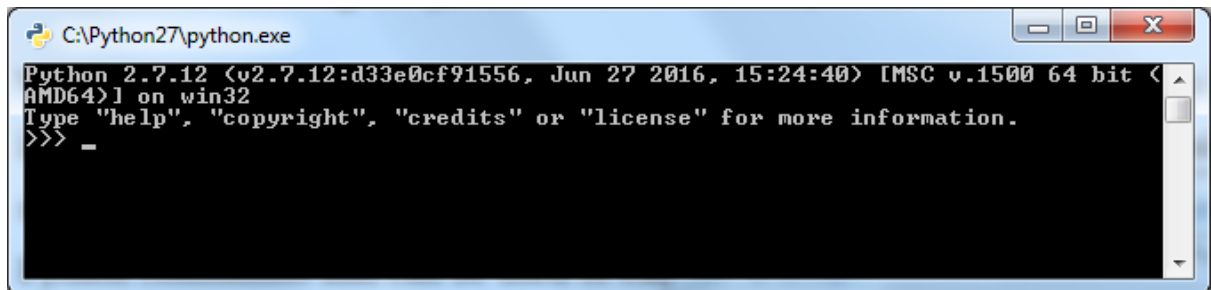
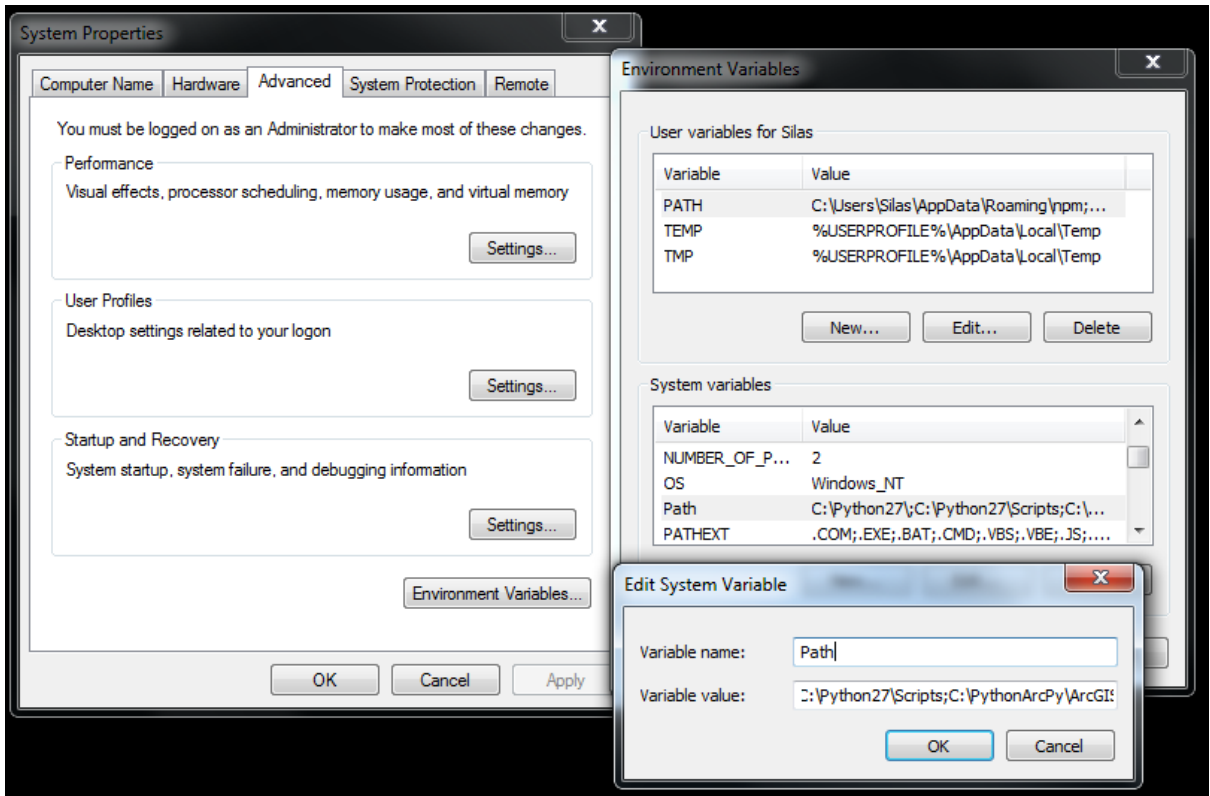


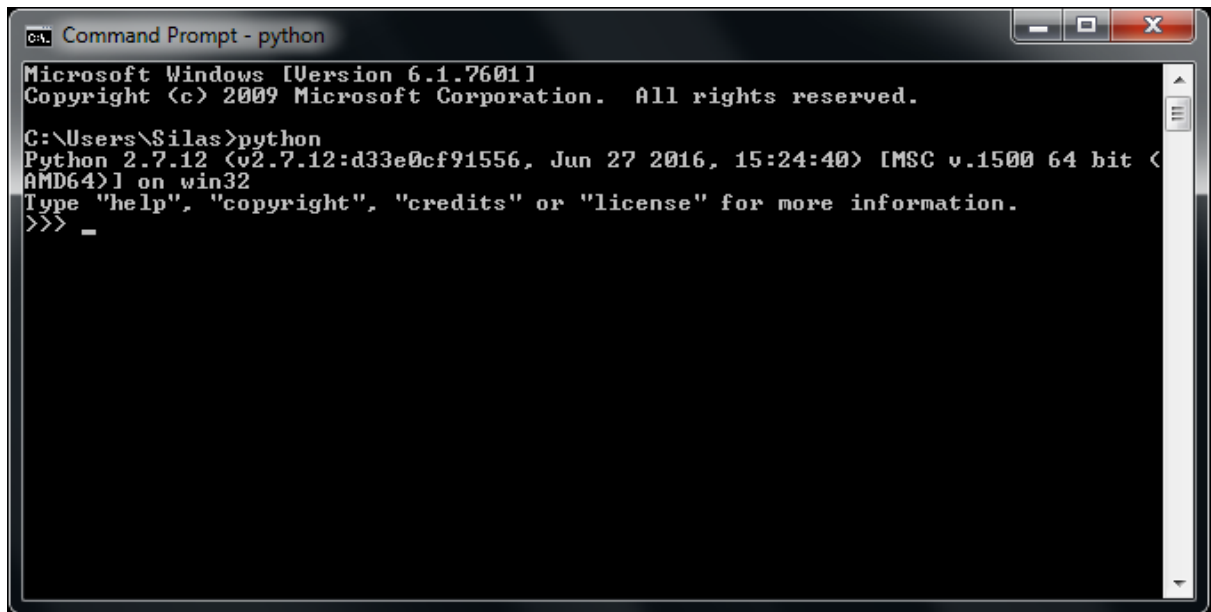
Chapter 1: Introduction to Python for ArcGIS



A screenshot of a Windows command prompt window titled "C:\Python27\python.exe". The window displays the following text:

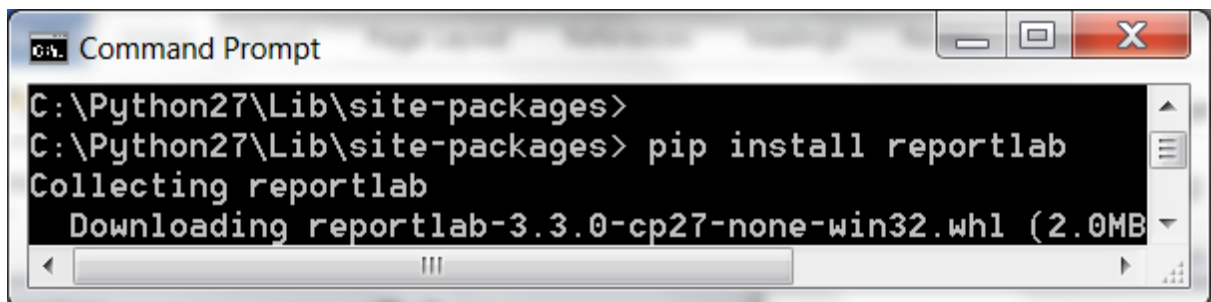
```
Python 2.7.12 (v2.7.12:d33e0cf91556, Jun 27 2016, 15:24:40) [MSC v.1500 64 bit <
AMD64>] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> _
```





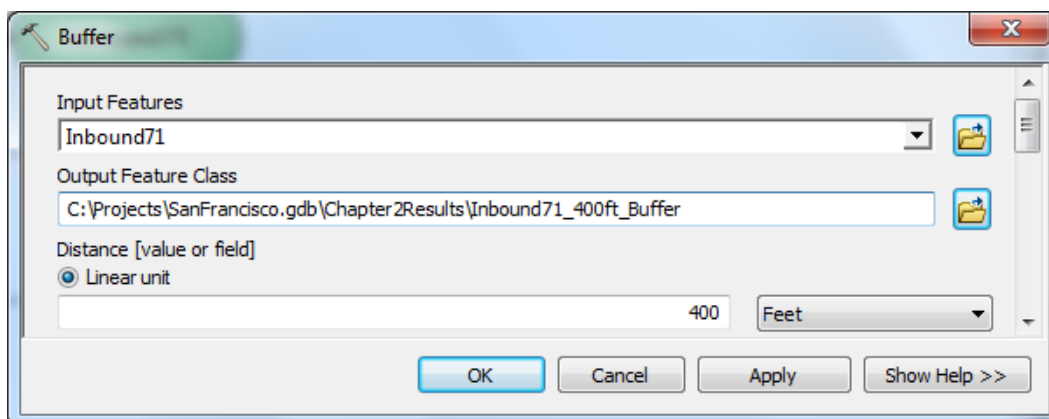
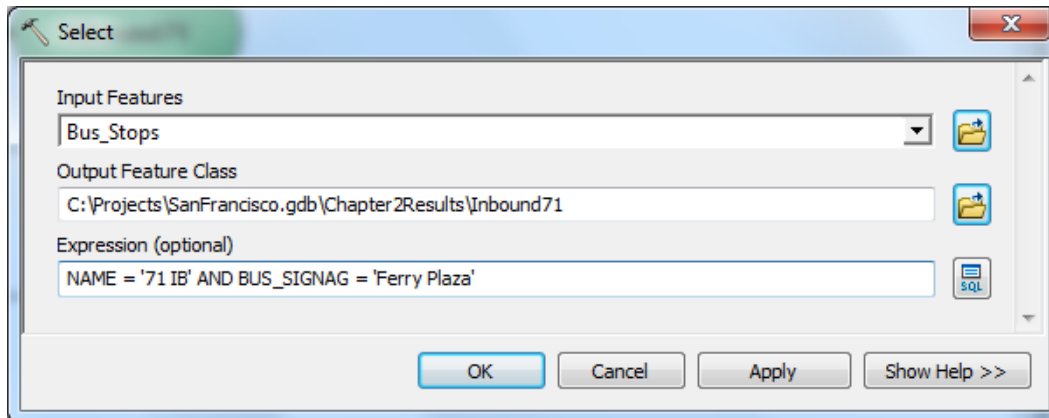
```
ca. Command Prompt - python
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

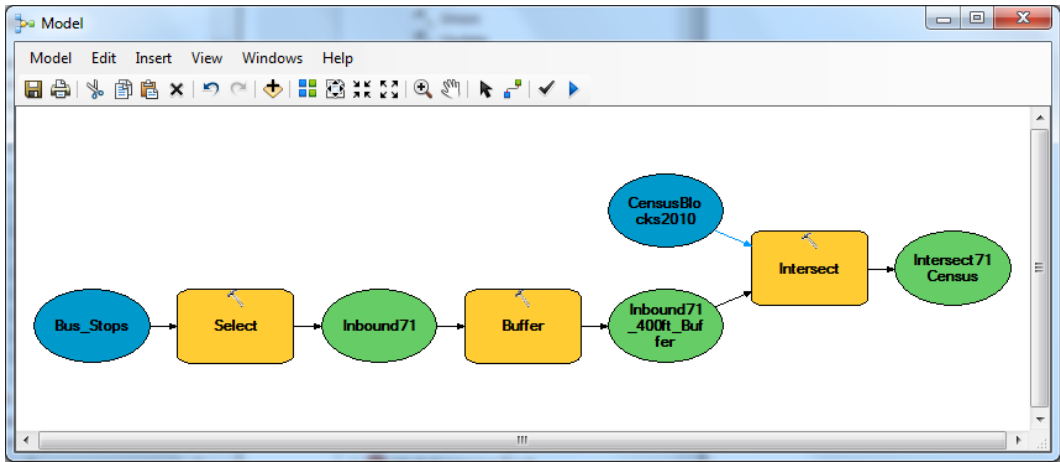
C:\Users\Silas>python
Python 2.7.12 (v2.7.12:d33e0cf91556, Jun 27 2016, 15:24:40) [MSC v.1500 64 bit <
AMD64>] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> _
```



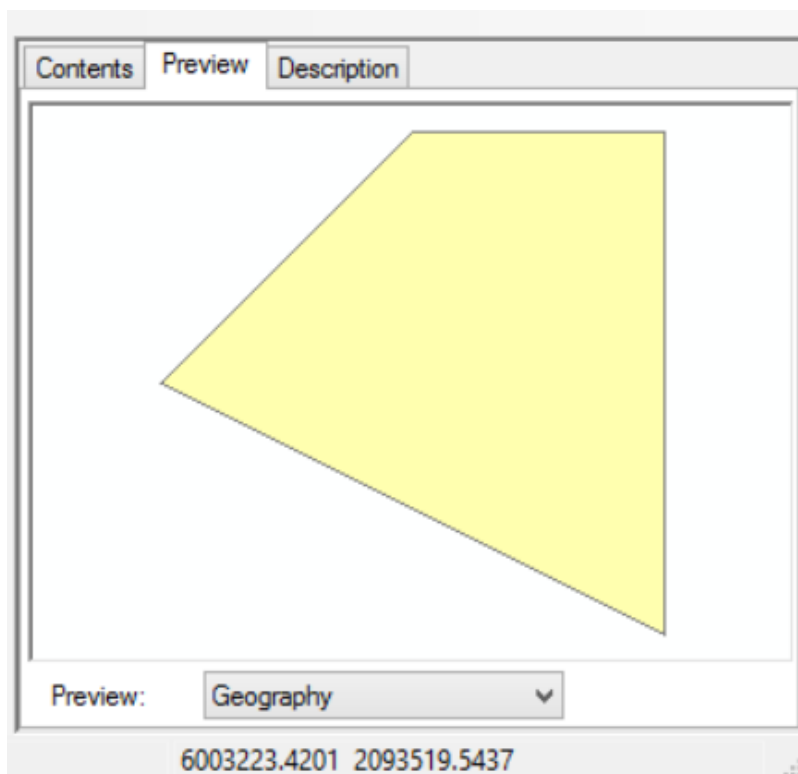
```
ca. Command Prompt
C:\Python27\Lib\site-packages>
C:\Python27\Lib\site-packages> pip install reportlab
Collecting reportlab
  Downloading reportlab-3.3.0-cp27-none-win32.whl (2.0MB
```

