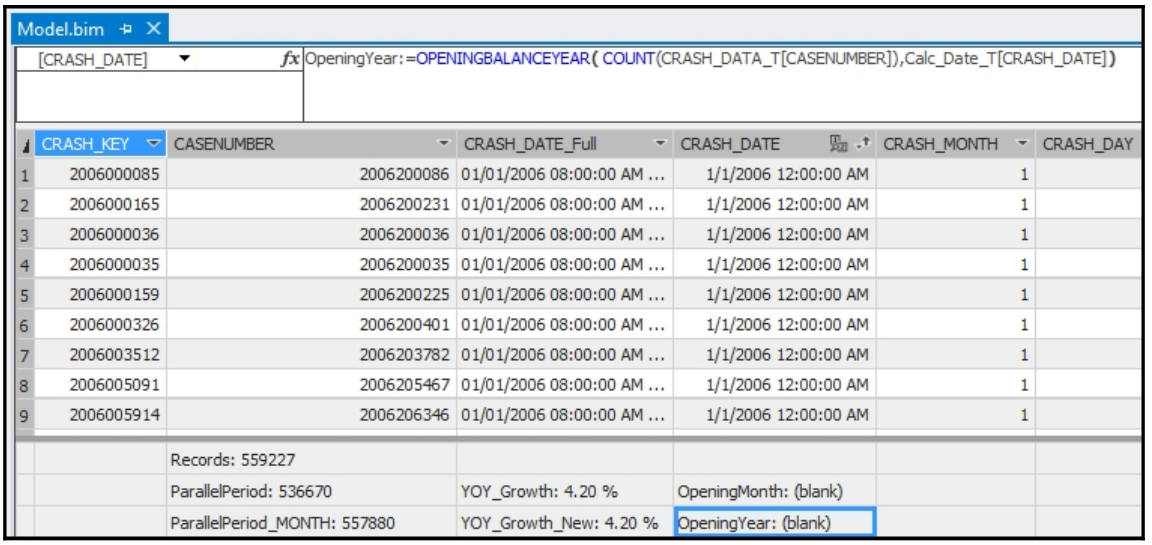
YEAR	Records	ParallelPeriod	YOY_Growth
2006	54815	(null)	Infinity
2007	58809	54815	0.07286326735...
2008	59918	58809	0.01885765784...
2009	55494	59918	-0.0738342401...
2010	54396	55494	-0.0197859228...
2011	48793	54396	-0.1030038973...
2012	47882	48793	-0.0186707109...
2013	50009	47882	0.04442170335...
2014	52013	50009	0.04007278689...
2015	54541	52013	0.04860323380...
2016	22557	54541	-0.5864212243...



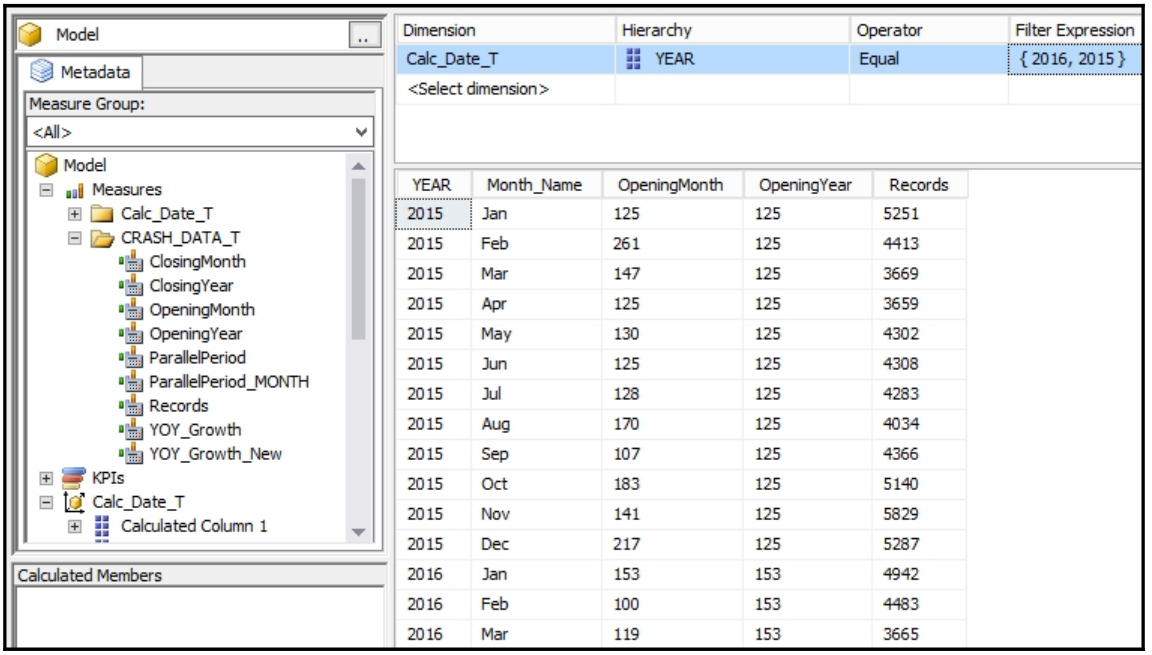
YEAR	Records	ParallelPeriod	YOY_Growth	YOY_Growth_New
2006	54815	(null)	Infinity	(null)
2007	58809	54815	0.07286326...	0.072863267353...
2008	59918	58809	0.01885765...	0.018857657841...
2009	55494	59918	-0.0738342...	-0.07383424012...
2010	54396	55494	-0.0197859...	-0.01978592280...
2011	48793	54396	-0.1030038...	-0.10300389734...
2012	47882	48793	-0.0186707...	-0.01867071096...
2013	50009	47882	0.04442170...	0.044421703354...
2014	52013	50009	0.04007278...	0.040072786898...
2015	54541	52013	0.04860323...	0.048603233806...
2016	22557	54541	-0.5864212...	-0.58642122439...


Model.bim
[CRASH_DATE]
OpeningMonth:=OPENINGBALANCEMONTH(COUNT(CRASH_DATA_T[CASENUMBER]),Calc_Date_T[CRASH_DATE])
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
CRASH_DAY
1 2006000085 2006200086 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
2 2006000165 2006200231 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
3 2006000036 2006200036 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
4 2006000035 2006200035 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
5 2006000159 2006200225 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
6 2006000326 2006200401 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
7 2006003512 2006203782 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
8 2006005091 2006205467 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
9 2006005914 2006206346 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1 1
Records: 559227
ParallelPeriod: 536670
YOY_Growth: 4.20 %
OpeningMonth: (blank)


Model [Browse]
Language: Default
Edit as Text
Import...
Model
Metadata
Measure Group:
<All>
Model
Measures
KPIs
Calc_Date_T
Calculated Column 1
CRASH_DATE
Month_Name
Month_Num
Weekday_Number
YEAR
Dimension
Hierarchy
Operator
Filter Expression
Calc_Date_T
YEAR
Equal
{ 2016 }
<Select dimension>
YEAR
Month_Name
OpeningMonth
Records
2016 Jan 153 4942
2016 Feb 100 4483
2016 Mar 119 3665
2016 Apr 121 3816
2016 May 144 4304
2016 Jun 144 1347

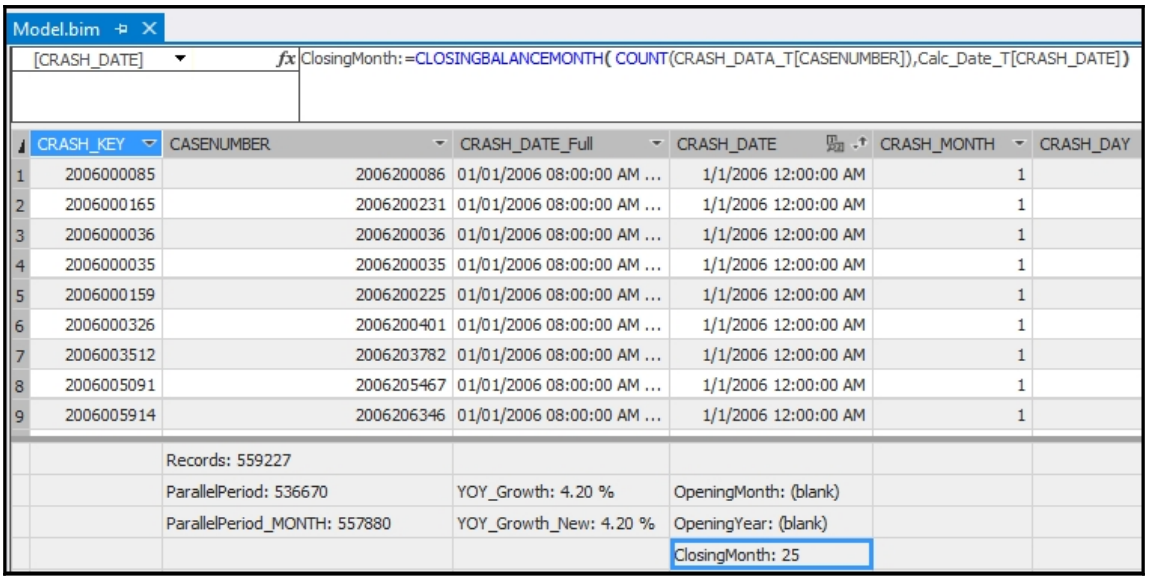


	CRASH_KEY	CASENUMBER	CRASH_DATE_Full	CRASH_DATE	CRASH_MONTH	CRASH_DAY
1	2006000085	2006200086	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
2	2006000165	2006200231	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
3	2006000036	2006200036	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
4	2006000035	2006200035	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
5	2006000159	2006200225	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
6	2006000326	2006200401	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
7	2006003512	2006203782	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
8	2006005091	2006205467	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
9	2006005914	2006206346	01/01/2006 08:00:00 AM ...	1/1/2006 12:00:00 AM	1	
		Records: 559227				
		ParallelPeriod: 536670	YOY_Growth: 4.20 %	OpeningMonth: (blank)		
		ParallelPeriod_MONTH: 557880	YOY_Growth_New: 4.20 %	OpeningYear: (blank)		

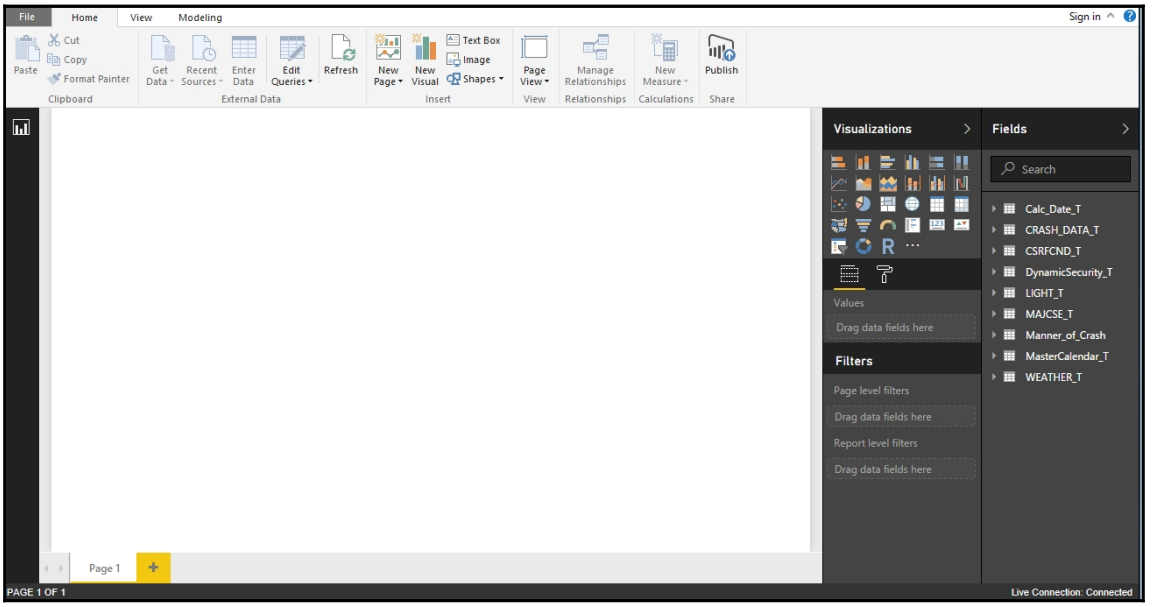


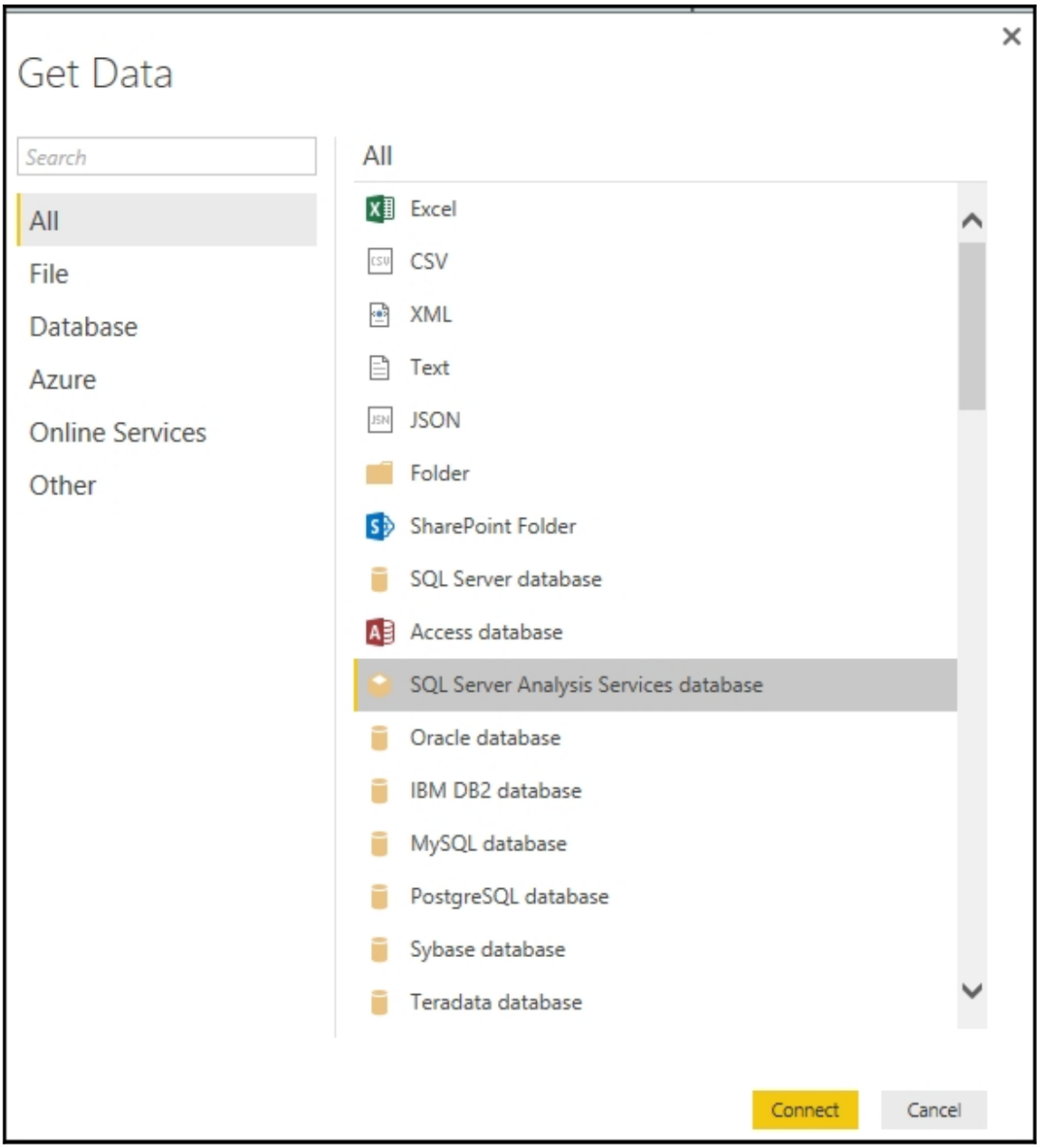
Dimension	Hierarchy	Operator	Filter Expression
Calc_Date_T	YEAR	Equal	{2016, 2015}
<Select dimension>			

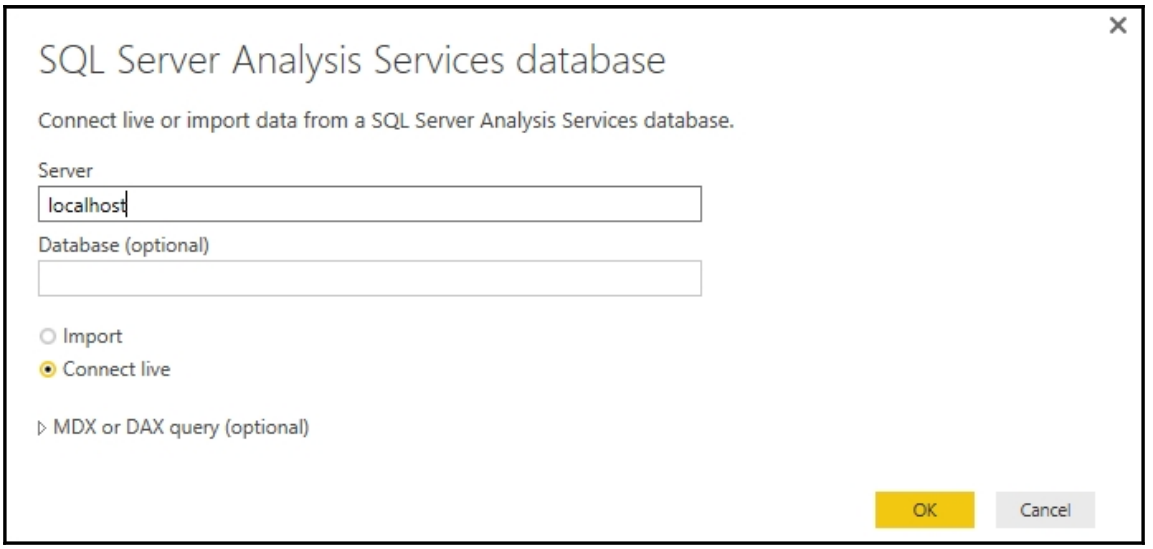
YEAR	Month_Name	OpeningMonth	OpeningYear	Records
2015	Jan	125	125	5251
2015	Feb	261	125	4413
2015	Mar	147	125	3669
2015	Apr	125	125	3659
2015	May	130	125	4302
2015	Jun	125	125	4308
2015	Jul	128	125	4283
2015	Aug	170	125	4034
2015	Sep	107	125	4366
2015	Oct	183	125	5140
2015	Nov	141	125	5829
2015	Dec	217	125	5287
2016	Jan	153	153	4942
2016	Feb	100	153	4483
2016	Mar	119	153	3665

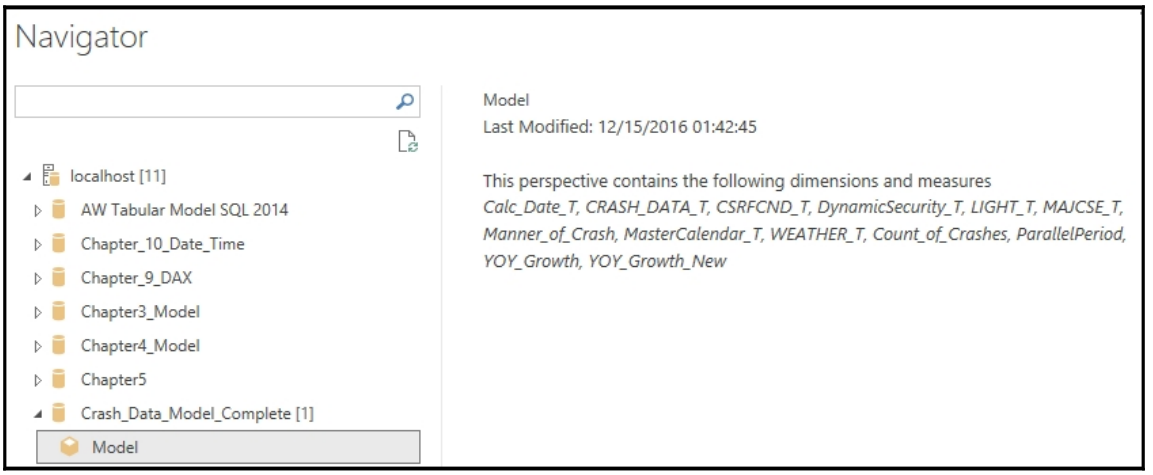

Model.bim
[CRASH_DATE]
ClosingMonth:=CLOSINGBALANCEMONTH(COUNT(CRASH_DATA_T[CASENUMBER]),Calc_Date_T[CRASH_DATE])
CRASH_KEY
CASENUMBER
CRASH_DATE_Full
CRASH_DATE
CRASH_MONTH
CRASH_DAY
1 2006000085 2006200086 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
2 2006000165 2006200231 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
3 2006000036 2006200036 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
4 2006000035 2006200035 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
5 2006000159 2006200225 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
6 2006000326 2006200401 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
7 2006003512 2006203782 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
8 2006005091 2006205467 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
9 2006005914 2006206346 01/01/2006 08:00:00 AM ... 1/1/2006 12:00:00 AM 1
Records: 559227
ParallelPeriod: 536670
YOY_Growth: 4.20 %
OpeningMonth: (blank)
ParallelPeriod_MONTH: 557880
YOY_Growth_New: 4.20 %
OpeningYear: (blank)
ClosingMonth: 25