Chapter 2: Creating the First Python Script

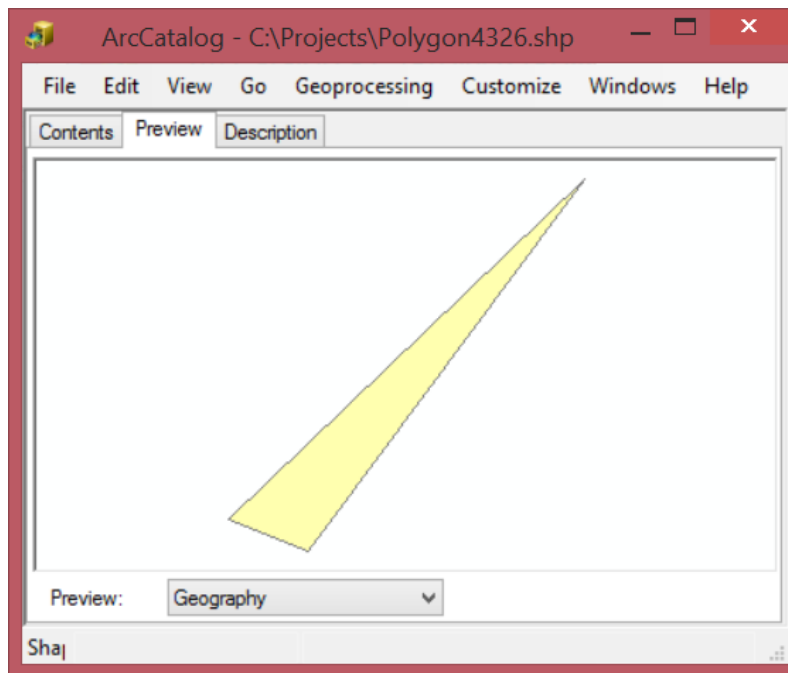


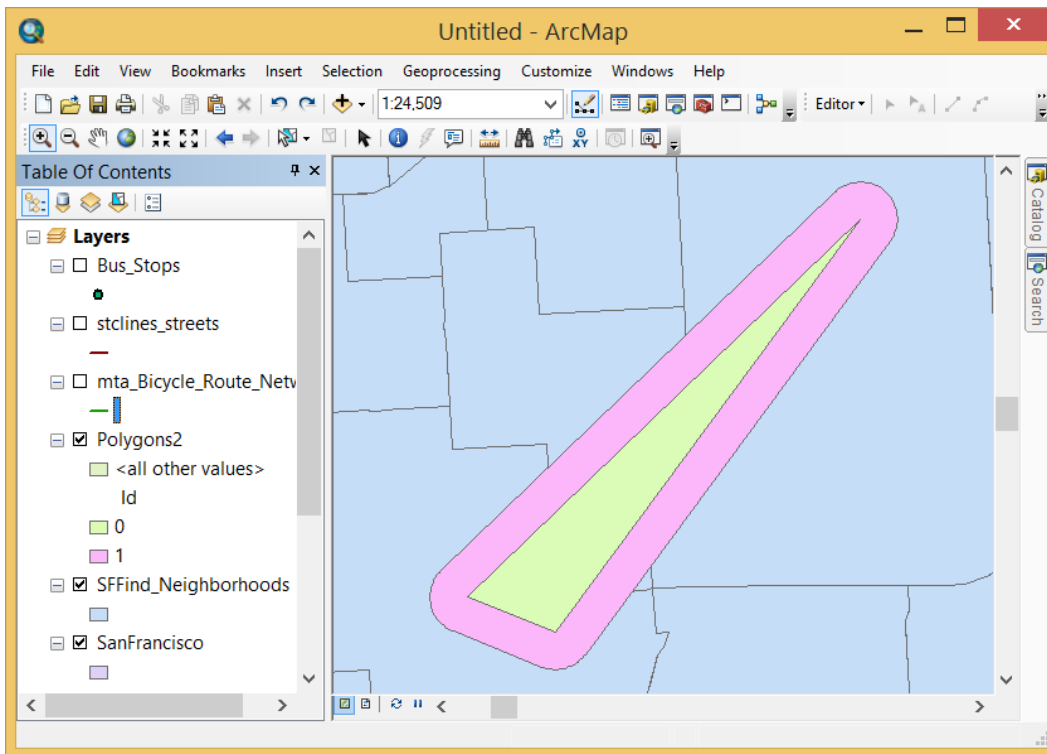


Chapter 3: ArcPy Cursors - Search, Insert, and Update

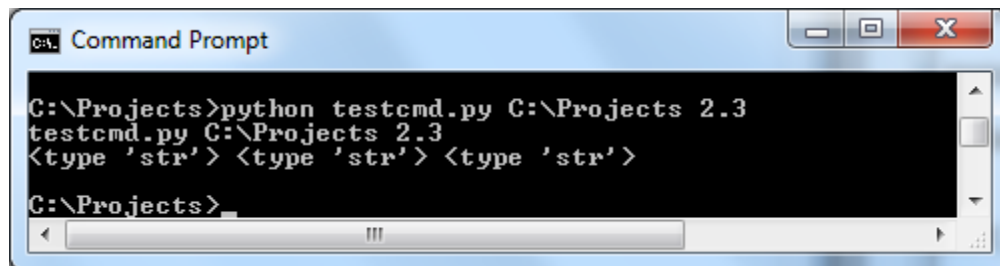


Chapter 4: ArcPy Geometry Objects and Cursors

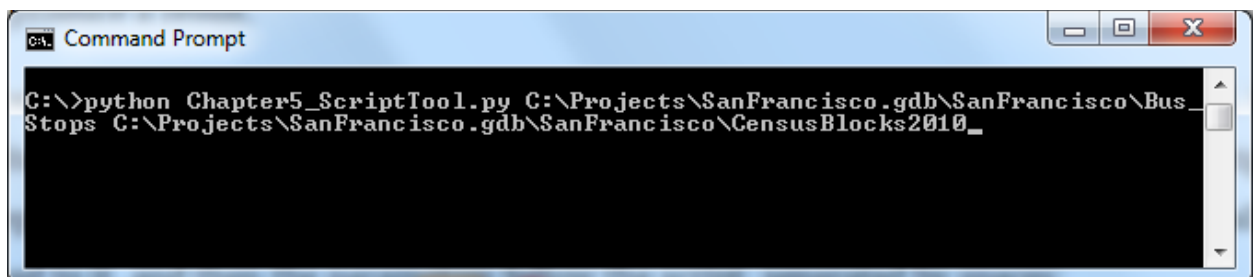




Chapter 5: Creating a Script Tool



```
ca. Command Prompt
C:\Projects>python testcmd.py C:\Projects 2.3
testcmd.py C:\Projects 2.3
<type 'str'> <type 'str'> <type 'str'>
C:\Projects>
```




```
ca. Command Prompt
C:\>python Chapter5_ScriptTool.py C:\Projects\SanFrancisco.gdb\SanFrancisco\Bus_
Stops C:\Projects\SanFrancisco.gdb\SanFrancisco\CensusBlocks2010_
```

Add Script ✕

Name:

Label:

Description:

Stylesheet:
 

Store relative path names (instead of absolute paths)
 Always run in foreground

Add Script



Script File:

C:\Scripts\Chapter5\Chapter5_ScriptTool.py



Show command window when executing script

Run Python script in process

< Back

Next >

Cancel

Add Script



Display Name	Data Type
€	



Click any parameter above to see its properties below.

Parameter Properties

Property	Value
Type	Required
Direction	Input
MultiValue	No
Default	
Environment	
Filter	None
Obtained from	

To add a new parameter, type the name into an empty row in the name column, click in the Data Type column to choose a data type, then edit the Parameter Properties.

< Back

Finish

Cancel

Add Script



Display Name	Data Type
Census Block Featur...	
Census Block Field	
Output Spreadshee...	
Spreadsheet Field N...	
SQL Statement	
Bus Stop Fields	



Click any parameter above to see its properties below.

Parameter Properties

Property	Value
Type	Required
Direction	Input
MultiValue	No
Environment	
Filter	None
Obtained from	

To add a new parameter, type the name into an empty row in the name column, click in the Data Type column to choose a data type, then edit the Parameter Properties.

< Back

Finish

Cancel

Parameter	Data Type	Derived from?	Default
Bus Stop Feature Class	Feature Class		
Census Blocks Feature Class	Feature Class		
Census Block Field	Field	Census Block	
Output Spreadsheet	String		BusStopAnalysis.csv
Spreadsheet Field Headers	String		Bus Line Name, Bus Stop ID, Population
SQL Statement	SQL Expression	Bus Stop	
Bus Stop Fields	Field	Bus Stop	

Add Script



Display Name	Data Type
Bus Stop Feature Cl...	
Census Block Featur...	Evaluation Scale
Census Block Field	Extent
Output Spreadshee...	Extract Values
Spreadsheet Field N...	Feature Class
SQL Statement	Feature Dataset
	Feature Layer
	Feature Set
	Field
	Field Info
	Field Mappings
	File
	Folder
	Formulated Raster
	Fuzzy function
	GPServer
	GeoDataServer
	Geodataset
	Geometric Network
	Geostatistical Layer
	Geostatistical Search Neighborhc
	Geostatistical Value Table
	GlobeServer
	Graph
	Graph Data Table
	Group Layer
	Horizontal factor
	INFO Expression
	INFO Item
	INFO Table
	Image Service

Click any parameter above to

Parameter Properties

Property	Value
Type	Required
Direction	Input
MultiValue	No
Default	
Environment	
Filter	None
Obtained from	

To add a new parameter, type
name column, click in the Data
then edit the Parameter Prop



< Back

Finish

Cancel

Add Script



Display Name	Data Type
Bus Stop Feature Cl...	Feature Class
Census Block Featur...	Feature Class
Census Block Field	Field
Output Spreadshee...	
Spreadsheet Field N...	
SQL Statement	



Click any parameter above to see its properties below.

Parameter Properties

Property	Value
Direction	Input
MultiValue	No
Default	
Environment	
Filter	None
Obtained from	Census_Block_Feature_Class
Symbology	

To add a new parameter, type the name into an empty row in the name column, click in the Data Type column to choose a data type, then edit the Parameter Properties.

< Back

Finish

Cancel

Display Name	Data Type
Bus Stop Feature Cl...	Feature Class
Census Block Featur...	Feature Class
Census Block Field	Field
Output Spreadsheet	String
Spreadsheet Field N...	String
SQL Statement	SQL Expression

Click any parameter above to see its properties below.

Property	Value
Type	Required
Direction	Input
MultiValue	No
Default	BusStopAnalysis
Environment	
Filter	None
Obtained from	

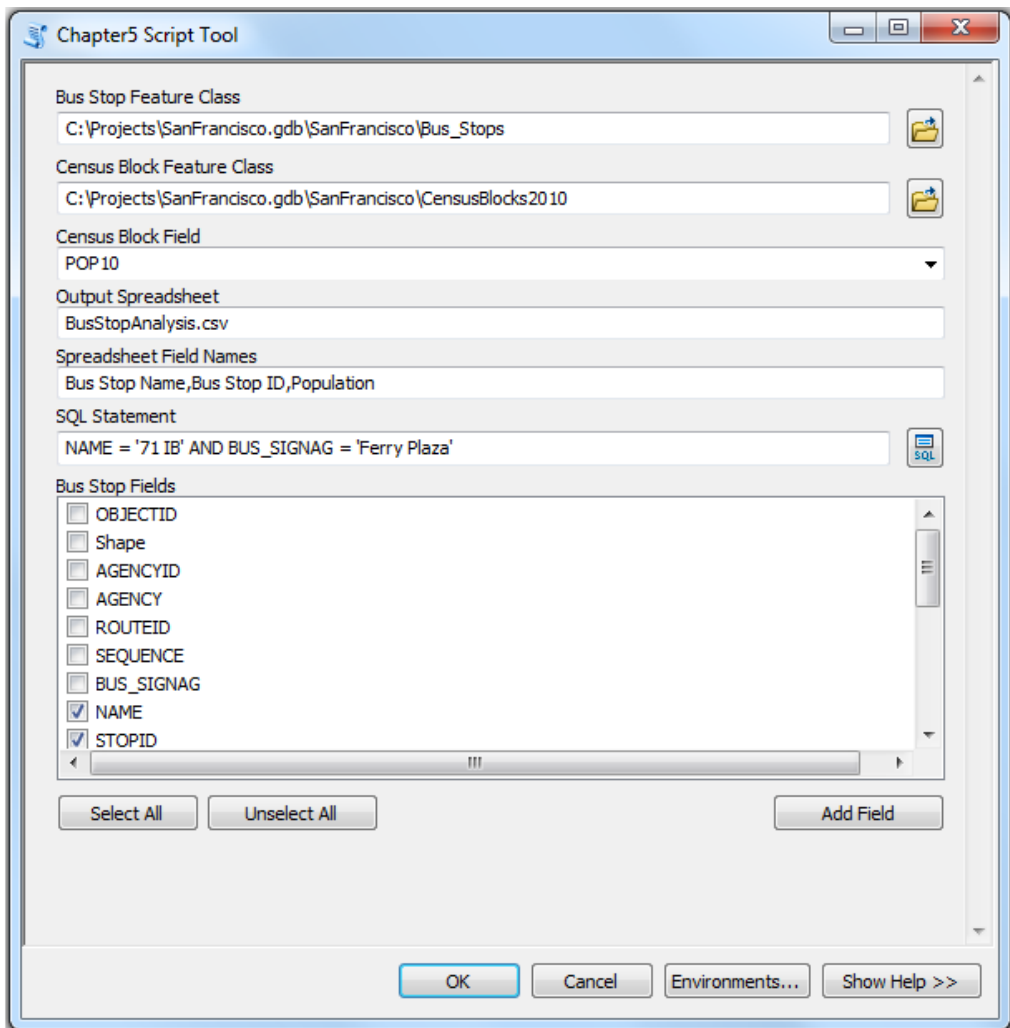
To add a new parameter, type the name into an empty row in the name column, click in the Data Type column to choose a data type, then edit the Parameter Properties.

Display Name	Data Type
Census Block Field	Field
Output Spreadsheet	String
Spreadsheet Field N...	String
SQL Statement	SQL Expression
Bus Stop Fields	Field

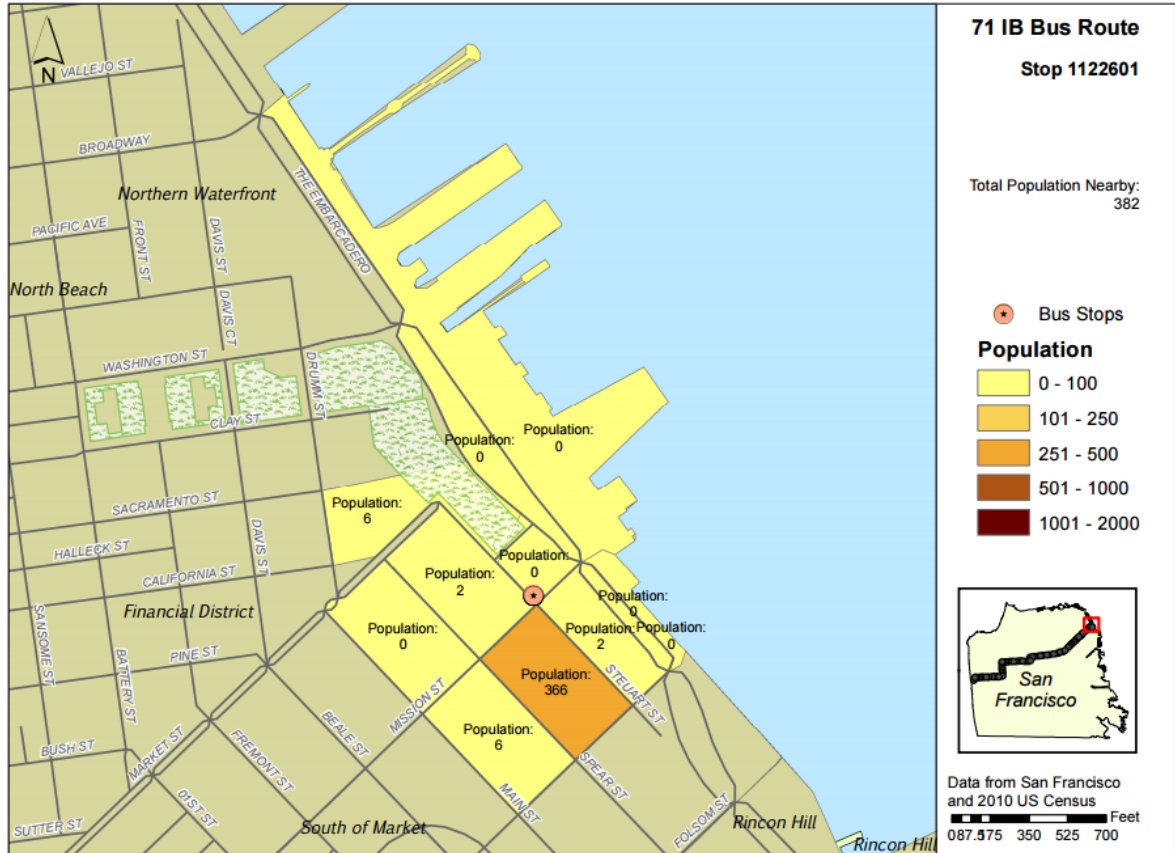
Click any parameter above to see its properties below.

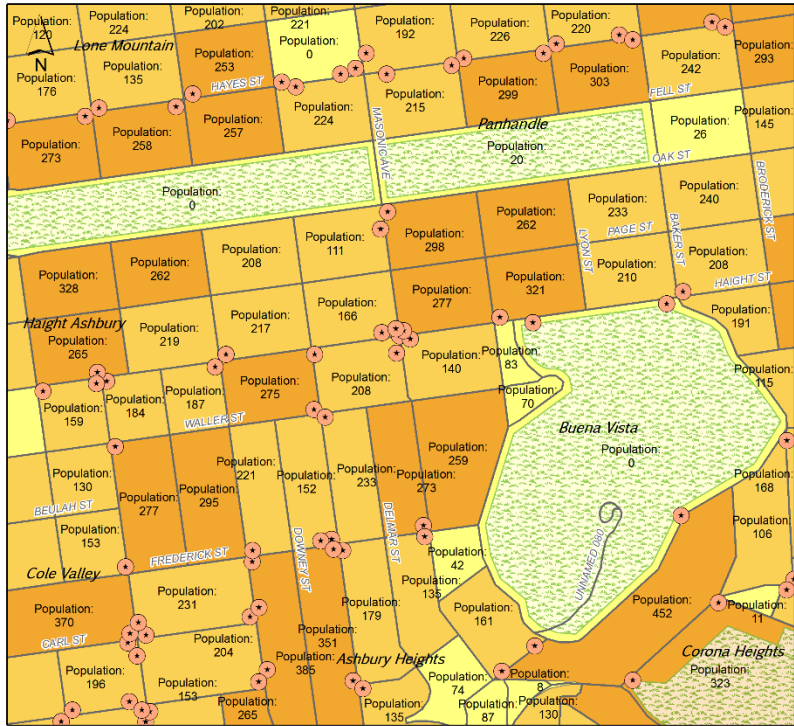
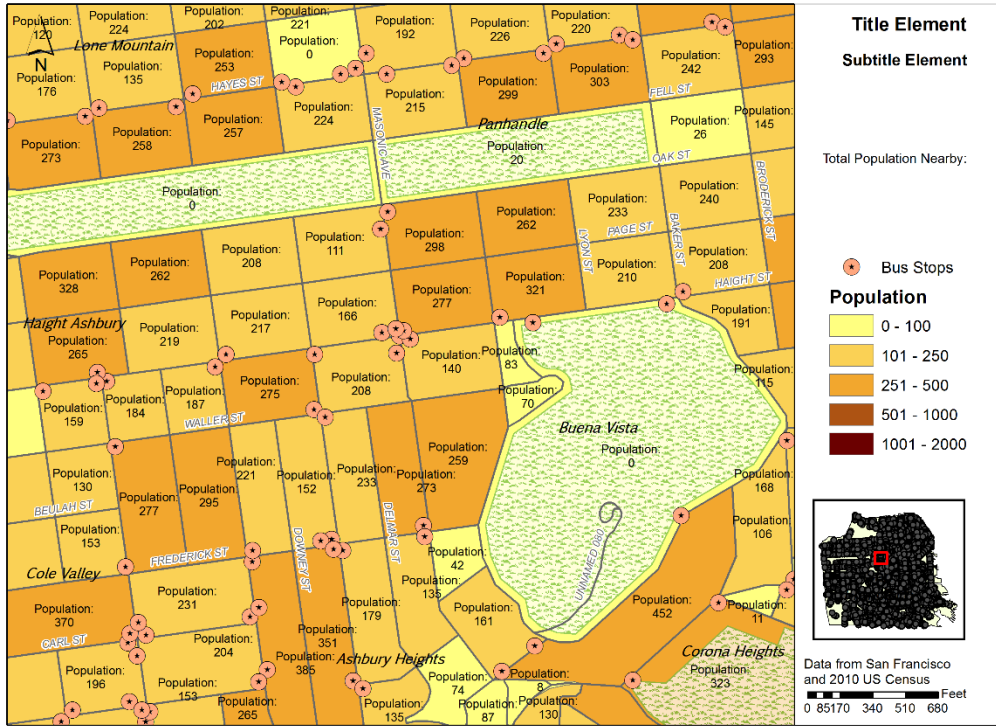
Property	Value
MultiValue	Yes
Default	
Environment	
Filter	None
Obtained from	Bus_Stop_Feature_Class
Symbology	

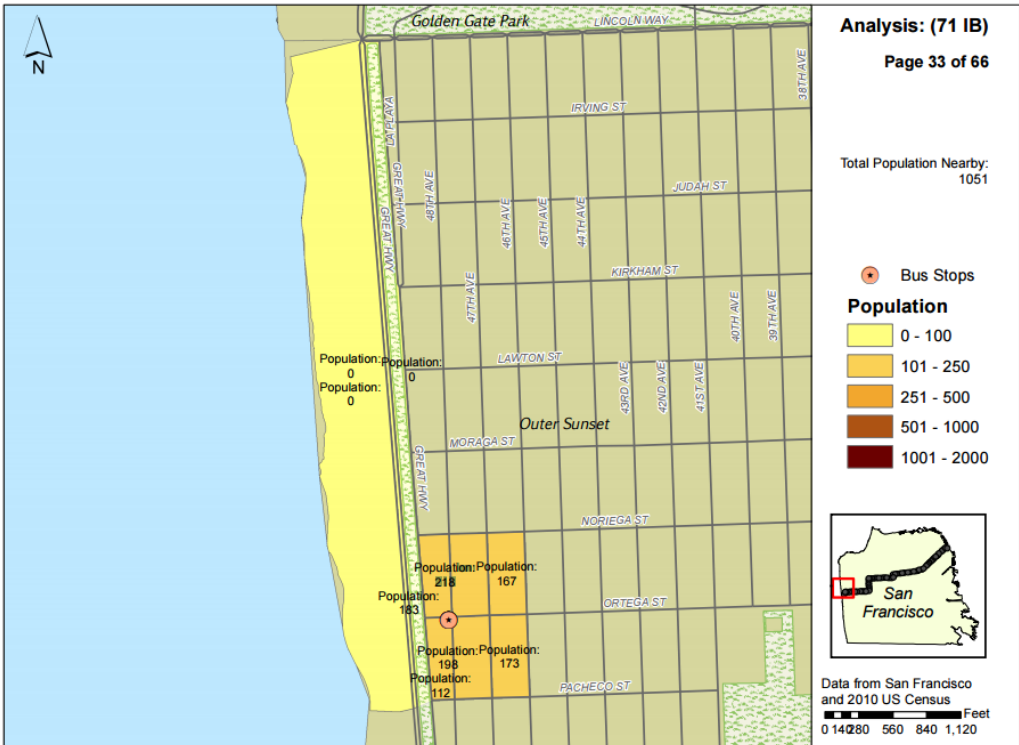
To add a new parameter, type the name into an empty row in the name column, click in the Data Type column to choose a data type, then edit the Parameter Properties.



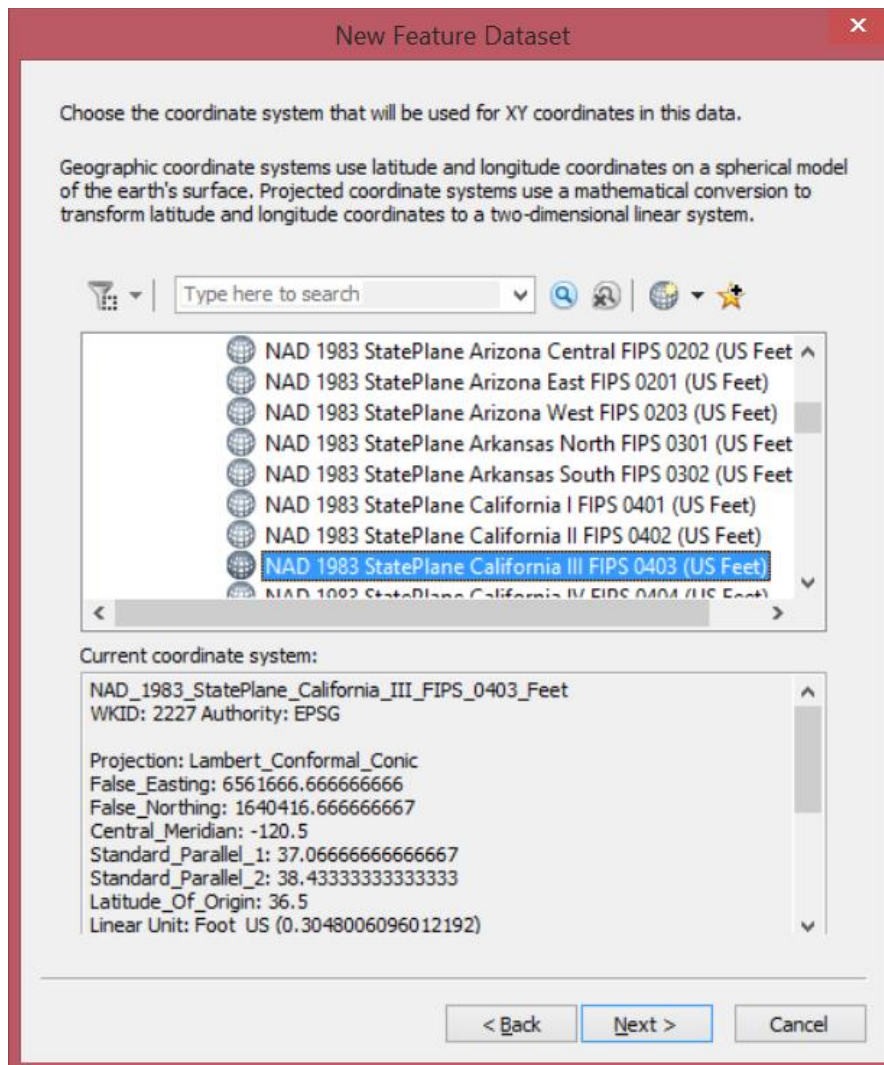
Chapter 6: The arcpy.mapping Module

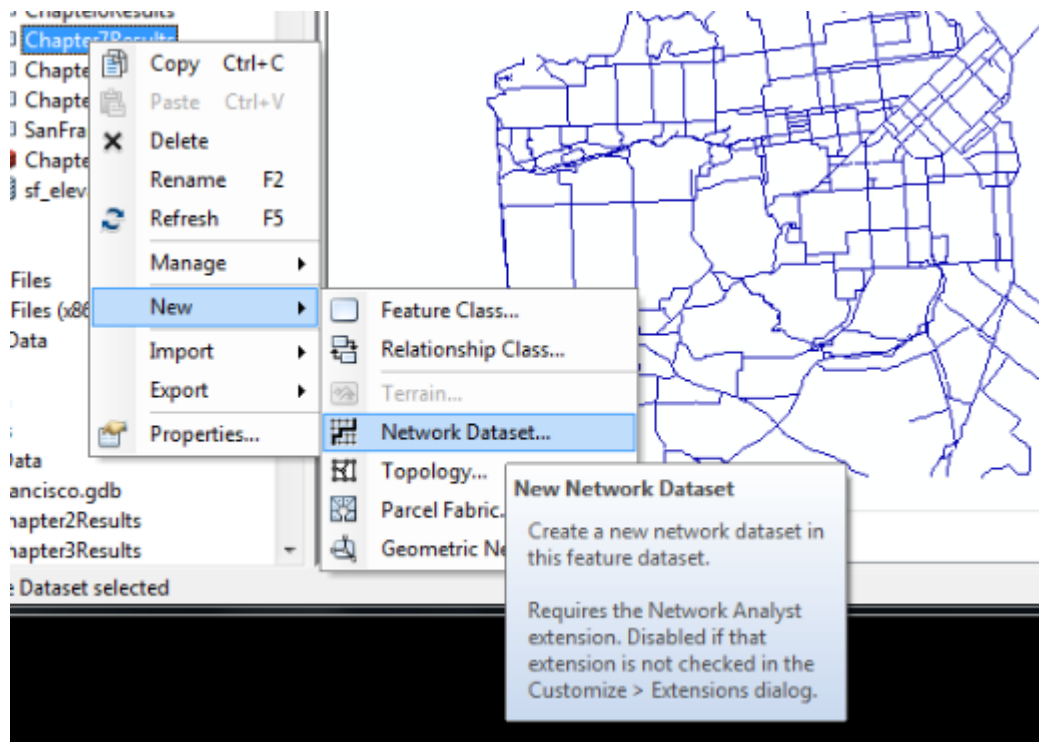


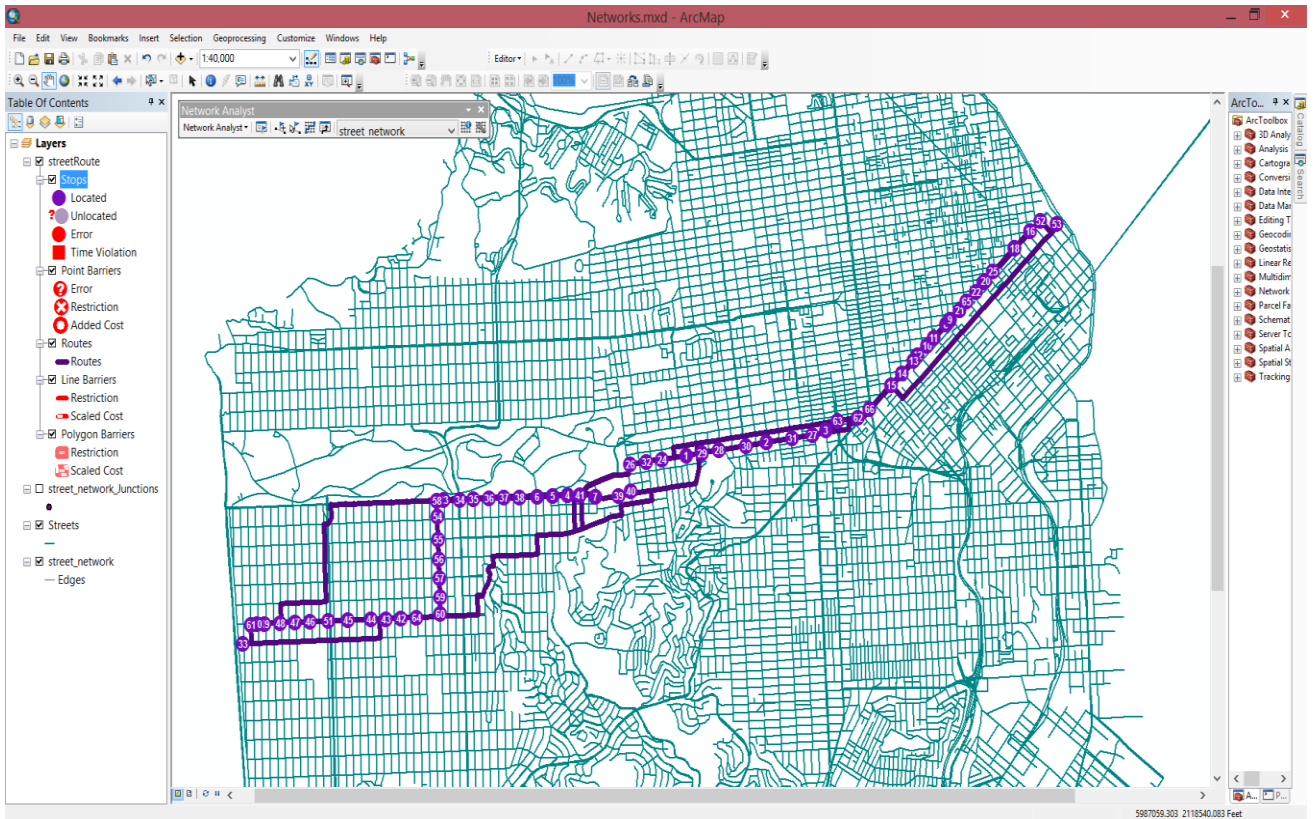




Chapter 7: Advanced Analysis Topics







Chapter 8: Introduction to ArcGIS Online

Secure | <https://www.arcgis.com/home/signin.html>

ArcGIS Features Plans Gallery Map Scene Help

Sign In

Need an ArcGIS Public Account?

An ArcGIS Public Account is a personal account with limited usage and capabilities and is meant for non-commercial use only.

[CREATE A PUBLIC ACCOUNT](#)

If you have signed up for an Esri Account, you have automatically been given access to an ArcGIS Public Account and you can use the same sign-in credentials for both.

Sign In esri

Username

Password



Keep me signed in

[SIGN IN](#)

[Forgot password?](#) [Forgot username?](#)

OR

Sign in with [ENTERPRISE ACCOUNT](#)

Sign in with  

Need an ArcGIS Public Account?

An ArcGIS Public Account is a personal account with limited usage and capabilities and is meant for non-commercial use only.

[CREATE A PUBLIC ACCOUNT](#)

If you have signed up for an [Esri Account](#), you have automatically been given access to an ArcGIS Public Account and you can use the same sign-in credentials for both.

Create Your ArcGIS Public Account



OR

ENTER YOUR INFORMATION

If you have an Esri Account then you already have an ArcGIS Public Account and you can just [sign in](#).

Create Your ArcGIS Public Account

Enter your information

Username	<input type="text" value="arcpyarcgis"/>
Password	<input type="password" value="....."/>
Confirm Password	<input type="password" value="....."/>
First Name	<input type="text" value="Arcpy"/>
Last Name	<input type="text" value="ArcGIS"/>
E-mail	<input type="text" value="pythonbook@yahoo.com"/>
Confirm E-mail	<input type="text" value="pythonbook@yahoo.com"/>
Security Question	<input type="text" value="What is your dream job?"/> ▾
Answer	<input type="text" value="GIS Developer"/>

Review the [Terms of Use](#) and [Privacy Policy](#)

Review the [Terms of Use](#) and [Privacy Policy](#) in other select languages

I accept and agree to be legally bound by the [Esri ArcGIS Online Terms of Use and Privacy Policy](#).