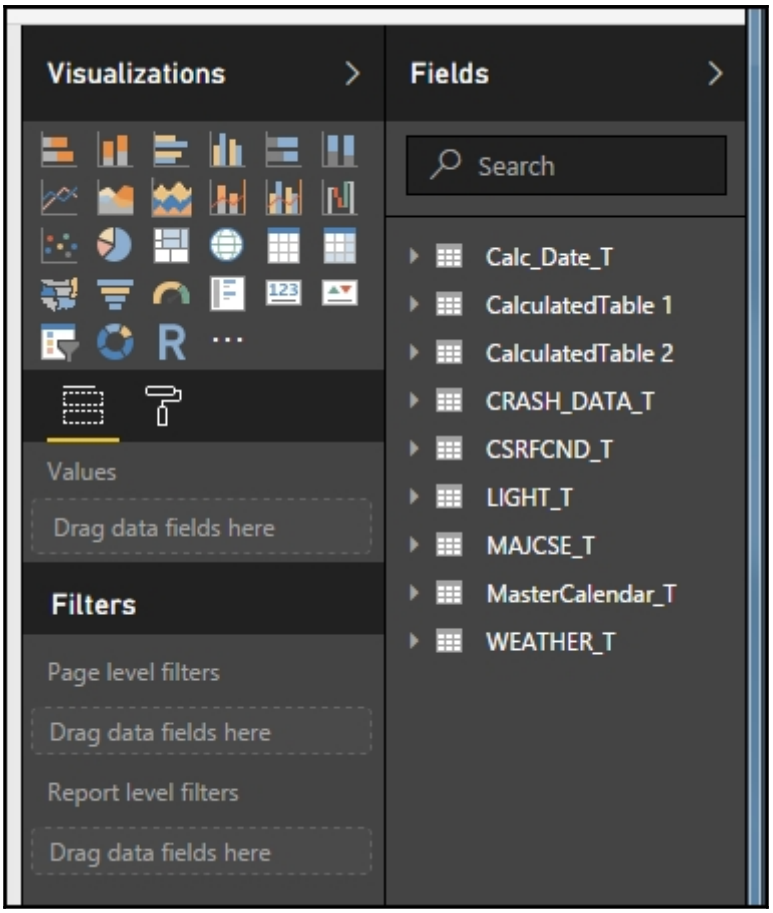
Chapter 11: Using Power BI for Analysis

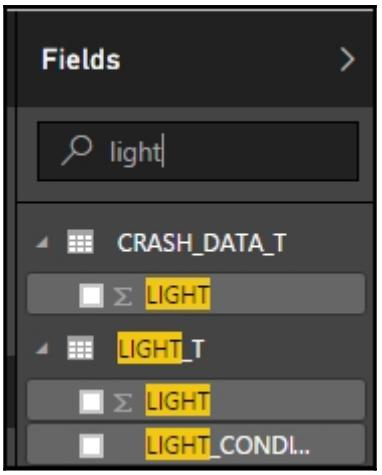


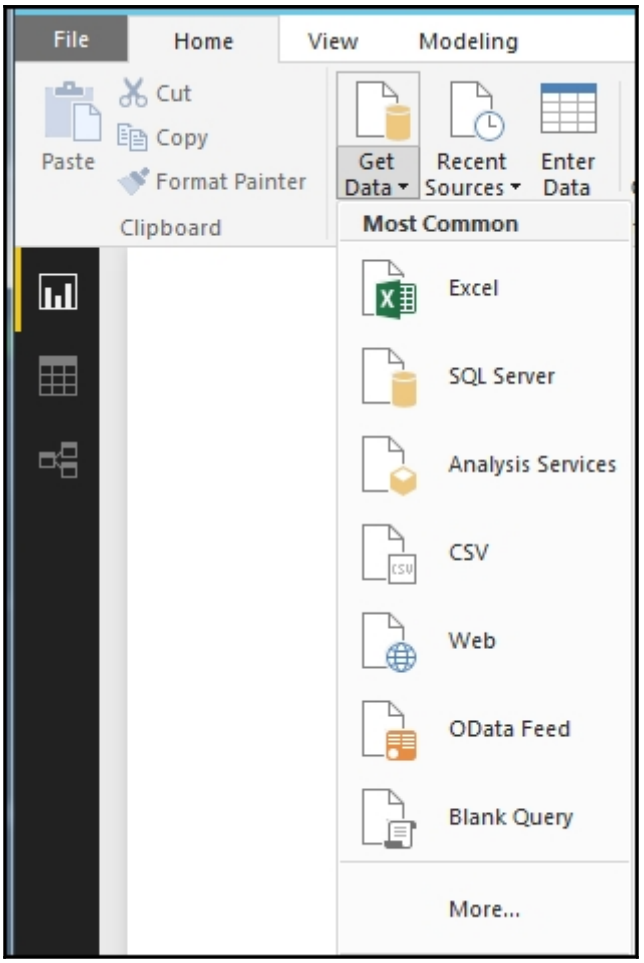

Get Data
Search
All
File
Database
Azure
Online Services
Other
All
Excel
CSV
XML
Text
JSON
Folder
SharePoint Folder
SQL Server database
Access database
SQL Server Analysis Services database
Oracle database
IBM DB2 database
MySQL database
PostgreSQL database
Sybase database
Teradata database
Connect
Cancel

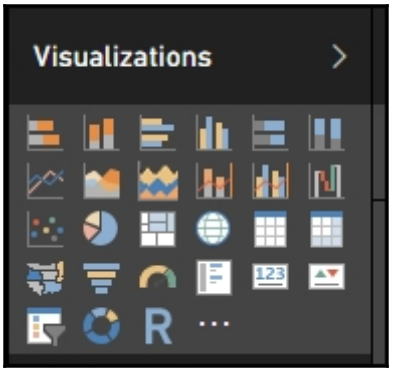

SQL Server Analysis Services database
Connect live or import data from a SQL Server Analysis Services database.
Server
localhost
Database (optional)
Import
Connect live
MDX or DAX query (optional)
OK
Cancel

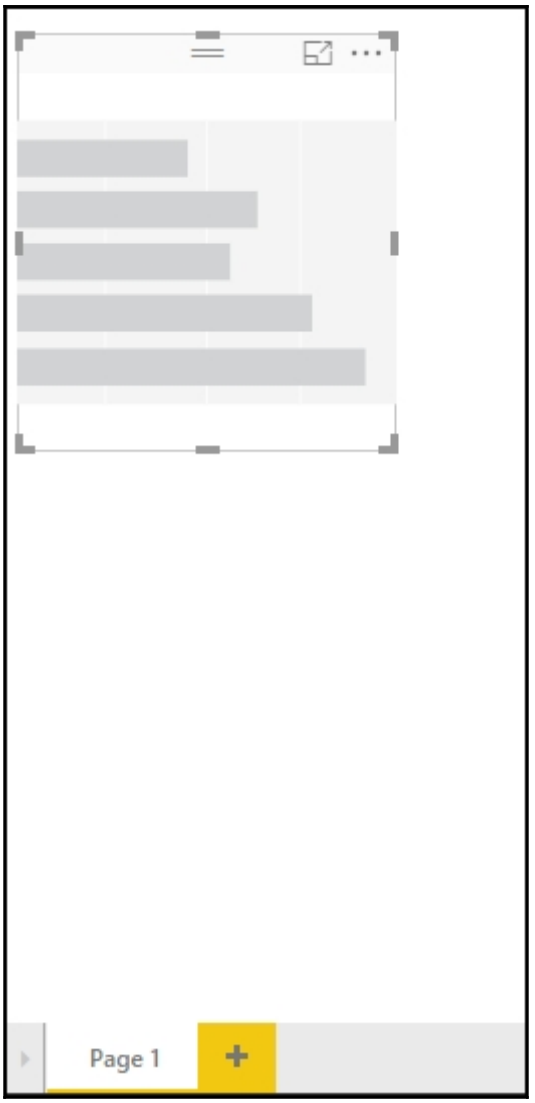

Navigator
localhost [11]
AW Tabular Model SQL 2014
Chapter_10_Date_Time
Chapter_9_DAX
Chapter3_Model
Chapter4_Model
Chapter5
Crash_Data_Model_Complete [1]
Model
Model
Last Modified: 12/15/2016 01:42:45
This perspective contains the following dimensions and measures
Calc_Date_T, CRASH_DATA_T, CSRFCND_T, DynamicSecurity_T, LIGHT_T, MAJCSE_T, Manner_of_Crash, MasterCalendar_T, WEATHER_T, Count_of_Crashes, ParallelPeriod, YOY_Growth, YOY_Growth_New