[CREATE MY ACCOUNT](#)

[CANCEL](#)



Folders

NEW DELETE

arcpybook (Home)

- ArcPro
- ArcPy_AGOL
- ArcREST
- PythonAPI

Show

All

- Maps
- Layers
- Scenes
- Apps
- Tools
- Files

[+ Add Item](#) [Create](#) [Share](#) [Delete](#) [Move](#) [Change Owner](#)

<input type="checkbox"/>	Title	Type	Modified	Shared
<input type="checkbox"/>	BikeRoute	Service Definition	Feb 18, 2017	Not Shared
<input type="checkbox"/>	BikeRoute	Feature Layer (hosted)	Feb 18, 2017	Organization
<input type="checkbox"/>	Census	Service Definition	Jan 23, 2017	Not Shared
<input type="checkbox"/>	Census	Feature Layer (hosted)	Jan 23, 2017	Not Shared
<input type="checkbox"/>	SF_Buildings	Feature Layer (hosted)	Apr 8, 2017	Organization
<input type="checkbox"/>	SF_Buildings	Service Definition	Apr 8, 2017	Not Shared
<input type="checkbox"/>	SF_BusStops	Service Definition	Apr 8, 2017	Not Shared
<input type="checkbox"/>	SF_BusStops	Feature Layer (hosted)	Apr 8, 2017	Not Shared
<input type="checkbox"/>	SF_Neighborhoods	Service Definition	Jan 23, 2017	Not Shared
<input type="checkbox"/>	SF_Neighborhoods	Tile Layer (hosted)	Jan 23, 2017	Everyone



My Content

Folders

NEW DELETE

- arcpybook (Home)**
- ArcPro
- ArcPy_AGOL
- ArcREST
- PythonAPI

+ Add Item Create Share Delete

- From my computer
- From the web
- An application

- BikeRoute
- BusStopAnalysis
- BusStopAnalysis



My Content

Folders

- NEW DELETED
- arcpybook (Home)
 - ArcPro
 - ArcPy_AGOL
 - ArcREST
 - PythonAPI

Show

- All
- Maps
- Layers
- Scenes
- Apps
- Tools
- Files

+ Add Item Create Share Delete Move Change Owner

	Type	Modified
Feature Layer		
Tile Layer		
Bike App	Service Definition	Feb 18, 2017
Bike Map	Feature Layer (hosted)	Feb 18, 2017
Bike Scene		
BusStopAnalysis	Feature Layer (hosted)	May 7, 2017
BusStopAnalysis	Service Definition	May 7, 2017
Census	Service Definition	Jan 23, 2017
Census	Feature Layer (hosted)	Jan 23, 2017
SF_Buildings	Service Definition	Apr 8, 2017
SF_Buildings	Feature Layer (hosted)	Apr 8, 2017
SF_Neighborhoods	Tile Layer (hosted)	Jan 23, 2017
SF_Neighborhoods	Service Definition	Jan 23, 2017
SF_OpenSpace	Service Definition	Apr 8, 2017

unnamed.jpg

Home Gallery Map

My Con

Folders

- NEW DELETE
- arcpybook (Home)
- ArcPro
- ArcPy_AGOL
- ArcREST
- PythonAPI

Show


- All
- Maps
- Layers
- Scenes
- Apps
- Tools
- Files

Create a New Web App


What do you want to do? Select a configurable app. ?

- Show All
- Build a Story Map**
- Collect/Edit Data
- Compare Maps/Layers
- Display a Scene (3D)
- Explore/Summarize Data
- Make a Gallery
- Map Social Media
- Provide Local Information
- Route/Get Directions


Combine maps with narrative text, images, and multimedia content to tell your story




Story Map Basic





Story Map Cascade



Story Map Crowdsource (beta)







CANCEL



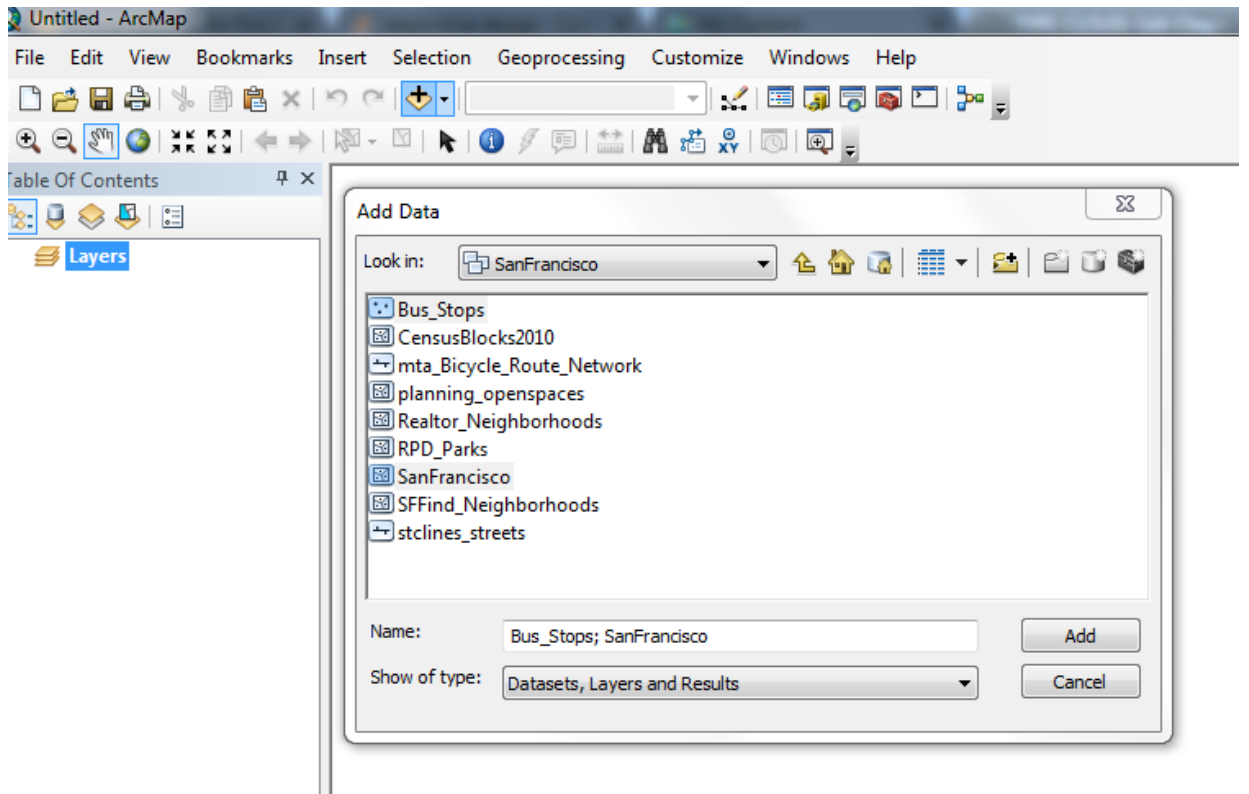
My Groups

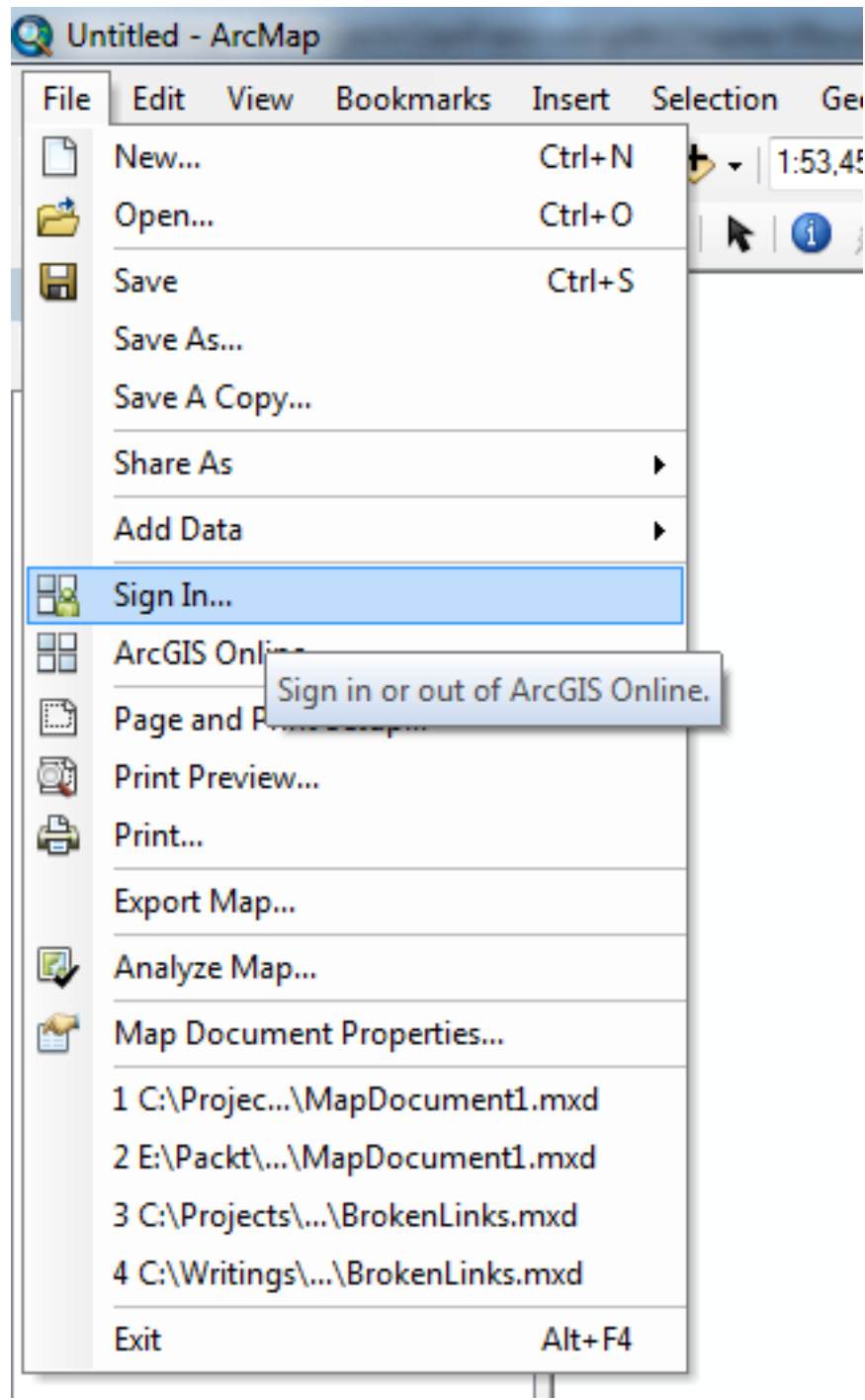
 **CREATE A GROUP**

[Home](#) [Gallery](#) [Map](#) [Scene](#) [Groups](#) [My Content](#) [My Organization](#)



My Content





- File Edit View Bookmarks Insert Selection Ge
- New... Ctrl+N
- Open... Ctrl+O
- Save Ctrl+S
- Save As...
- Save A Copy...
- Share As ▶
- Add Data ▶
- Sign In...**
- ArcGIS Online...
Sign in or out of ArcGIS Online.
- Page and Print Properties...
- Print Preview...
- Print...
- Export Map...
- Analyze Map...
- Map Document Properties...
- 1 C:\Projec...\MapDocument1.mxd
- 2 E:\Packt\...\MapDocument1.mxd
- 3 C:\Projects\...\BrokenLinks.mxd
- 4 C:\Writings\...\BrokenLinks.mxd
- Exit Alt+F4

ArcGIS Sign In

ArcGIS Desktop wants to access your ArcGIS Online account information

Sign In **esri**

Username
arcpyarcgis



Password
●●●●●●

SIGN IN **CANCEL**


[Forgot password?](#) [Forgot username?](#)

————— OR —————

Sign in with **ENTERPRISE ACCOUNT**

Sign in with  

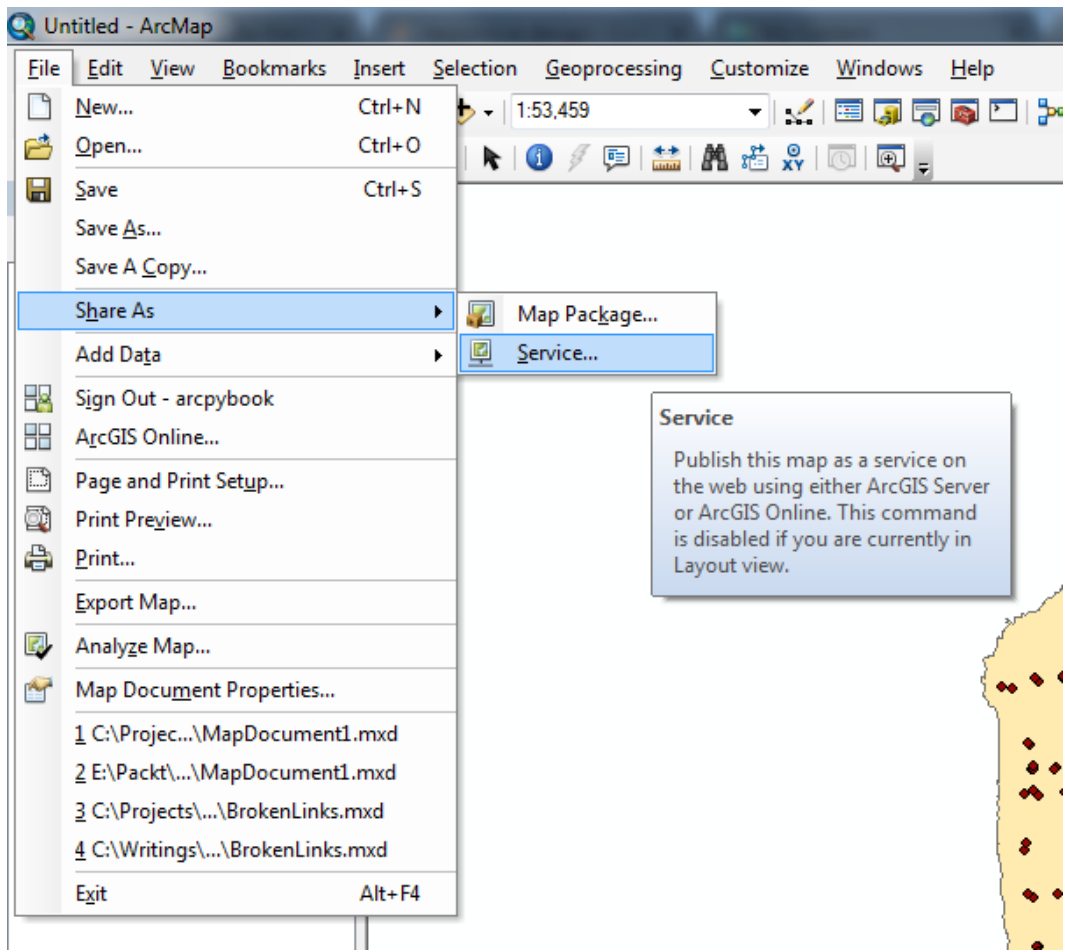
ArcGIS Desktop developed by:

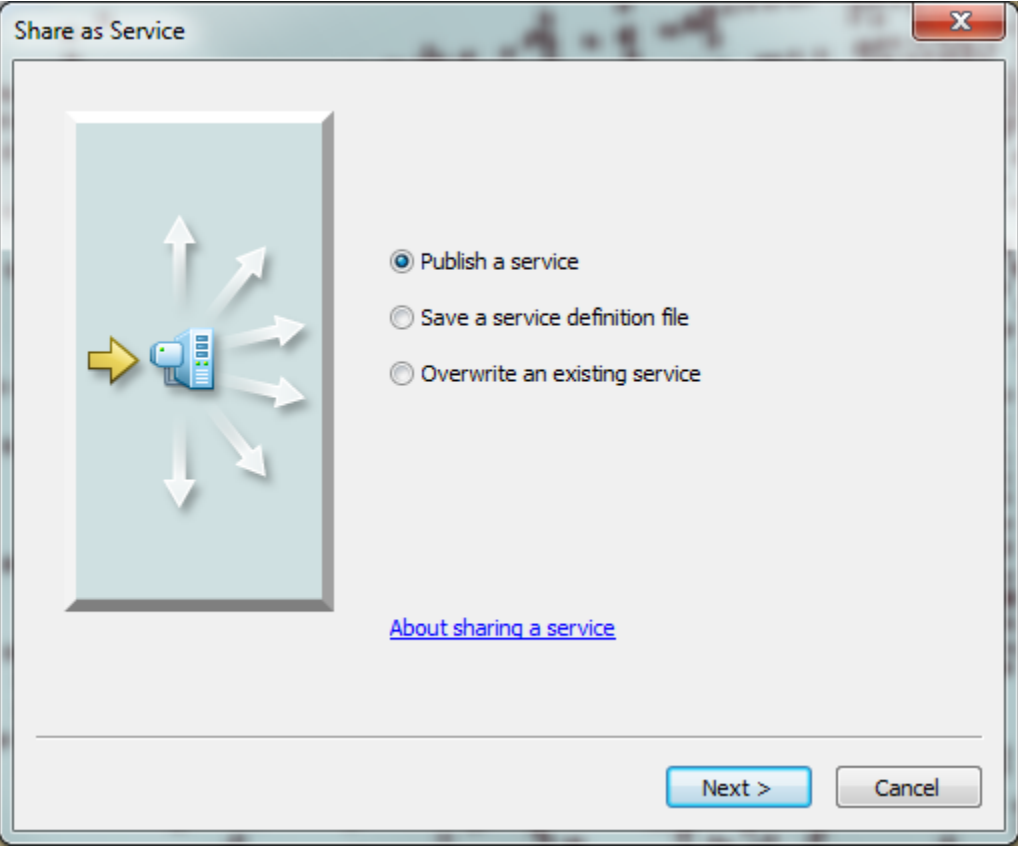


Esri

Esri publishes a set of ready-to-use maps and apps that are available as part of ArcGIS. ArcGIS is a mapping platform that enables you to create interactive maps and apps to share within your organization or publicly.