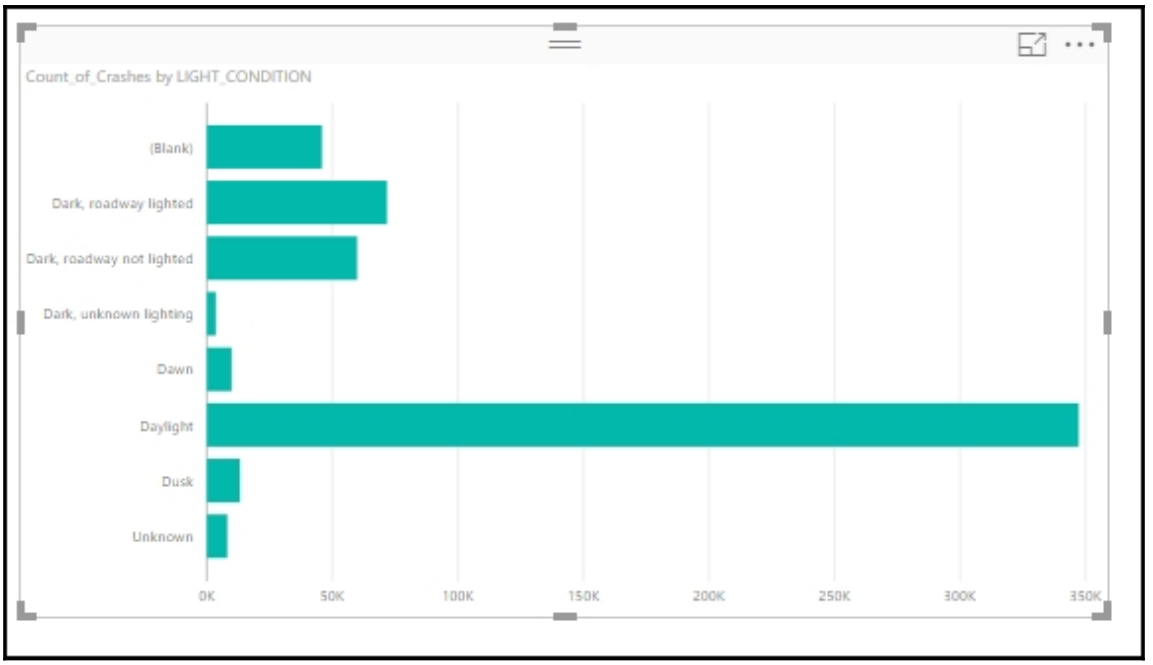

Visualizations
Fields
Search
Calc_Date_T
CalculatedTable 1
CalculatedTable 2
CRASH_DATA_T
CSRFCND_T
LIGHT_T
MAJCSE_T
MasterCalendar_T
WEATHER_T
Values
Drag data fields here
Filters
Page level filters
Drag data fields here
Report level filters
Drag data fields here

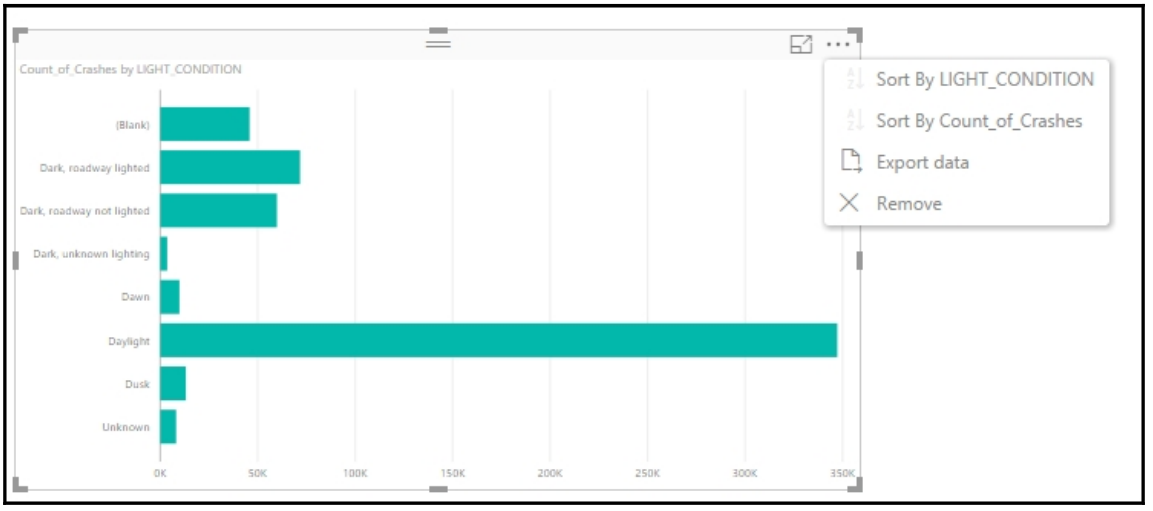

Fields
light
CRASH_DATA_T
LIGHT
LIGHT_T
LIGHT
LIGHT_CONDI...

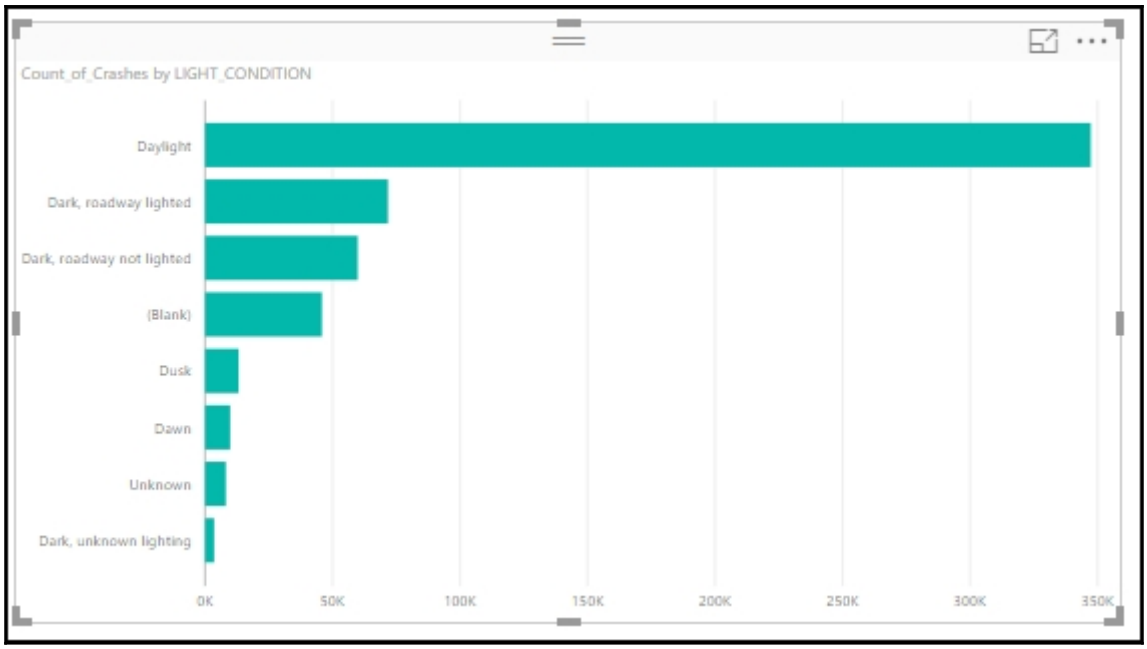

File
Home
View
Modeling
Paste
Cut
Copy
Format Painter
Clipboard
Get Data
Recent Sources
Enter Data
Most Common
Excel
SQL Server
Analysis Services
CSV
Web
OData Feed
Blank Query
More...

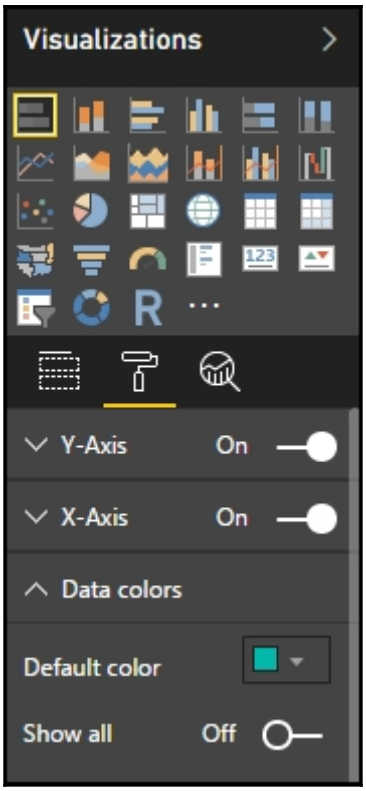

Visualizations

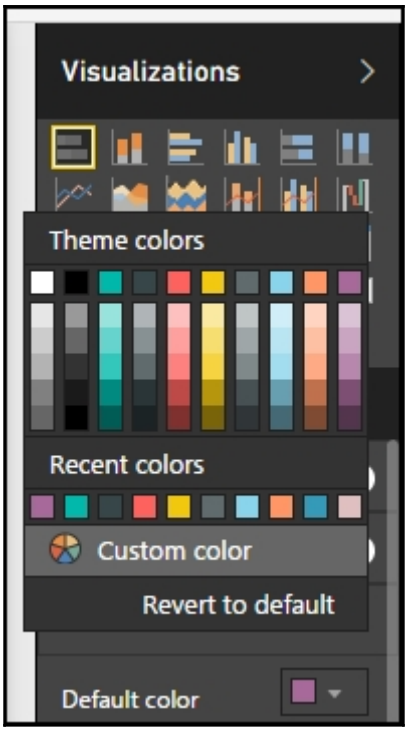

Page 1

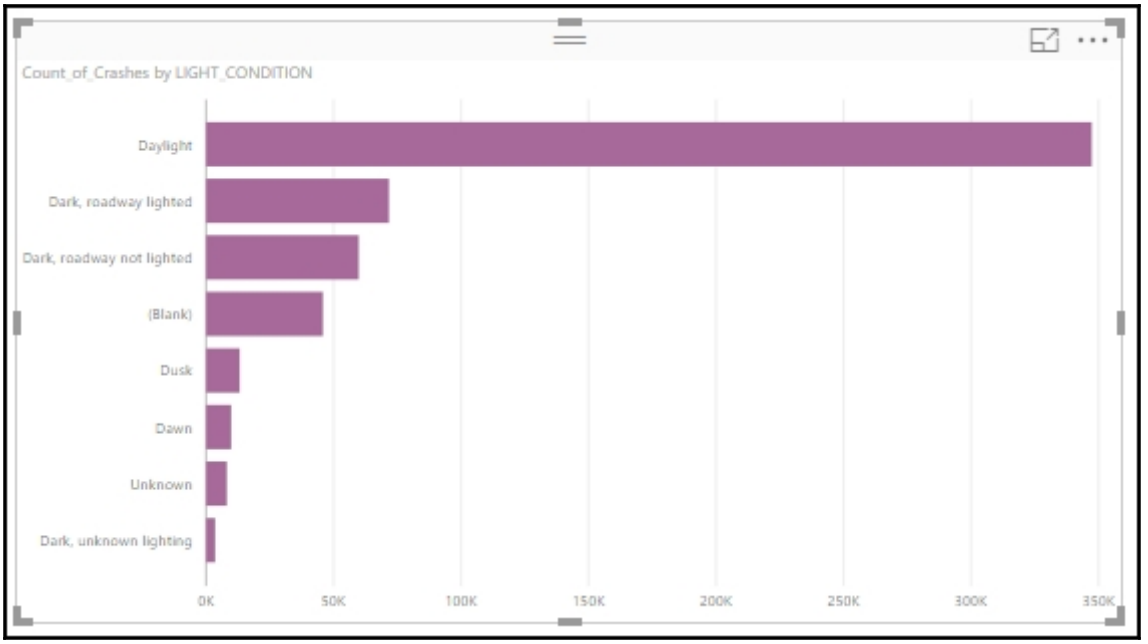

Count_of_Crashes by LIGHT_CONDITION
(Blank)
Dark, roadway lighted
Dark, roadway not lighted
Dark, unknown lighting
Dawn
Daylight
Dusk
Unknown
0K
50K
100K
150K
200K
250K
300K
350K

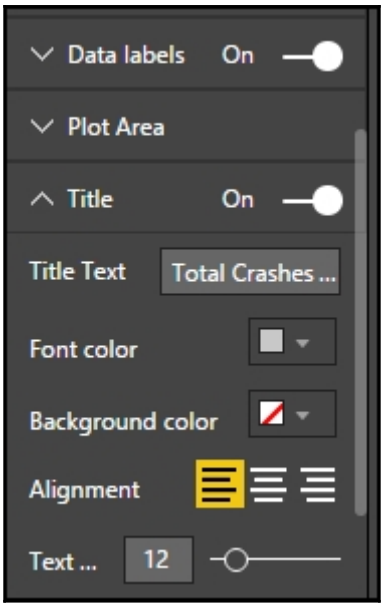

Count_of_Crashes by LIGHT_CONDITION
(Blank)
Dark, roadway lighted
Dark, roadway not lighted
Dark, unknown lighting
Dawn
Daylight
Dusk
Unknown
0K
50K
100K
150K
200K
250K
300K
350K
Sort By LIGHT_CONDITION
Sort By Count_of_Crashes
Export data
Remove

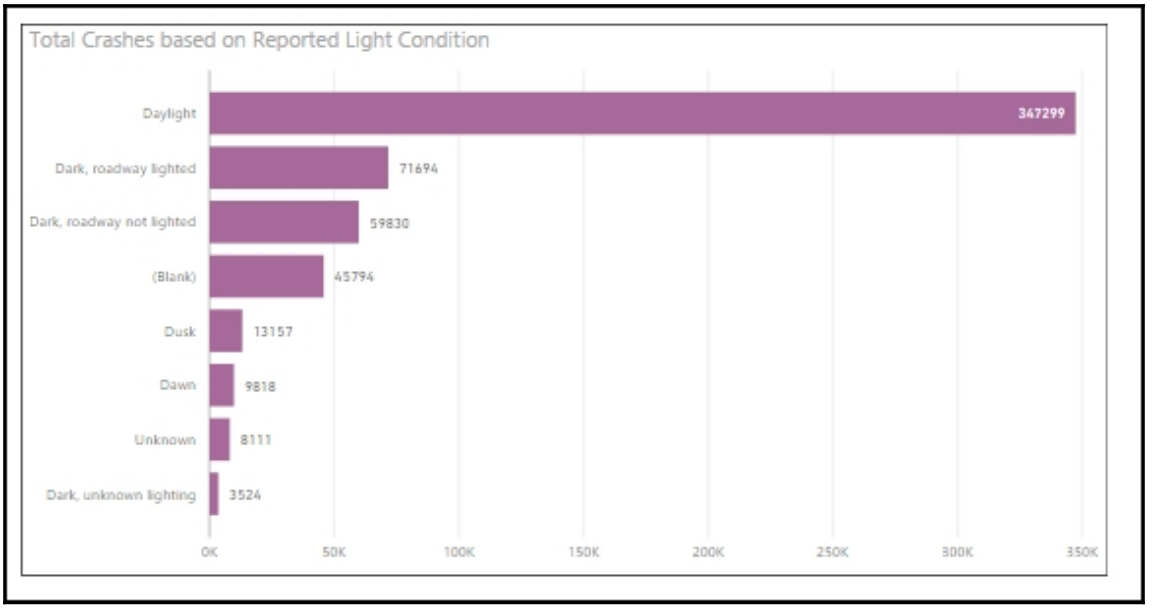

Count_of_Crashes by LIGHT_CONDITION
Daylight
Dark, roadway lighted
Dark, roadway not lighted
(Blank)
Dusk
Dawn
Unknown
Dark, unknown lighting
0K
50K
100K
150K
200K
250K
300K
350K

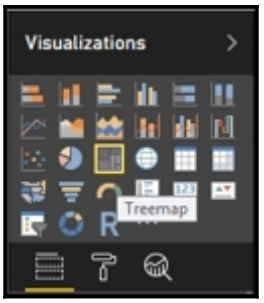

Visualizations
Y-Axis
On
X-Axis
On
Data colors
Default color
Show all
Off

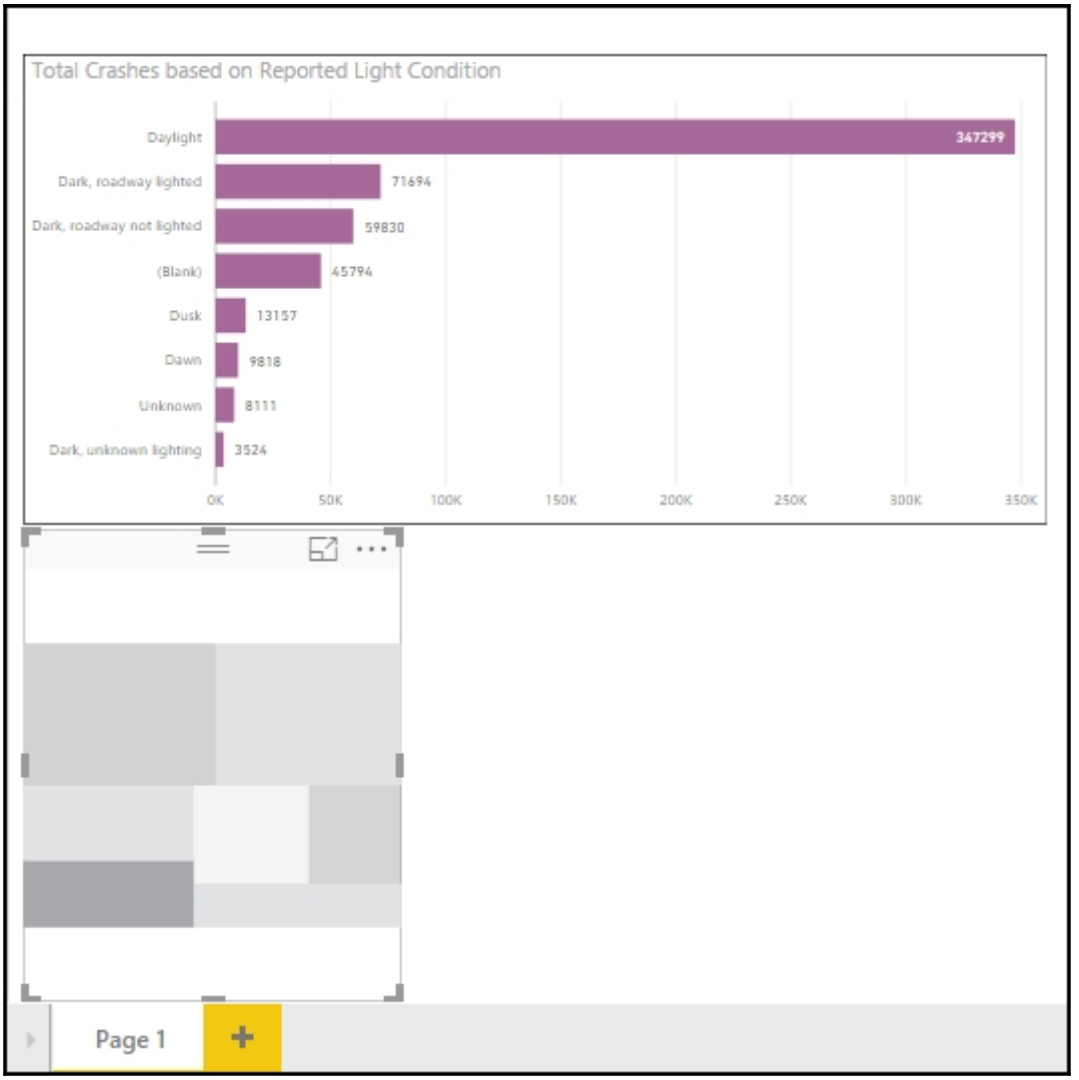

Visualizations
Theme colors
Recent colors
Custom color
Revert to default
Default color