Sign me in automatically





Publish a Service X

Choose a connection

My Hosted Services (Python Book) +

Select an existing connection or create a new one

My Hosted Services (Python Book)

Service name

BusStopAnalysis

< Back Continue Cancel

Service Editor ☒

Connection: My Hosted Services Service Name: BusStopAnalysis 📄 Import ✓ Analyze 📄 Preview 📄 Publish ⬆

Parameters

Capabilities

Feature Access

Item Description

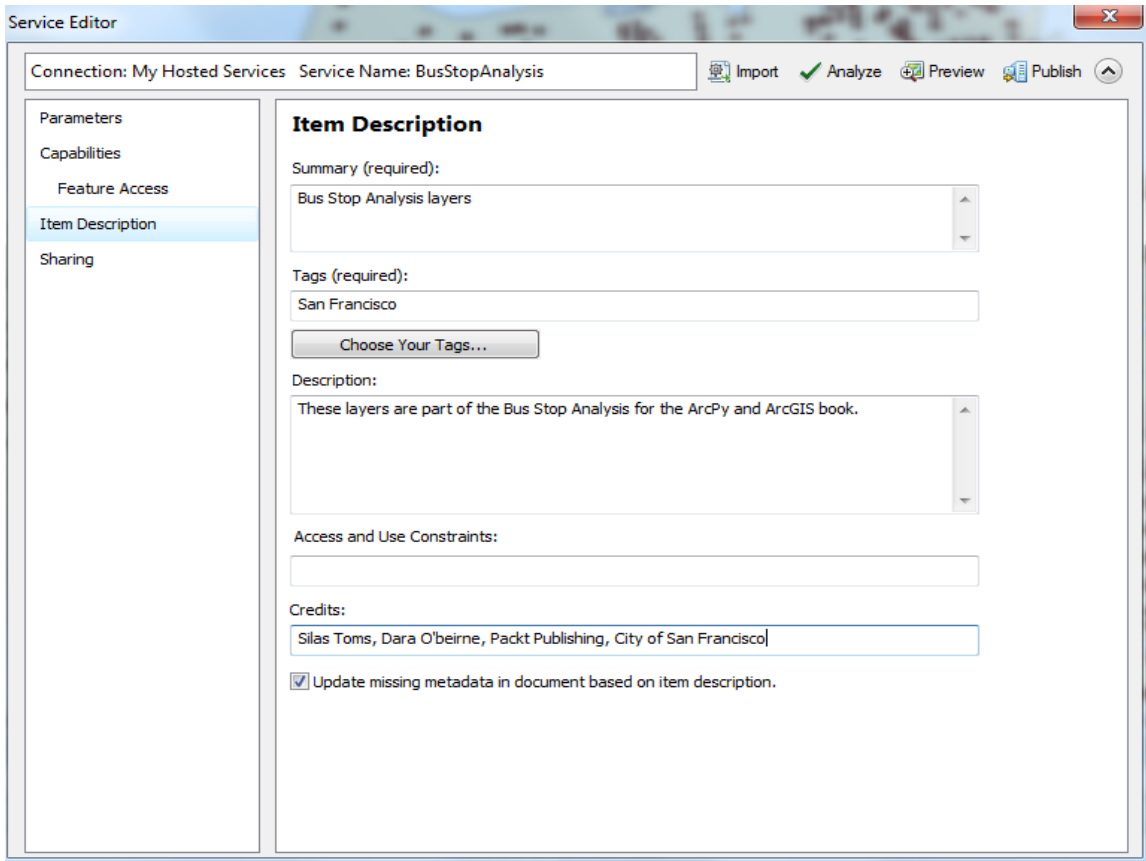
Sharing

Capabilities

Choose the capabilities you would like enabled for this service:

Tiled Mapping

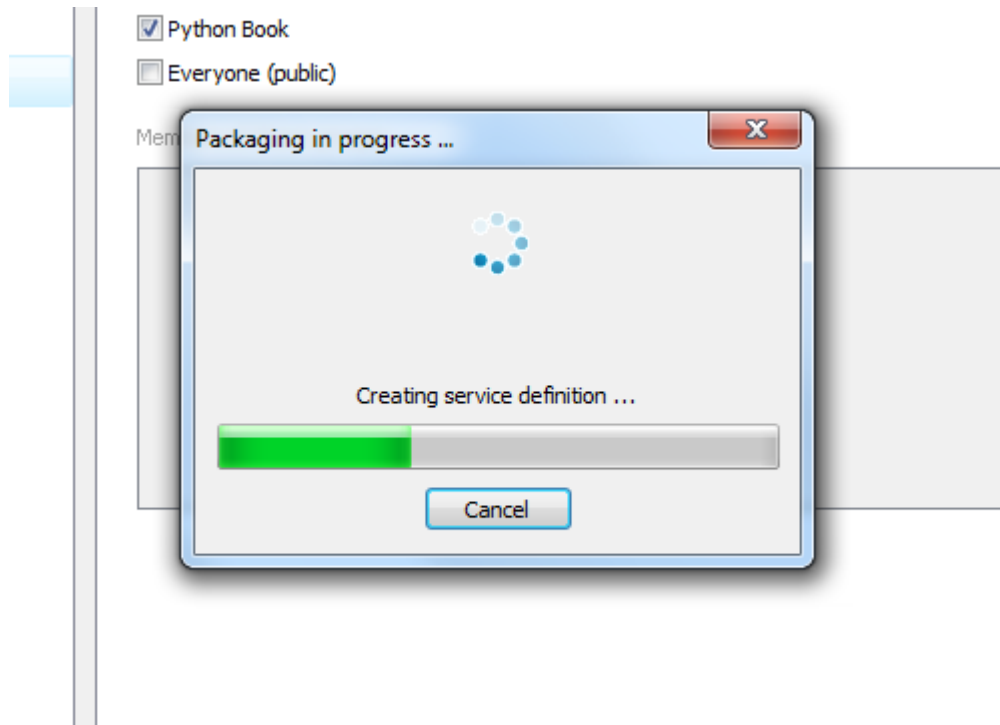
Feature Access



Prepare

0 Errors 3 Warnings 4 Messages Search Analyze Results

	Severity	Status	Code	Description
	Medium	Unresolved	24041	Layer does not have a feature template set(2 items)
	Medium	Unresolved	10045	Map is being published with data copied to the server using data frame full extent
	Low	Unresolved	30003	Layer draws at all scale ranges(4 items)



My Content

Folders

 NEW  DELETE

 arcpybook (Home)

 ArcPro

[+ Add Item](#) [Create](#) [Share](#) [Delete](#) [Move](#) [Change Owner](#)

 Title	Type
  BusStopAnalysis	 Feature Layer (hosted)
  BusStopAnalysis	 Service Definition

Sign into ArcGIS for Developers

Sign In esri

Username
arcpybook

Password



Keep me signed in

SIGN IN

[Forgot password?](#) [Forgot username?](#)

OR

Sign in with **ENTERPRISE ACCOUNT**

Sign in with  

Sign into Ar



Create and manage your app:




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Download APIs and SDKs

Dashboard

 **Python Book**
arcpybook

ArcGIS Developer Program
[Essentials Plan](#)

47.5018/50 credits available

APIs & SDKs

Download APIs and SDKs, such as the ArcGIS API for JavaScript or ArcGIS Runtime SDKs.

[Download APIs and SDKs](#)

- Documentation
- [ArcGIS DevLabs](#)
 - [All Product Documentation](#)

Applications

Applications help you authenticate with ArcGIS Online services and allow your application to authenticate ArcGIS Online users.

[Create Your First App](#)

Layers 3 of 10



BusStopAnalysis

May 7, 2017

SF OpenData

SFPD calls for 2016

April 30, 2017



TestData1

April 28, 2017

[View all 10 Layers](#)

[Create a New Layer](#)

Chapter 9: ArcPy and ArcGIS Online

Home Gallery Map Scene Groups My Content My Organization

Python

My Content

Folders

- NEW DELETE
- arcpybook (Home)
- ArcPro
- ArcPy_AGOL
- ArcREST

+ Add Item Create Share Delete Move Change Owner

Title	Type	Modified	Shared
SF_BusStops	Service Definition	Apr 8, 2017	Not Shared
SF_BusStops	Feature Layer (hosted)	Apr 8, 2017	Not Shared

1 - 2 of 2 results

Overview Data Visualization Usage Settings

Edit Thumbnail



SF Bus Stops

by arcpybook

Last Modified: January 28, 2017


Feature Layer (hosted)

Description

Add an in-depth description of the item.

Layers

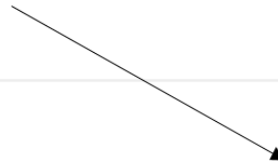
Bus_Stops

 Open In ▼

 Export To ▼

 Enable Attachments

 Service URL



[JSON](#)

Layer: Bus_Stops (ID:0)

View In: [ArcGIS.com Map](#)

Name: Bus_Stops

Display Field: NAME

Type: Feature Layer

Geometry Type: esriGeometryPoint

Description:

Copyright Text:

Min. Scale: 0

Max. Scale: 0

Default Visibility: true

Max Record Count: 1000

Supported query Formats: JSON

Use Standardized Queries: True

Extent:

SQL Format:

Format:

displaying top 50 of 1000 results

NAME: 14 OB
 geometry Point:
 X: 6001672.5869999975
 Y: 2091447.0435000062

NAME: 14 OB
 geometry Point:
 X: 6001672.5869999975
 Y: 2091447.0435000062

```
{
  "objectIdFieldName": "OBJECTID",
  "globalIdFieldName": "",
  "geometryF
  {"wkid": 102643, "latestWkid": 2227},
  "fields":
  [{"name": "NAME", "type": "esriFieldTypeString", "alias": "NAME", "sqlT
  OB"}, {"geometry": {"x": 5999783.7865000069, "y": 2088532.56399999956}},
  OB"}, {"geometry": {"x": 5999783.7865000069, "y": 2088532.56399999956}},
  OB"}, {"geometry": {"x": 5999783.7865000069, "y": 2088532.56399999956}},
  OB"}, {"geometry": {"x": 5999200.07899999962, "y": 2087870.9259999999}}, {
  OB"}, {"geometry": {"x": 5999200.07899999962, "y": 2087870.9259999999}}, {
  OB"}, {"geometry": {"x": 5999200.07899999962, "y": 2087870.9259999999}}, {
  IB"}, {"geometry": {"x": 5997602.3225000054, "y": 2086727.8235000074}},
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  IB"}, {"geometry": {"x": 5997602.3225000054, "y": 2086727.8235000074}},
  IB"}, {"geometry": {"x": 5998072.5035, "y": 2086936.5470000058}}, {"attr
  {"x": 5998072.5035, "y": 2086936.5470000058}}, {"attributes": {"NAME":
  {"x": 5999159.9105000049, "y": 2087747.9344999939}}, {"attributes": {"
  {"x": 5999159.9105000049, "y": 2087747.9344999939}}, {"attributes": {"
  {"x": 5999159.9105000049, "y": 2087747.9344999939}}, {"attributes": {"
  {"x": 5999785.0160000026, "y": 2088452.4155000001}}, {"attributes": {"
  {"x": 5999785.0160000026, "y": 2088452.4155000001}}, {"attributes": {"
  {"x": 5999785.0160000026, "y": 2088452.4155000001}}, {"attributes": {"
  {"x": 6001864.8349999934, "y": 2091650.6574999988}}, {"attributes": {"
```


Select Windows PowerShell

```
PS C:\PythonBook\Scripts\Ch9> python featureset.py
{u'1 IB': u'Howard & Main',
 u'1 OB': u'Geary & 33rd Av.',
 u'10 IB': u'10 TOWNSEND',
 u'10 N': u'Sausalito Ferry',
 u'10 OB': u'De Haro & 17th St.',
 u'10 S': u'SFCC via Geary Blvd',
 u'108 IB': u'108 TREASURE ISLAND',
 u'108 OB': u'108 TREASURE ISLAND',
 u'12 IB': u'Van Ness Av.',
 u'12 OB': u'Chavez & Mission',
 u'120 S': u'COLMA BART',
 u'121 S': u'SKYLINE COLLEGE',
 u'122 N': u'STONESTOWN',
 u'122 S': u'SOUTH SF BART',
 u'130 S': u'AIRPORT BLVD&LINDEN',
 u'14 IB': u'Ferry Plaza',
 u'14 OB': u'Lowell St.',
 u'14L IB': u'Ferry Plaza',
 u'14L OB': u'San Jose Av., Daly City',
 u'14X IB': u'Ferry Plaza',
```

Update Layer Definition - Bus_Stops

Note: This operation is only supported via POST

Update Layer Definition:

```
{
  "adminLayerInfo" : {
    "tableName" :
"sh_db_10109.user_27175.BUSSTOPS_BUS_STOPS2",
    "geometryField" : {"name" : "Shape"},
    "xssTrustedFields" : ""
  },
  "id" : 0,
  "name" : "Bus_Stops",
  "type" : "Feature Layer",
  "displayField" : "NAME",
  "description" : "",
  "copyrightText" : "",
  "defaultVisibility" : true,
  "editingInfo" : {
    "lastEditDate" : 1485629226288
  },
  "relationships" : [],
  "isDataVersioned" : false,
  "supportsCalculate" : true,
  "supportsTruncate" : false,
  "supportsAttachmentsByUploadId" : true,
  "supportsRollbackOnFailureParameter" : true,
  "supportsStatistics" : true,
}
```

ASync: True False

Format:

Update Layer Definition - Bus_Stops

Note: This operation is only supported via POST

Update Layer Definition:

```
    "NAME" : null,  
    "STOPID" : null,  
    "X" : null,  
    "Y" : null,  
    "OWL" : null,  
    "EARLY_MORN" : null,  
    "AM_PEAK" : null,  
    "MID_DAY" : null,  
    "AFTERNOON" : null,  
    "PM_PEAK" : null,  
    "EVENING_CO" : null  
  }  
}  
],  
"supportedQueryFormats" : "JSON, geoJSON",  
"hasStaticData" : false,  
"maxRecordCount" : 20000,  
"standardMaxRecordCount" : 32000,  
"tileMaxRecordCount" : 8000,  
"maxRecordCountFactor" : 1,  
"capabilities" : "Query",  
"exceedsLimitFactor" : 1  
}
```

ASync: True False

Format:

Update Layer Definition - Bus_Stops

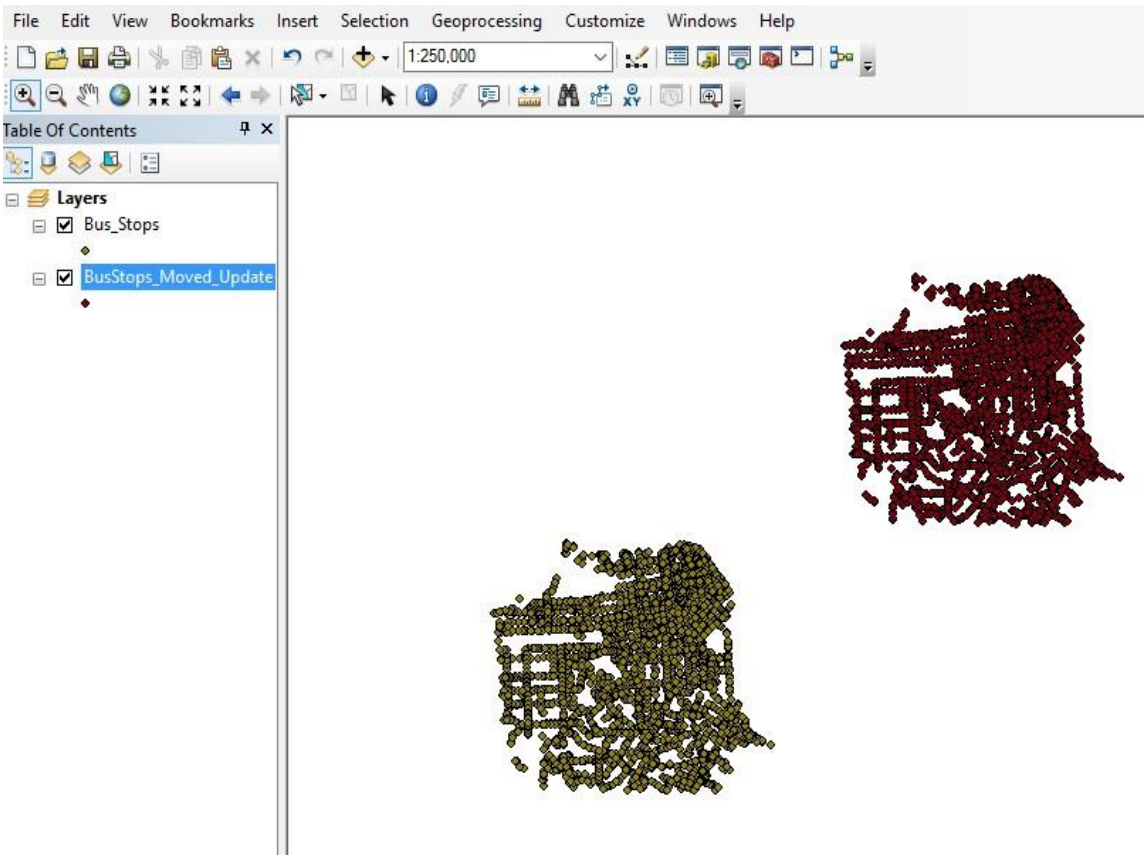
Note: This operation is only supported via POST

Update Layer Definition:

```
{
  "adminLayerInfo" : {
    "tableName" :
"sh_db_10109.user_27175.BUSSTOPS_BUS_STOPS2",
    "geometryField" : {"name" : "Shape"},
    "xssTrustedFields" : ""
  },
  "id" : 0,
  "name" : "Bus_Stops",
  "type" : "Feature Layer",
  "displayField" : "NAME",
  "description" : "",
  "copyrightText" : "",
  "defaultVisibility" : true,
  "editingInfo" : {
    "lastEditDate" : null
  },
  "relationships" : [],
  "isDataVersioned" : false,
  "supportsCalculate" : true,
  "supportsTruncate" : false,
  "supportsAttachmentsByUploadId" : true,
  "supportsRollbackOnFailureParameter" : true,
  "supportsStatistics" : true,
}
```

ASync: True False

Format:



File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help

1:250,000

Table Of Contents

- Layers
 - Bus_Stops
 - BusStops_Moved_Update

































Chapter 10: ArcREST Python Package

```
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Dara> pip install arcrest_package
```

```
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Dara> pip install arcrest_package
Collecting arcrest_package
  Downloading ArcREST_Package-3.5.9-py2.py3-none-any.whl (398kB)
    100% |#####| 399kB 469kB/s
Collecting numpy>=1.7.1 (from arcrest_package)
  Downloading numpy-1.12.0-cp27-none-win32.whl (6.6MB)
    100% |#####| 6.6MB 164kB/s
Installing collected packages: numpy, arcrest-package
Successfully installed arcrest-package-3.5.9 numpy-1.12.0
PS C:\Users\Dara>
```

- ▼  site-packages
 - ▼  arcrest
 - >  agol
 - >  ags
 - >  cmp
 - >  common
 - >  enrichment
 - >  geometryservice
 - >  hostedservice
 - >  manageags
 - >  manageorg
 - >  manageportal
 - >  opendata
 - >  packages
 - >  security
 - >  web
 - >  webmap
 - >  _abstract
 -  constants.py
 -  __init__.py
 - ▼  arcresthelper
 - >  packages
 -  common.py
 -  featureservicetools.py
 -  orgtools.py
 -  portalautomation.py
 -  publishingtools.py
 -  resettools.py
 -  securityhandlerhelper.py
 -  __init__.py


```
PS C:\pythonbook\scripts\ch10> python arcrest_started.py
Enter User Name: arcpybook
Enter Password: ██████████
92ff1991b38640aa84eaaa8b194eaf0f
[private] Census
938e672c08144ebfada1ab996719d4fb
[private] Census
6bea8368781e49648c5638327ec9fb23
[private] SF_Neighborhoods
eb03c4b243094edcb1ccc4b5f544173a
[public] SF_Neighborhoods
91a321897de141b1b089aaf3fe7a75bc
[private] BikeRoute
52a407c371fd4c34b9d90e27b521a6d7
[private] BikeRoute
PS C:\pythonbook\scripts\ch10>
```

Home Gallery Map Scene Groups My Content My Organization

BikeRoute

Overview **Data** Visualization Usage Settings

Double click a value in the table to change it

mta_Bicycle_Route_Network (2518 features, 0 selected)

OBJECTID	id	streetname	type	from_st	
1	0	CARGO	WAY	3RD ST	JF
2	0	FREMONT	ST	FOLSOM ST	H
3	0	HOFF	ST	16TH ST	1'
4	0	16TH	ST	MISSION ST	V
5	0	16TH	ST	WIESE ST	H
6	0	16TH	ST	HOFF ST	JL
7	0	16TH	ST	JULIANA AVE	RI
8	0	16TH	ST	RONDEL PL	C

	direct	cnn	number	🔒 Shape_Le...	Bike Route
	2W	0	0	3,702.53835806205	
	2W	0	0	632.440359104898	
	2W	6,935,000	0	591.68093033827	
	2W	726,000	0	235.835670386093	
	2W	727,000	0	28.4436671436308	
	2W	728,000	0	92.9587669668386	
	2W	729,000	0	98.078594369969	
	2W	730,000	0	41.1311860280713	
	2W	731,000	0	146.389292812136	
	2W	11,375,000	0	107.117165569138	

Edit Thumbnail



Add to Favorites

bike route

by [arcpybook](#)

Last Modified: February 18, 2017

Feature Layer (hosted)

Description

bike route

Layers

[mta_Bicycle_Route_Network](#)

Open In Export To Enable Attachments Service URL

	direct	cnn	number	Shape_Le...	Bike Route
	2W	0	0	3,702.53835806205	
	2W	0	0	632.440359104898	- empty -
	2W	6,935,000	0	591.68093033827	Option A
	2W	726,000	0	235.835670386093	Option B
	2W	727,000	0	28.4436671436308	Option C
	2W	728,000	0	92.9587669668386	- empty -
	2W	729,000	0	98.078594369969	
	2W	730,000	0	41.1311860280713	
	2W	731,000	0	146.389292812136	

BikeRoute

Overview Data Visualization Usage Settings

Double click a value in the table to change it

mta_Bicycle_Route_Network (2518 features, 0 selected)

OBJECTID	id	streetname

BikeRoute

Overview

Data


Visualization

Usage

Settings

Double click a value in the table to change it

mta_Bicycle_Route_Network (5036 features, 0 selected)

	OBJECTID	id	streetname
---	----------	----	------------

BikeRoute

Overview

Data


Visualization

Usage

Settings

Double click a value in the table to change it

mta_Bicycle_Route_Network (5036 features, 0 selected)

	OBJECTID	id	streetname	type
	10	0	SAN BRUNO	AVE
	11	0	SAN BRUNO	AVE
	12	0	SAN BRUNO	AVE
	13	0	SAN BRUNO	AVE
	14	0	SAN BRUNO	AVE
	15	0	SAN BRUNO	AVE
	16	0	SAN BRUNO	AVE
	17	0	SAN BRUNO	AVE
	18	0	BAY SHORE	BLVD

BikeRoute

Overview

Data


Visualization

Usage

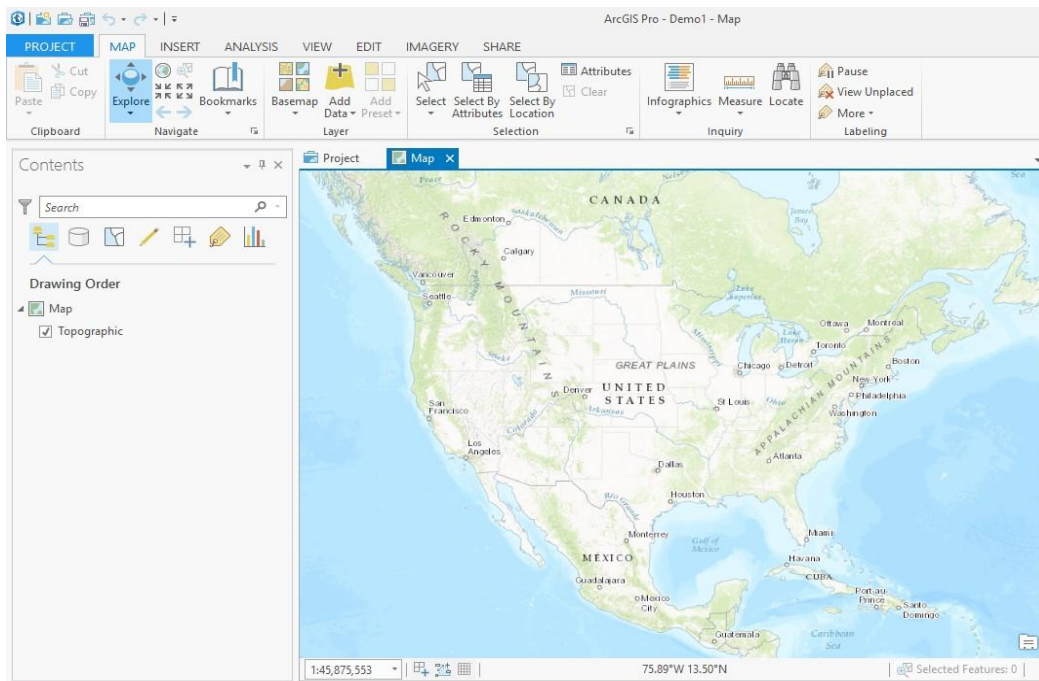
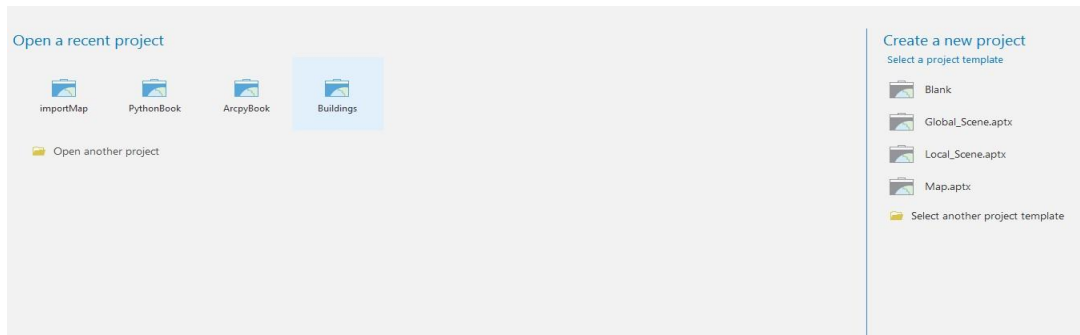
Settings

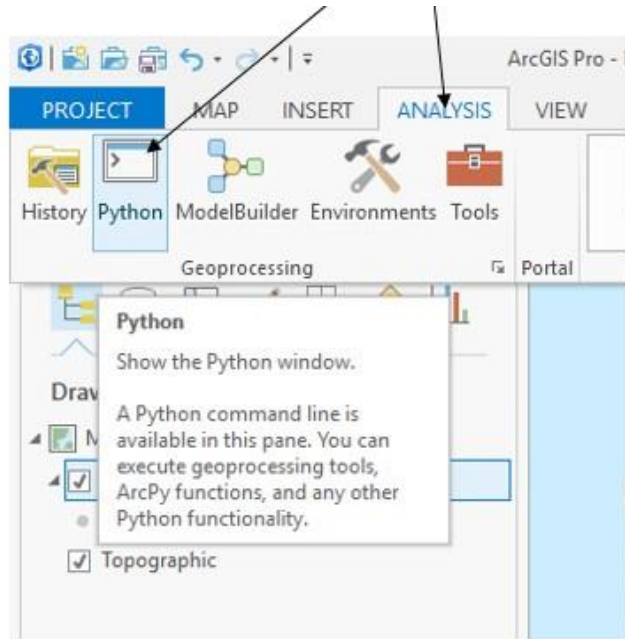
Double click a value in the table to change it

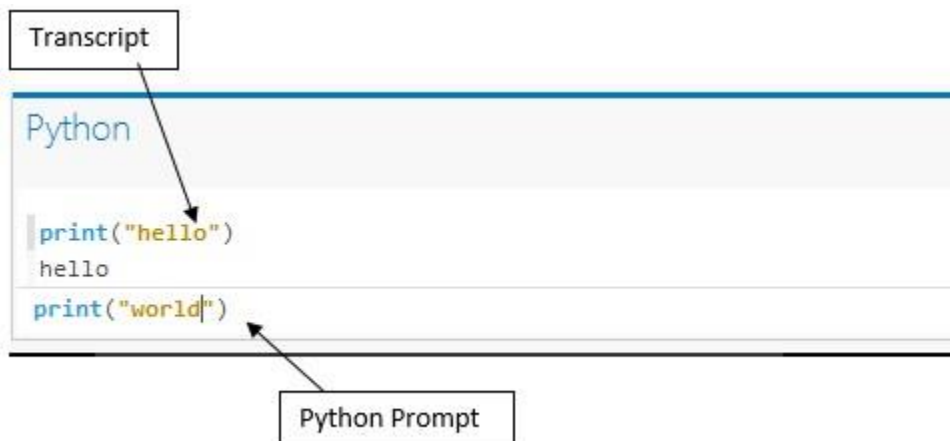
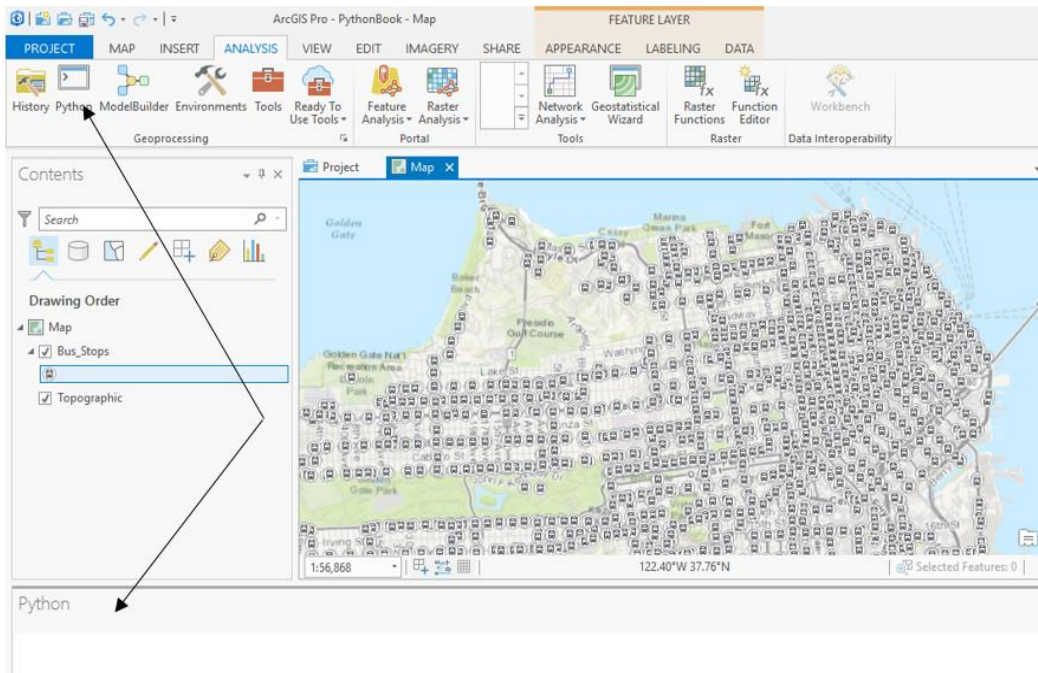
mta_Bicycle_Route_Network (5036 features, 0 selected)

 OBJECTID	id	streetname	type
10	0	SAN BRUNO	WAY
11	0	SAN BRUNO	WAY
12	0	SAN BRUNO	WAY
13	0	SAN BRUNO	WAY
14	0	SAN BRUNO	WAY
15	0	SAN BRUNO	WAY
16	0	SAN BRUNO	WAY
17	0	SAN BRUNO	WAY
18	0	BAY SHORE	BLVD

Chapter 11: ArcPy and ArcGIS Pro







Python

ListFeatureClasses()

ListFields()