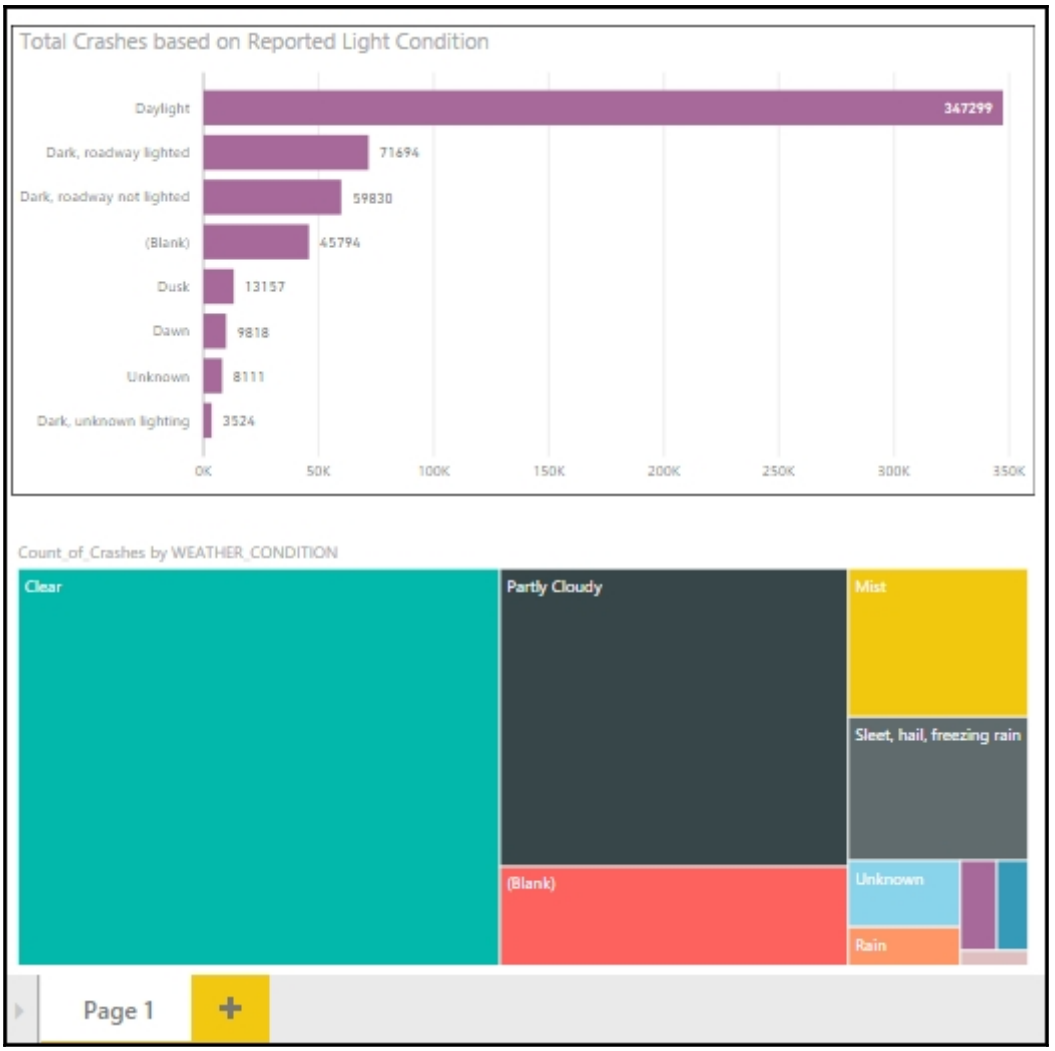

Count_of_Crashes by LIGHT_CONDITION
Daylight
Dark, roadway lighted
Dark, roadway not lighted
(Blank)
Dusk
Dawn
Unknown
Dark, unknown lighting
0K
50K
100K
150K
200K
250K
300K
350K

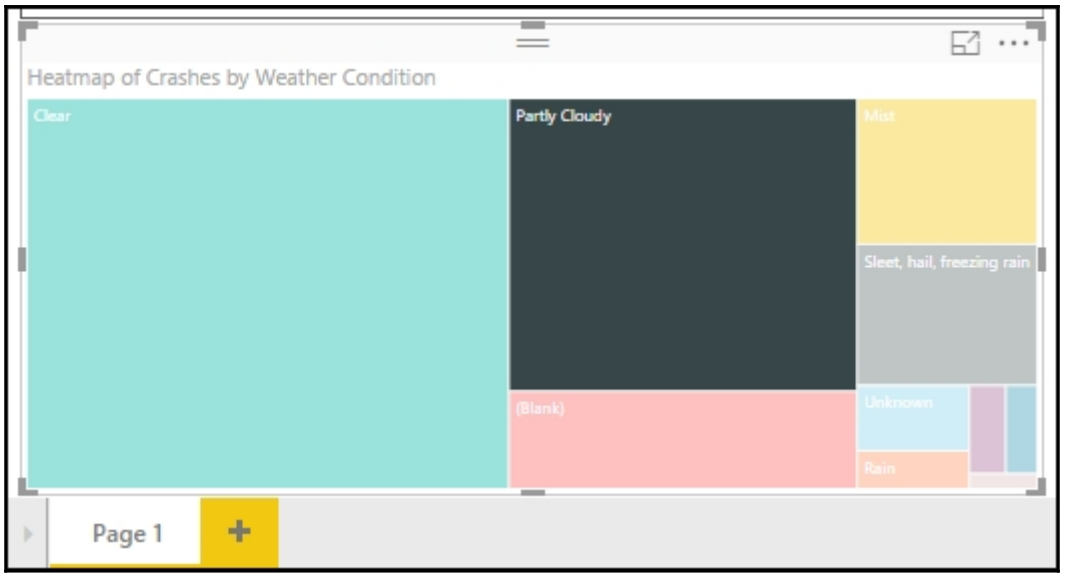

Data labels
On
Plot Area
Title
On
Title Text
Total Crashes ...
Font color
Background color
Alignment
Text ...
12

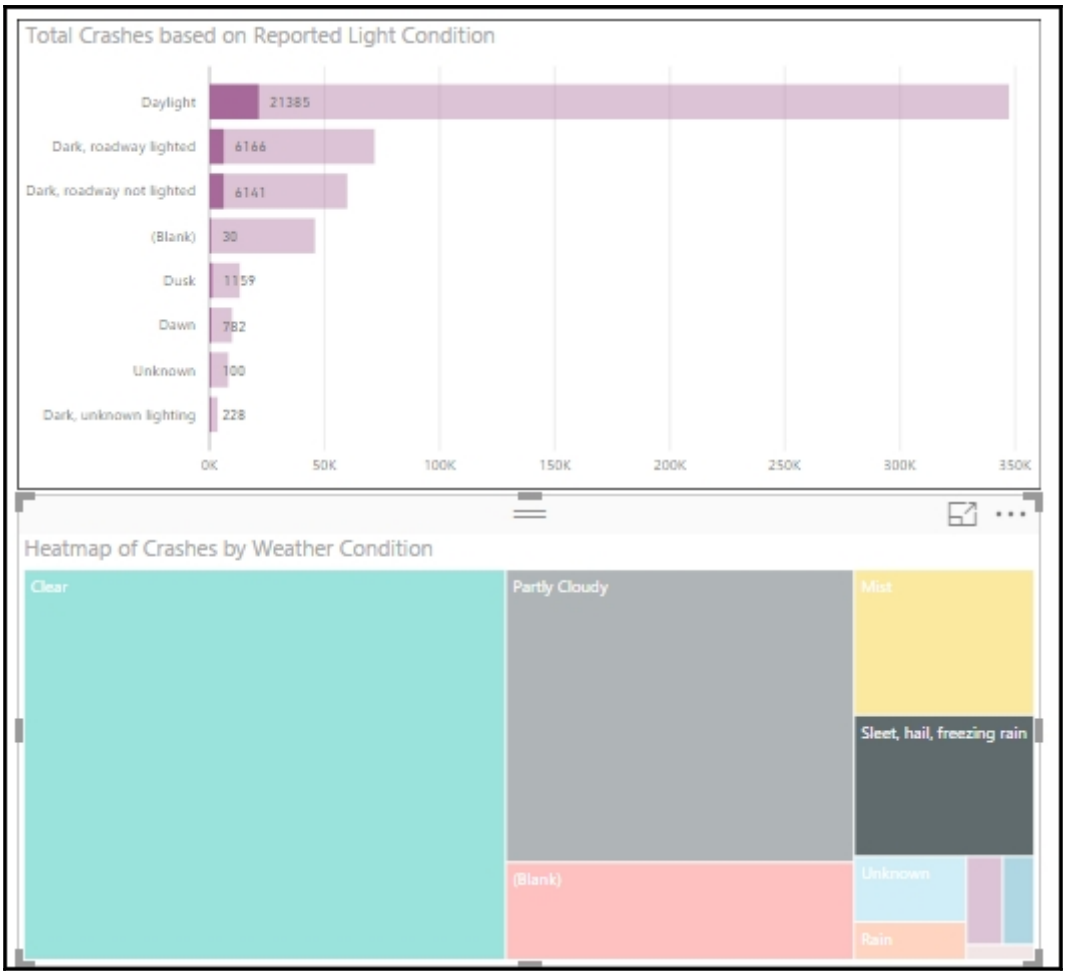

Total Crashes based on Reported Light Condition
Daylight
347299
Dark, roadway lighted
71694
Dark, roadway not lighted
59830
(Blank)
45794
Dusk
13157
Dawn
9818
Unknown
8111
Dark, unknown lighting
3524
0K
50K
100K
150K
200K
250K
300K
350K


Visualizations
Treemap


Total Crashes based on Reported Light Condition
Daylight
347299
Dark, roadway lighted
71694
Dark, roadway not lighted
59830
(Blank)
45794
Dusk
13157
Dawn
9818
Unknown
8111
Dark, unknown lighting
3524
0K
50K
100K
150K
200K
250K
300K
350K
Page 1

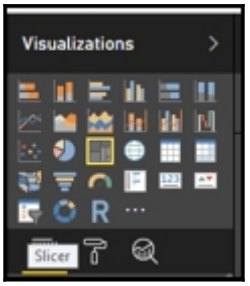

Total Crashes based on Reported Light Condition
Daylight
347299
Dark, roadway lighted
71694
Dark, roadway not lighted
59830
(Blank)
45794
Dusk
13157
Dawn
9818
Unknown
8111
Dark, unknown lighting
3524
0K
50K
100K
150K
200K
250K
300K
350K
Count_of_Crashes by WEATHER_CONDITION
Clear
Partly Cloudy
Mist
Sleet, hail, freezing rain
(Blank)
Unknown
Rain
Page 1