ListFiles()

```
fields = arcpy.ListF
```

Contents Project

Search

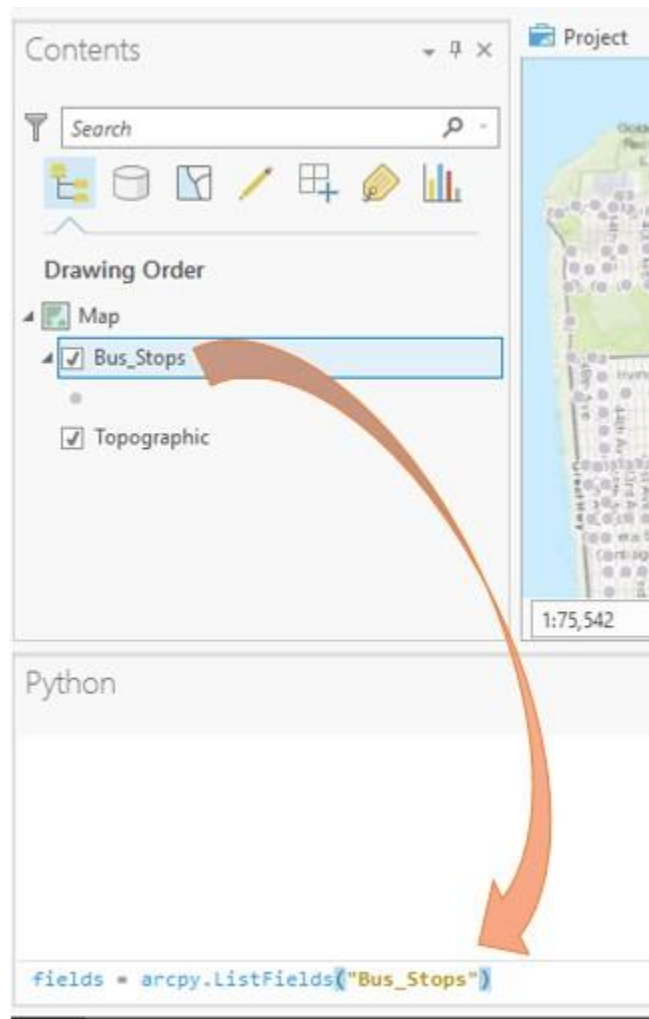
Drawing Order

- Map
 - Bus_Stops
 - Topographic

1:75,542

Python

```
fields = arcpy.ListFields("Bus_Stops")
```

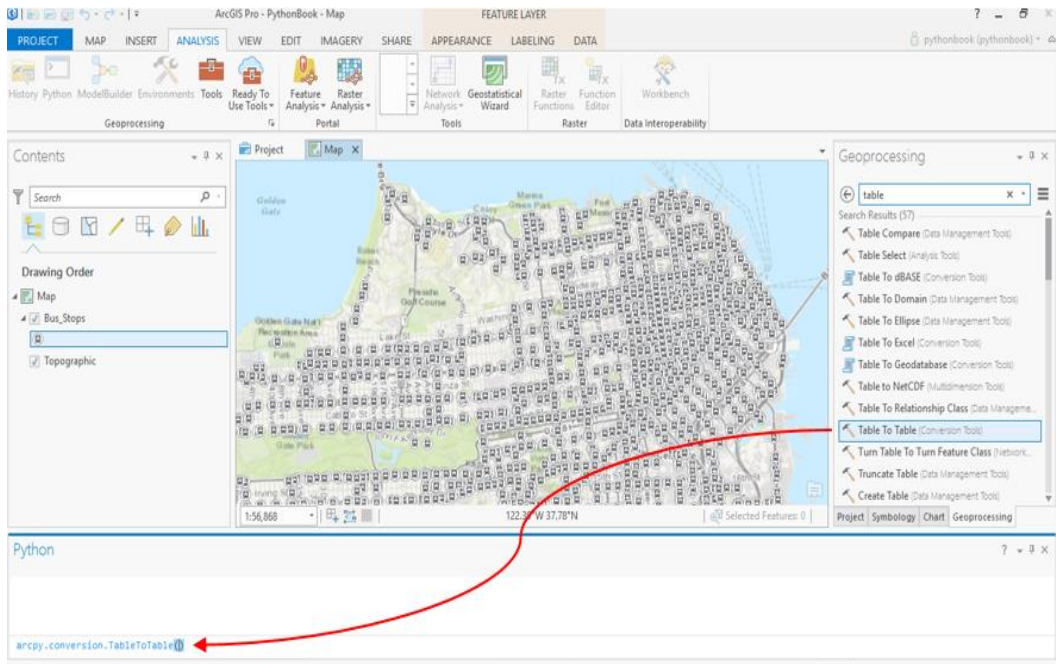
The image shows a screenshot of the ArcGIS software interface. On the left, the 'Contents' pane is visible, showing a 'Drawing Order' list. Under the 'Map' layer, 'Bus_Stops' is selected and highlighted with a blue box. Below the map, the 'Python' pane contains a script: 'fields = arcpy.ListFields("Bus_Stops")'. A large orange arrow points from the 'Bus_Stops' layer in the Contents pane down to the Python script. On the right side of the interface, a map is displayed with a scale of 1:75,542.

Python

```
fields = arcpy.ListFields("Bus_Stops")  
for field in fields:  
    print(field.name)
```

Python

```
for field in fields:  
    print(field.name)  
OBJECTID  
Shape  
AGENCYID  
AGENCY  
ROUTEID  
SEQUENCE
```



A screenshot of a Windows command prompt window titled "C:\Program Files\ArcGIS\Pro\bin\Python\python.exe". The window contains the following text:

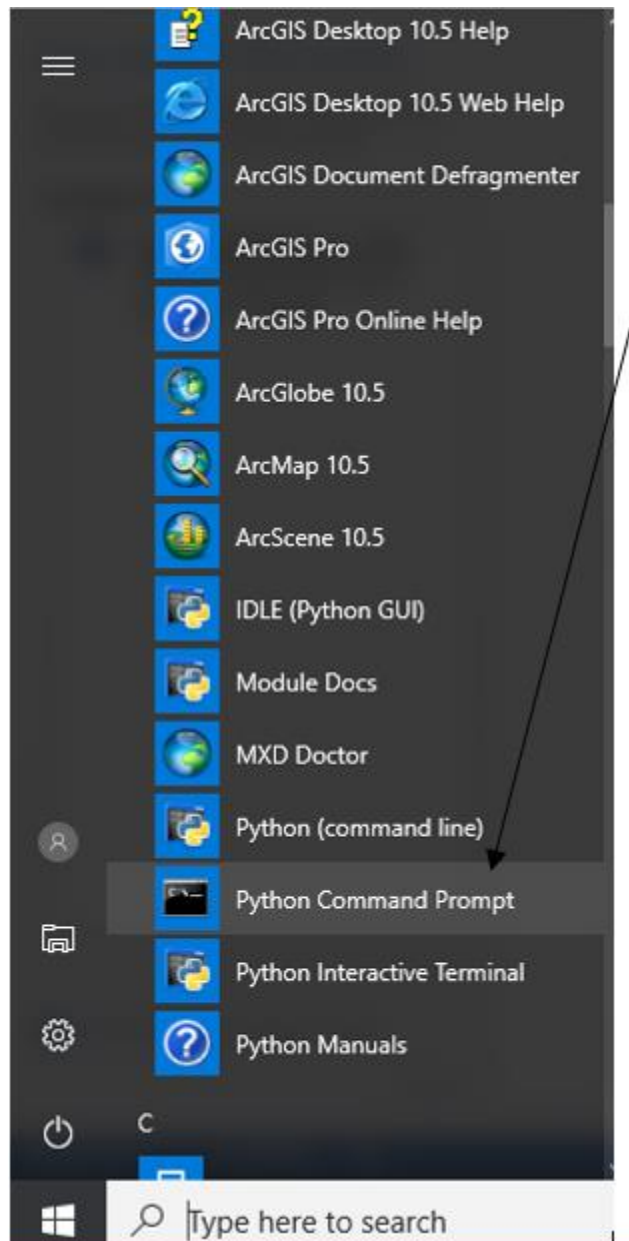
```
Python 3.5.2 [Continuum Analytics, Inc.] (default, Jul 5 2016, 11:41:13) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Two callout boxes are present: "Python Version" with an arrow pointing to the version number "3.5.2", and "64 Bit" with an arrow pointing to the architecture string "64 bit (AMD64)".

A screenshot of a Windows command prompt window titled "C:\Program Files\ArcGIS\Pro\bin\Python\python.exe". The window contains the following text:

```
Python 3.5.2 [Continuum Analytics, Inc.] (default, Jul 5 2016, 11:41:13) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import arcpy
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ImportError: No module named 'arcpy'
>>>
```

```
PS C:\coding\python> python
Python 2.7.10 (default, May 23 2015, 09:40:32) [MSC v.1500 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> 8/7
1
>>> print "hello"
hello
>>>
>>> from __future__ import print_function
>>>
>>> print("hello")
hello
>>>
>>> from __future__ import division
>>> 8/7
1.1428571428571428
>>>
```

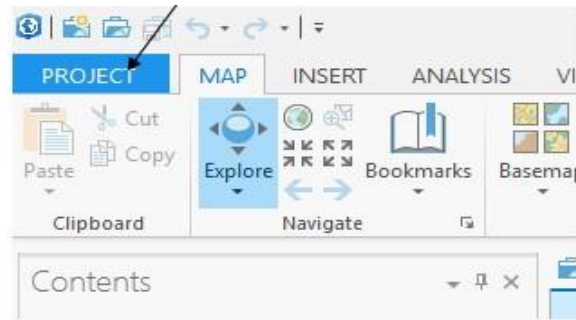



```
Python Command Prompt
Access is denied.
Insufficient privileges to use Conda. Please open a Python Command Prompt session with administrative privileges by right clicking on the link and selecting "Run as Administrator".
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>
```

```
python
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>python
Python 3.5.2 [Continuum Analytics, Inc.] (default, Jul 5 2016, 11:41:13) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import arcpy
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
  File "C:\Program Files\ArcGIS\Pro\Resources\ArcPy\arcpy\__init__.py", line 66, in <module>
    from arcpy.geoprocessing import gp
  File "C:\Program Files\ArcGIS\Pro\Resources\ArcPy\arcpy\geoprocessing\__init__.py", line 14, in <module>
    from .base import *
  File "C:\Program Files\ArcGIS\Pro\Resources\ArcPy\arcpy\geoprocessing\_base.py", line 14, in <module>
    import arcgisscripting
RuntimeError: Not signed into Portal.
>>>
```



Then click on Licensing and click the check box for "A"

ArcGIS Pro - PythonBook - Map

←

New

Open

Save

Save As

Portals

Licensing

Options

Python

Add-In Manager

Help

About

Exit

Licensing

ArcGIS Pro Named User License

Name	Version	Expires
Basic	1.4.0.7198	N/A
Standard	1.4.0.7198	N/A
Advanced	1.4.0.7198	6/27/2017

Esri Extensions

Name	Licensed	Version	Expires
3D Analyst	No	1.4.0.7198	N/A
ArcGIS Data Reviewer	No	1.4.0.7198	N/A
Data Interoperability	No	1.4.0.7198	N/A
Geostatistical Analyst	No	1.4.0.7198	N/A
Location Referencing	No	1.4.0.7198	N/A
Network Analyst	No	1.4.0.7198	N/A
Spatial Analyst	No	1.4.0.7198	N/A
StreetMap Premium Asia Pacific	No	1.4.0.7198	N/A
StreetMap Premium Europe	No	1.4.0.7198	N/A
StreetMap Premium Latin America	No	1.4.0.7198	N/A
StreetMap Premium Middle East and Africa	No	1.4.0.7198	N/A
StreetMap Premium North America	No	1.4.0.7198	N/A
Workflow Manager	No	1.4.0.7198	N/A

Settings

Authorize ArcGIS Pro to work offline ⓘ

Administrator: Python Command Prompt - python

```
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>python
Python 3.5.2 [Continuum Analytics, Inc.] (default, Jul 5 2016, 11:41:13) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Administrator: Python Command Prompt - python

```
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>python
Python 3.5.2 [Continuum Analytics, Inc.] (default, Jul 5 2016, 11:41:13) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import arcpy
>>>
```

Administrator: Windows PowerShell

```
PS C:\WINDOWS\system32>
PS C:\WINDOWS\system32> &"c:\Program Files\ArcGIS\Pro\bin\Python\Scripts\proenv.bat"
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>
```

Administrator: Windows PowerShell

```
[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>cd C:\coding
[arcgispro-py3] C:\Coding>
```

```
Administrator: Windows PowerShell

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>cd C:\coding
[arcgispro-py3] C:\Coding>python demo.py
hello world

[arcgispro-py3] C:\Coding>
```

```
[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>exit()
PS C:\WINDOWS\system32>
```

```
Administrator: Windows PowerShell - python
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\WINDOWS\system32> cd C:\coding\python
PS C:\coding\python> .\activateproenv.bat

C:\coding\python>call & ("c:\Program Files\ArcGIS\Pro\bin\Python\Scripts\proenv.bat")
Deactivating environment "c:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "c:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\coding\python>python
Python 3.5.3 [Continuum Analytics, Inc.] (default, Feb 22 2017, 21:28:42) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> import arcpy
>>>
```

```
PS C:\WINDOWS\system32> &("c:\Program Files\ArcGIS\Pro\bin\Python\Scripts\proenv.bat")
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>conda install spyder
Fetching package metadata: .....
Solving package specifications: .....
```



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\WINDOWS\system32> &("c:\Program Files\ArcGIS\Pro\bin\Python\Scripts\proenv.bat")
Deactivating environment "C:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>where spyder
C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3\Scripts\spyder.exe

[arcgispro-py3] C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>spyder
```

The image shows a screenshot of a software development environment. At the top, a menu bar includes File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, and Help. Below the menu is a toolbar with icons for file operations and execution. The main editor window displays a Python script with the following code:

```
18 template = r"C:\PythonBook\Scripts\PacktDB.gdb\SanFrancisco\Bus_Stops"
19 #create feature class in memory
20 FC = arcpy.CreateFeatureclass_management("in_memory", "FC", "POINT", template, "DISAB
21 #generate token
22 token = return_token(service_url, username, password)
23 #Loop over request number of times where count is number of features/1000
24 for x in range(count):
25     where = "OBJECTID">+str(n)
26     #url parameters
27     query = "/query?where={}&returnGeometry=true&outSR=2227&outFields=*&f=json&token=
28     fs_URL = base_URL + query #build the final url
29     fs = arcpy.FeatureSet()
30     fs.load(fs_URL)
31     arcpy.Append_management (fs, FC, "NO_TEST")
32
33     n+=1000 #add 1000 to n for next query
34
35     print n
36
37 with arcpy.da.SearchCursor(FC, ['OID@', 'SHAPE@XY', "FACILITYID"]) as cursor:
```

The left sidebar shows a file explorer with a tree view of folders and files, including BIOS, Coding, drivers, Logs, OSTotoFolder, PerfLogs, Program Files, Python27, PythonBook, temp, Users, Windows, Windows.old, LPMSetup.log, and ntuser.dat. The bottom-left pane shows an outline of the script structure:

```
final_script.py
  update_featureclass_agol
    main
    if __name__ == '__main__':
```

The bottom-right pane is an IPython console window with the following text:

```
IPython 5.3.0 -- An enhanced Interactive Python.
?          -> Introduction and overview of IPython's features.
%quickref -> Quick reference.
help       -> Python's own help system.
object?    -> Details about 'object', use 'object??' for extra details.

In [1]: import arcpy

In [2]: print("hello world")
hello world

In [3]:
```

A red arrow points from the 'Run' button in the top toolbar to the 'In [1]: import arcpy' line in the IPython console.

Permissions: RW End-of-lines: CRLF

```
Administrator: Windows PowerShell

PS C:\coding\python> .\activateproenv.bat

C:\coding\python>call & ("c:\Program Files\ArcGIS\Pro\bin\Python\Scripts\proenv.bat")
Deactivating environment "c:\Program Files\ArcGIS\Pro\bin\Python"...
Activating environment "c:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3"...

[arcgispro-py3] C:\coding\python>conda list
# packages in environment at c:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3:
#
DEPRECATION: The default format will switch to columns in the future. You can use --format=(legacy|columns) (or define a
format=(legacy|columns) in your pip.conf under the [list] section) to disable this warning.
alabaster 0.7.10 py35_0 defaults
arcgispro 1.4 0 esri
astroid 1.4.9 py35_0 defaults
babel 2.3.4 py35_0 defaults
bleach 1.5.0 py35_0 defaults
chardet 2.3.0 py35_0 defaults
colorama 0.3.7 py35_0 defaults
cyclen 0.10.0 py35_0 defaults
decorator 4.0.11 py35_0 defaults
docutils 0.13.1 py35_0 defaults
entrypoints 0.2.2 py35_1 defaults
freetype 2.6.3 vc14_1 [vc14] esri
future 0.16.0 py35_1 defaults
html5lib 0.999 py35_0 defaults
icu 57.1 vc14_0 [vc14] defaults
imagesize 0.7.1 py35_0 defaults
ipykernel 4.5.2 py35_0 defaults
ipython 5.3.0 py35_0 defaults
ipython-genutils 0.1.0 <pip>
ipython_genutils 0.1.0 py35_0 defaults
isort 4.2.5 py35_1 defaults
jedi 0.9.0 py35_1 defaults
jinja2 2.9.5 py35_0 defaults
jpeo 9b vc14_0 [vc14] defaults
jsonschema 2.5.1 py35_0 defaults
jupyter-client 5.0.0 <pip>
jupyter-core 4.3.0 <pip>
```

```
Administrator: Windows PowerShell

[arcgispro-py3] C:\Coding\Python>conda info
Current conda install:

          platform : win-64
        conda version : 4.0.11
conda-build version : not installed
      python version : 3.5.2.final.0
    requests version : 2.11.1
   root environment : C:\Program Files\ArcGIS\Pro\bin\Python (writable)
 default environment : C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3
  envs directories : C:\Program Files\ArcGIS\Pro\bin\Python\envs
    package cache : C:\Program Files\ArcGIS\Pro\bin\Python\pkgs
   channel URLs : https://conda.anaconda.org/esri/win-64/
                  https://conda.anaconda.org/esri/noarch/
                  https://repo.continuum.io/pkgs/free/win-64/
                  https://repo.continuum.io/pkgs/free/noarch/
                  https://repo.continuum.io/pkgs/pro/win-64/
                  https://repo.continuum.io/pkgs/pro/noarch/
         config file : C:\Program Files\ArcGIS\Pro\bin\Python\.condarc
       is foreign system : False

[arcgispro-py3] C:\Coding\Python>
```



```
Administrator: Windows PowerShell

[arcgispro-py3] C:\coding\python>conda install jupyter
Fetching package metadata: .....
Solving package specifications: .....