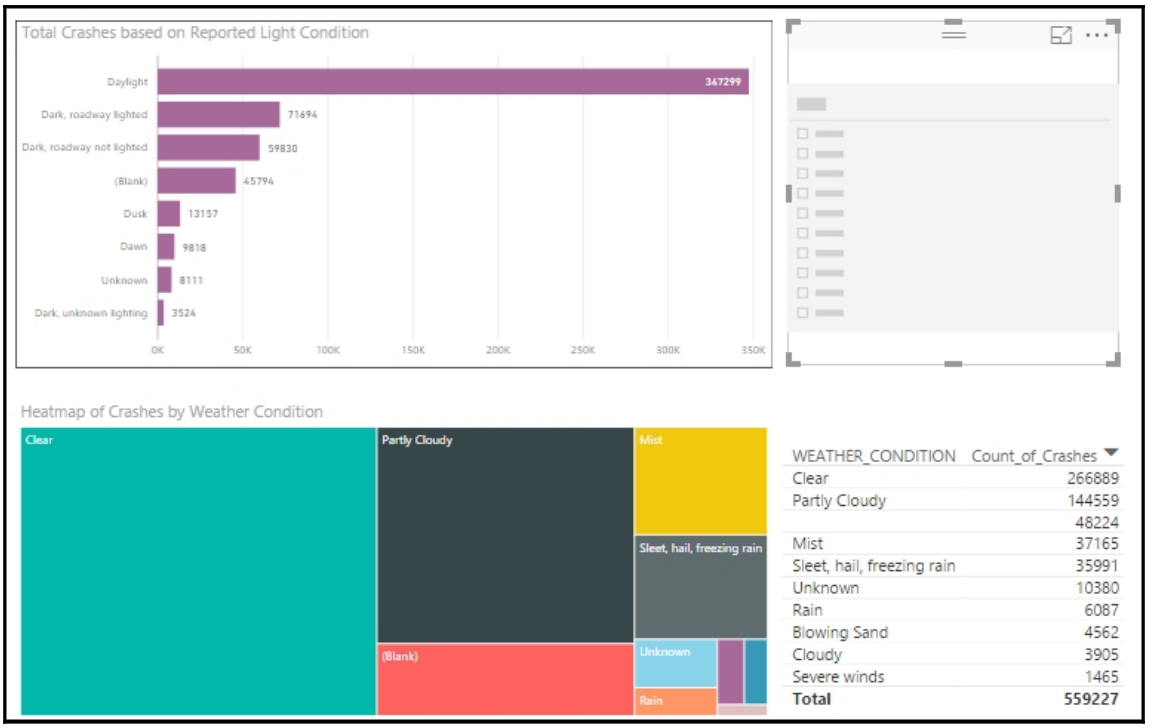

Heatmap of Crashes by Weather Condition
Clear
Partly Cloudy
Mist
Sleet, hail, freezing rain
(Blank)
Unknown
Rain
Page 1

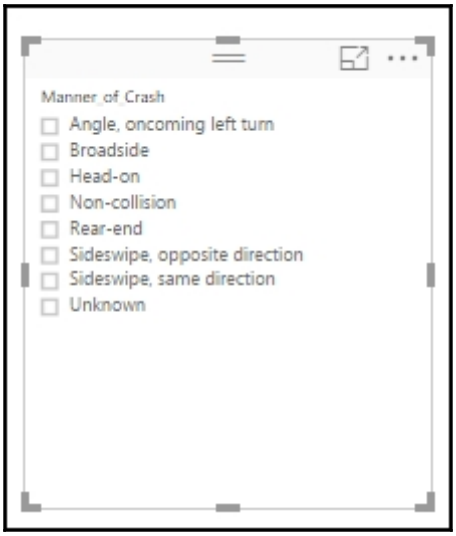

Total Crashes based on Reported Light Condition
Daylight
21385
Dark, roadway lighted
6166
Dark, roadway not lighted
6141
(Blank)
30
Dusk
1159
Dawn
782
Unknown
100
Dark, unknown lighting
228
0K
50K
100K
150K
200K
250K
300K
350K
Heatmap of Crashes by Weather Condition
Clear
Partly Cloudy
Mist
Sleet, hail, freezing rain
(Blank)
Unknown
Rain

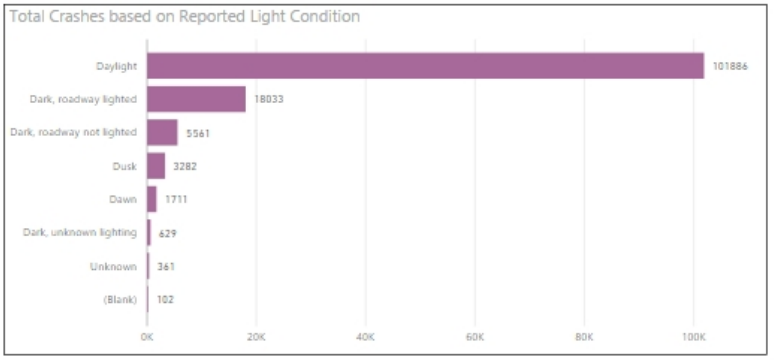

Visualizations
Table

WEATHER_CONDITION	Count_of_Crashes
Clear	266889
Partly Cloudy	144559
	48224
Mist	37165
Sleet, hail, freezing rain	35991
Unknown	10380
Rain	6087
Blowing Sand	4562
Cloudy	3905
Severe winds	1465
Total	**559227**




Total Crashes based on Reported Light Condition
Daylight
347299
Dark, roadway lighted
71694
Dark, roadway not lighted
59830
(Blank)
45794
Dusk
13157
Dawn
9818
Unknown
8111
Dark, unknown lighting
3524
0K
50K
100K
150K
200K
250K
300K
350K
Heatmap of Crashes by Weather Condition
Clear
Partly Cloudy
Mist
Sleet, hail, freezing rain
(Blank)
Unknown
Rain
WEATHER_CONDITION
Count_of_Crashes
Clear 266889
Partly Cloudy 144559
48224
Mist 37165
Sleet, hail, freezing rain 35991
Unknown 10380
Rain 6087
Blowing Sand 4562
Cloudy 3905
Severe winds 1465
Total 559227

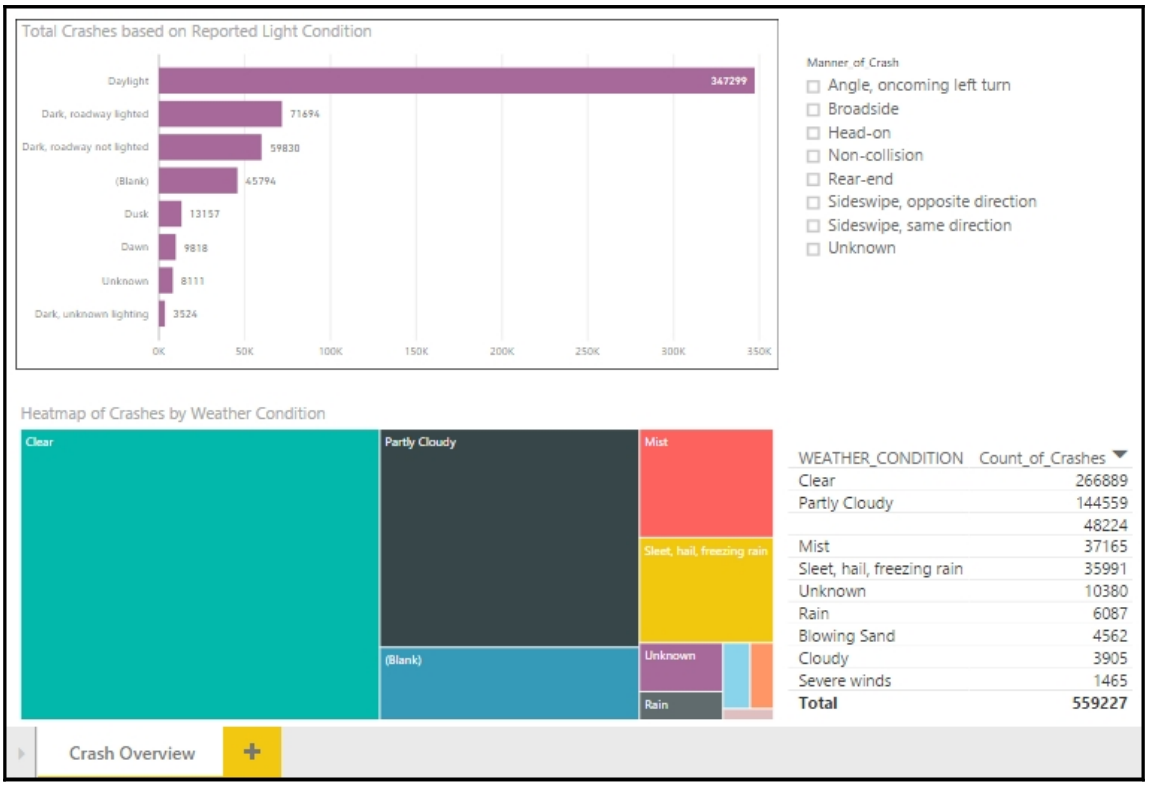

Manner_of_Crash
Angle, oncoming left turn
Broadside
Head-on
Non-collision
Rear-end
Sideswipe, opposite direction
Sideswipe, same direction
Unknown

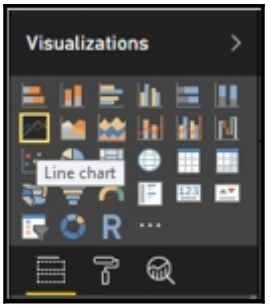


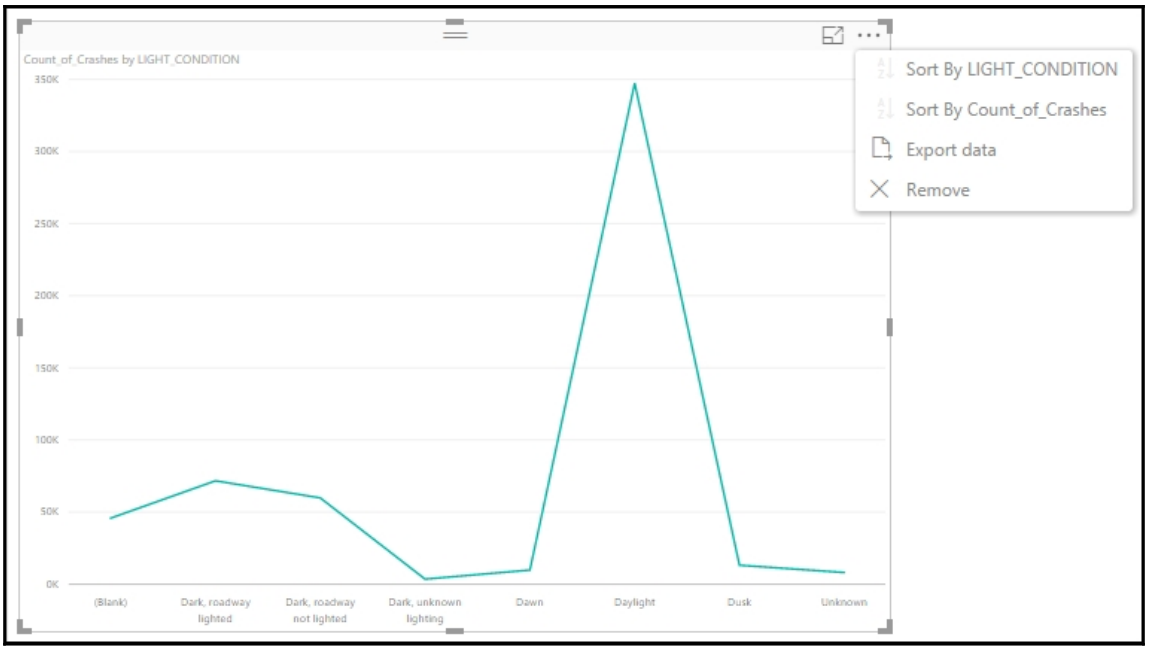
Manner_of_Crash

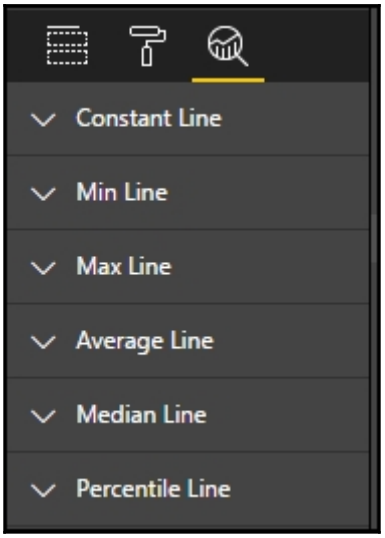
- Angle, oncoming left turn
- Broadside
- Head-on
- Non-collision
- Rear-end
- Sideswipe, opposite direction
- Sideswipe, same direction
- Unknown

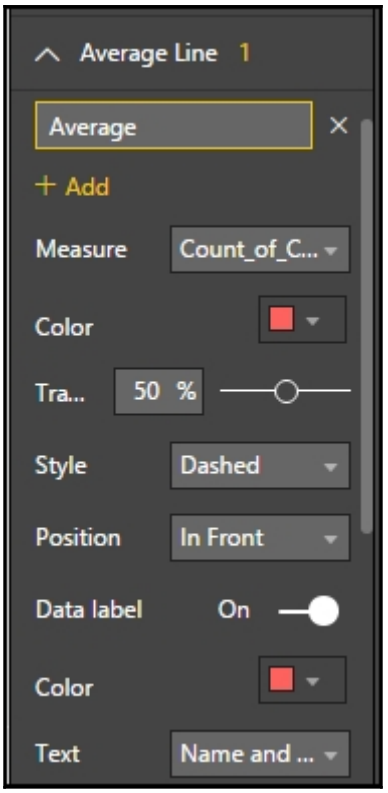
WEATHER_CONDITION	Count_of_Crashes
Clear	70747
Partly Cloudy	39108
Mist	11379
Sleet, hail, freezing rain	6663
Rain	889
Blowing Sand	833
Cloudy	657
Unknown	626
	501
Severe winds	162
Total	**131565**

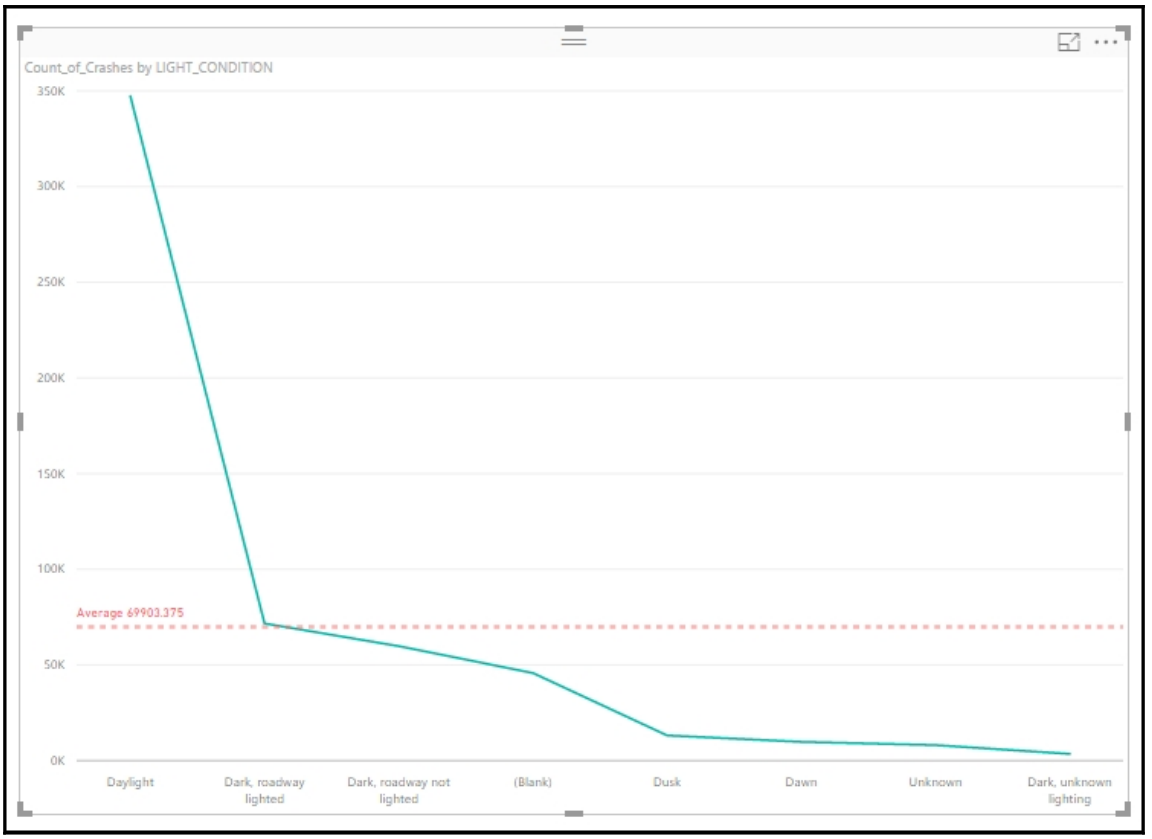

Total Crashes based on Reported Light Condition
Daylight
347299
Dark, roadway lighted
71694
Dark, roadway not lighted
59830
(Blank)
45794
Dusk
13157
Dawn
9818
Unknown
8111
Dark, unknown lighting
3524
0K
50K
100K
150K
200K
250K
300K
350K
Manner of Crash
Angle, oncoming left turn
Broadside
Head-on
Non-collision
Rear-end
Sideswipe, opposite direction
Sideswipe, same direction
Unknown
Heatmap of Crashes by Weather Condition
Clear
Partly Cloudy
Mist
Sleet, hail, freezing rain
(Blank)
Unknown
Rain
WEATHER_CONDITION
Count_of_Crashes
Clear 266889
Partly Cloudy 144559
48224
Mist 37165
Sleet, hail, freezing rain 35991
Unknown 10380
Rain 6087
Blowing Sand 4562
Cloudy 3905
Severe winds 1465
Total 559227
Crash Overview

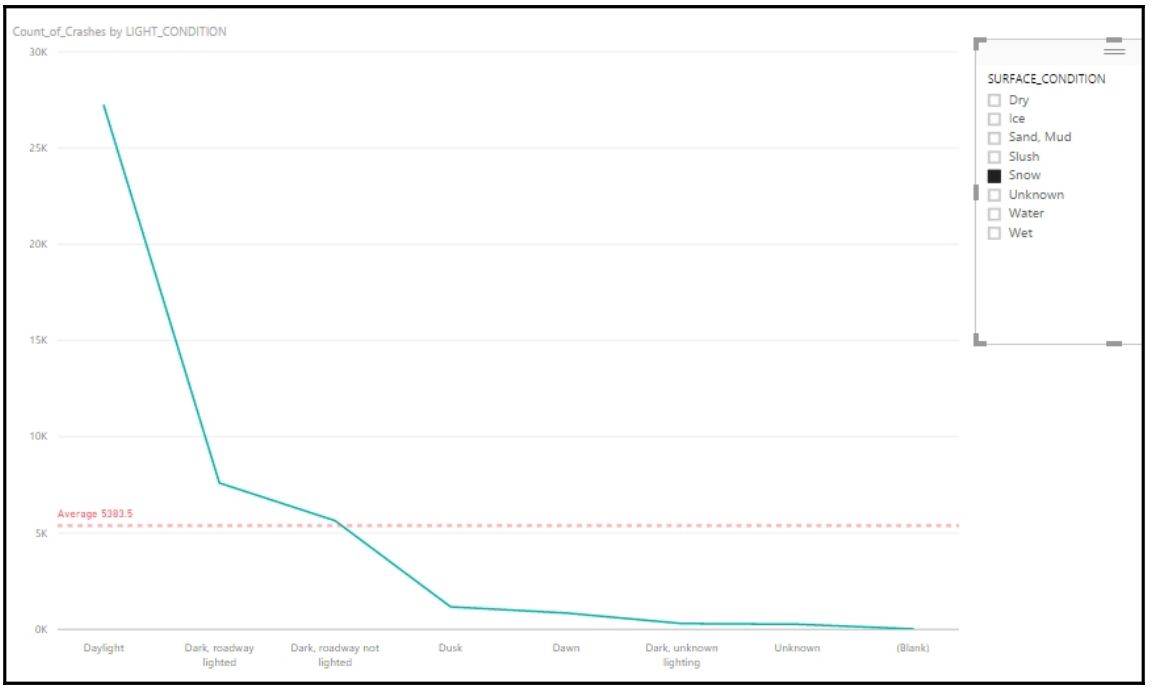

Visualizations
Line chart


Count_of_Crashes by LIGHT_CONDITION
350K
300K
250K
200K
150K
100K
50K
0K
(Blank)
Dark, roadway lighted
Dark, roadway not lighted
Dark, unknown lighting
Dawn
Daylight
Dusk
Unknown
Sort By LIGHT_CONDITION
Sort By Count_of_Crashes
Export data
Remove


Constant Line
Min Line
Max Line
Average Line
Median Line
Percentile Line


Average Line 1
Average
+ Add
Measure
Count_of_C...
Color
Tra...
50 %
Style
Dashed
Position
In Front
Data label
On
Color
Text
Name and ...


Count_of_Crashes by LIGHT_CONDITION
350K
300K
250K
200K
150K
100K
Average 69903.375
50K
0K
Daylight
Dark, roadway lighted
Dark, roadway not lighted
(Blank)
Dusk
Dawn
Unknown
Dark, unknown lighting


Count_of_Crashes by LIGHT_CONDITION
30K
25K
20K
15K
10K
5K
0K
Average 5383.5
Daylight
Dark, roadway lighted
Dark, roadway not lighted
Dusk
Dawn
Dark, unknown lighting
Unknown
(Blank)
SURFACE_CONDITION
Dry
Ice
Sand, Mud
Slush
Snow
Unknown
Water
Wet