Package plan for installation in environment: c:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3:

The following packages will be downloaded:

-----
package | build | size
-----|-----|-----
jupyter_console-5.1.0 | py35_0 | 74 KB
notebook-4.4.1 | py35_0 | 5.4 MB
widgetsnbextension-2.0.0 | py35_0 | 877 KB
ipywidgets-6.0.0 | py35_0 | 65 KB
jupyter-1.0.0 | py35_3 | 3 KB
-----
Total: 6.4 MB

The following NEW packages will be INSTALLED:

ipywidgets: 6.0.0-py35_0
jupyter: 1.0.0-py35_3
jupyter_console: 5.1.0-py35_0
notebook: 4.4.1-py35_0
widgetsnbextension: 2.0.0-py35_0

Proceed ([y]/n)? y

Fetching packages ...
jupyter_console 100% #####| Time: 0:00:00 1.78 MB/s
notebook-4.4.1 100% #####| Time: 0:00:02 2.80 MB/s
widgetsnbexten 100% #####| Time: 0:00:00 3.46 MB/s
ipywidgets-6.0 100% #####| Time: 0:00:00 1.57 MB/s
jupyter-1.0.0- 100% #####| Time: 0:00:00 444.47 kB/s
Extracting packages ...
[ COMPLETE ]|#####| 100%
Linking packages ...
[ COMPLETE ]|#####| 100%

[arcgispro-py3] C:\coding\python>
```

```
Administrator: Windows PowerShell - jupyter notebook

[arcgispro-py3] C:\coding\python>jupyter notebook
[I 14:15:51.469 NotebookApp] Writing notebook server cookie secret to C:\Users\OBeirne\AppData\Roaming\jupyter\runtime\notebook_cookie_secret
[I 14:15:52.566 NotebookApp] Serving notebooks from local directory: C:\coding\python
[I 14:15:52.566 NotebookApp] 0 active kernels
[I 14:15:52.566 NotebookApp] The Jupyter Notebook is running at: http://localhost:8888/?token=b8873170c78737200c7568290e8cf63288d8d1bb5a4e76f3
[I 14:15:52.567 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 14:15:52.575 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
http://localhost:8888/?token=b8873170c78737200c7568290e8cf63288d8d1bb5a4e76f3
[I 14:15:57.054 NotebookApp] Accepting one-time-token-authenticated connection from ::1
[I 14:17:11.643 NotebookApp] 302 GET /?token=b8873170c78737200c7568290e8cf63288d8d1bb5a4e76f3 (::1) 1.00ms
```

Home x

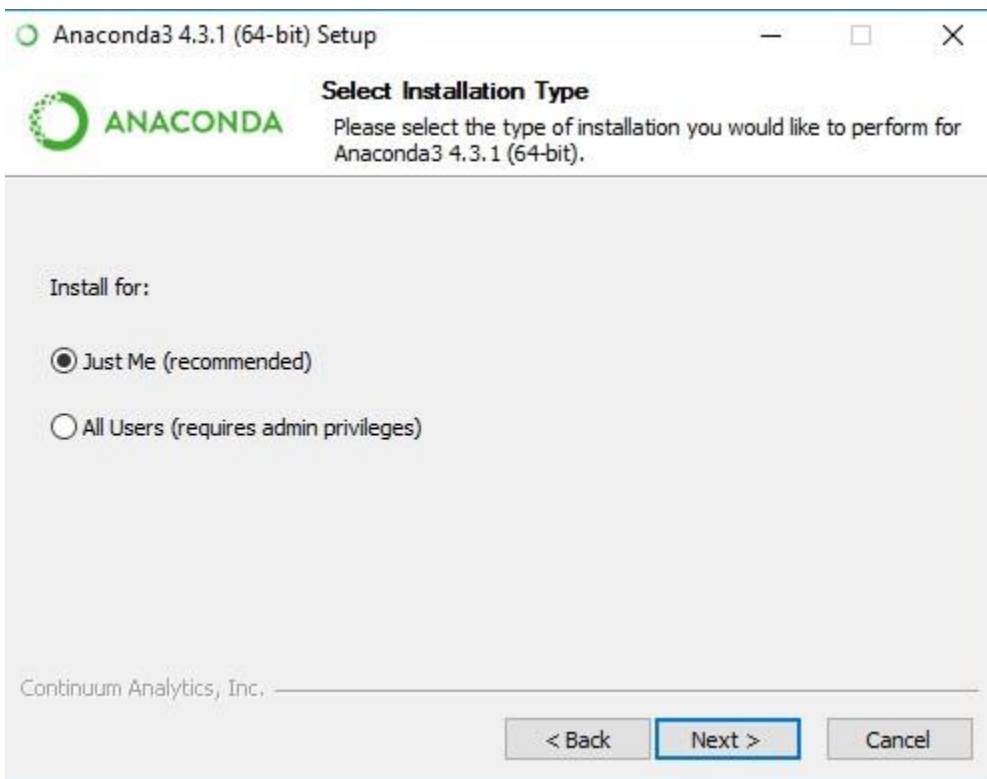
localhost:8888/tree?token=b8873170c78737200c7568290e8cf63288d8d1bb5a4e76f3

Jupyter

- activateproenv.bat
- arcpy_tips.pdf
- demo.py
- demo.py.bak
-

Chapter 12: ArcGIS API for Python





Anaconda3 4.3.1 (64-bit) Setup



Choose Install Location

Choose the folder in which to install Anaconda3 4.3.1 (64-bit).

Setup will install Anaconda3 4.3.1 (64-bit) in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.

Destination Folder

C:\Users\Dara\Anaconda3

Browse...

Space required: 1.8GB

Space available: 457.8GB


Continuum Analytics, Inc.

< Back

Next >

Cancel

Anaconda3 4.3.1 (64-bit) Setup

 **ANACONDA** **Advanced Installation Options**
Customize how Anaconda integrates with Windows

Advanced Options


Add Anaconda to my PATH environment variable
This ensures that PATH is set correctly when using Python, IPython, conda, and any other program in the Anaconda distribution. If unchecked, then you must use the Anaconda Command Prompt (located in the Start Menu under "Anaconda (64-bit)").

Register Anaconda as my default Python 3.6
This will allow other programs, such as Python Tools for Visual Studio, PyCharm, Wing IDE, PyDev, and MSI binary packages, to automatically detect Anaconda as the primary Python 3.6 on the system.

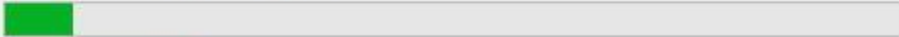
Continuum Analytics, Inc.

< Back **Install** Cancel

Anaconda3 4.3.1 (64-bit) Setup

 **ANACONDA** **Installing**
Please wait while Anaconda3 4.3.1 (64-bit) is being installed.

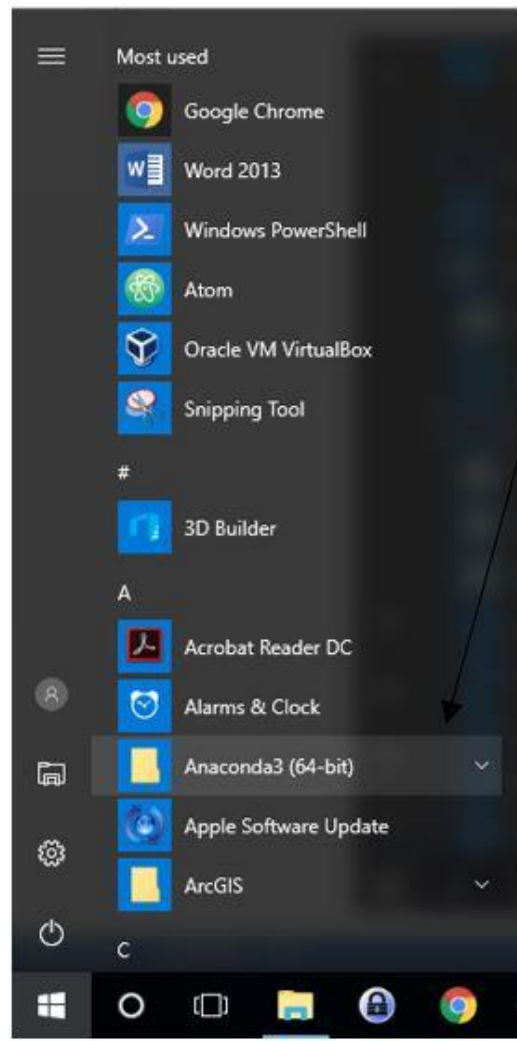
Extract: sphinx-1.5.1-py36_0.tar.bz2

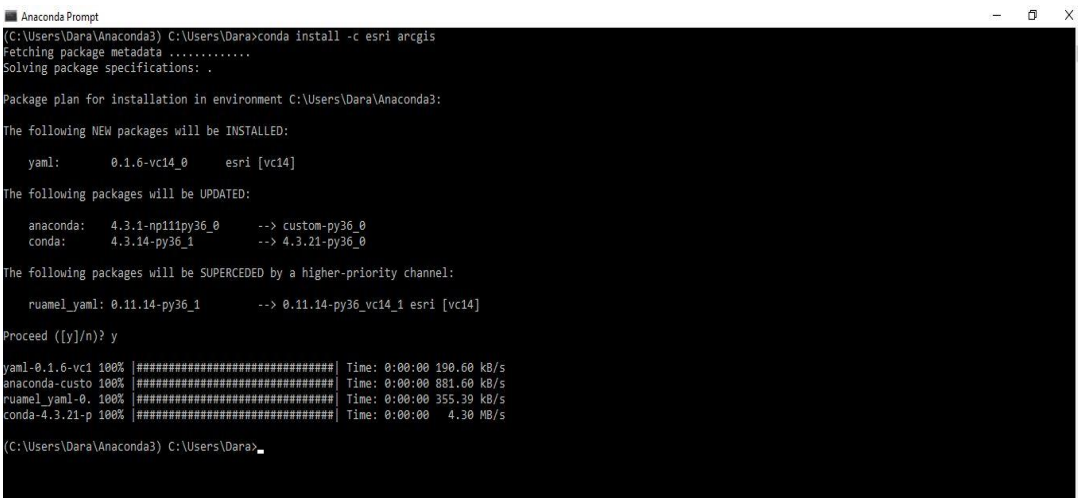
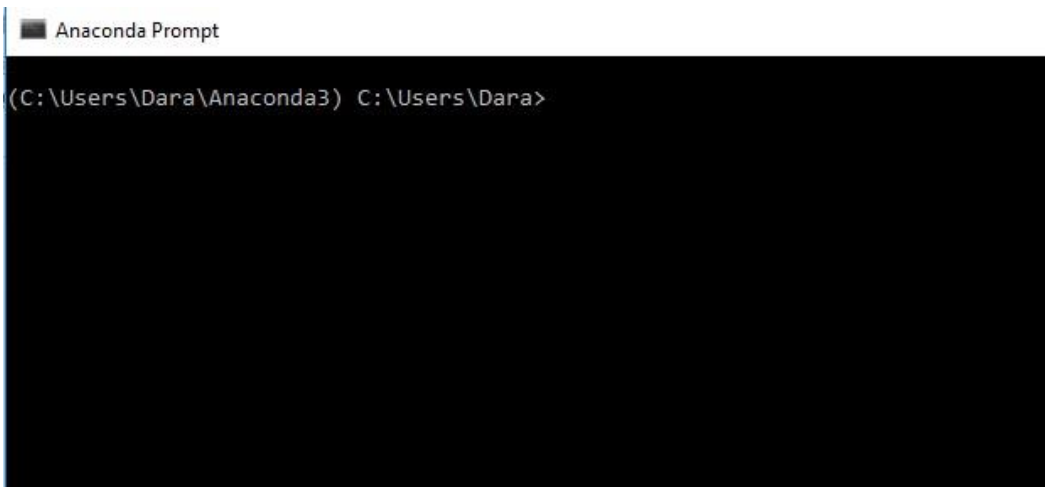


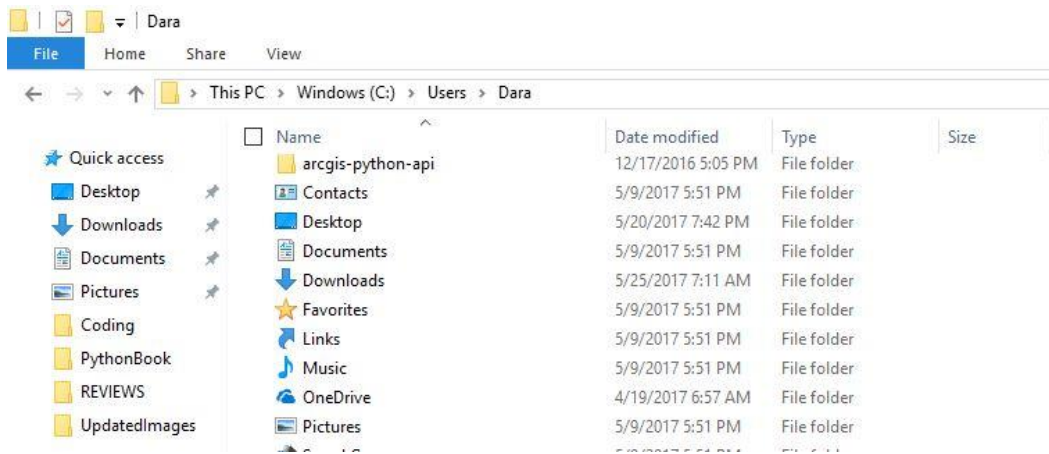
Show details

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< Back Next > Cancel



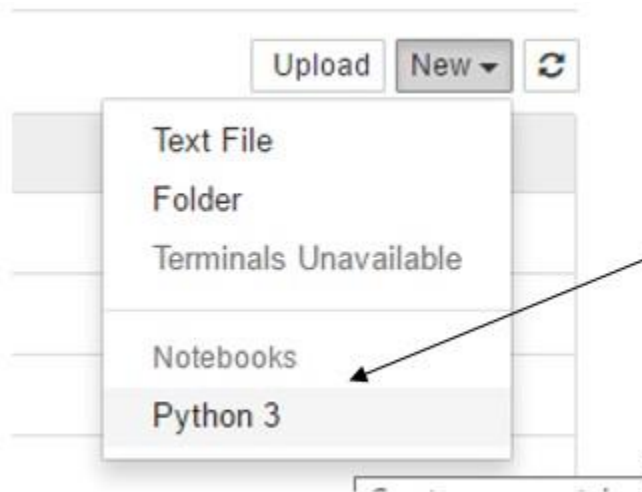
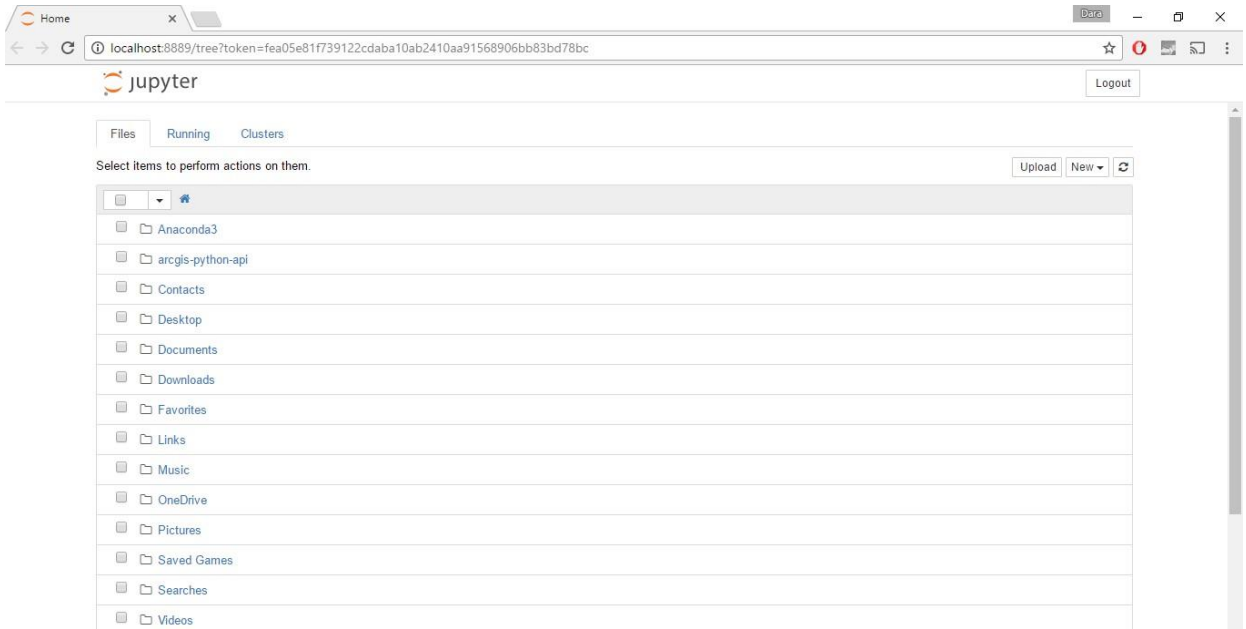


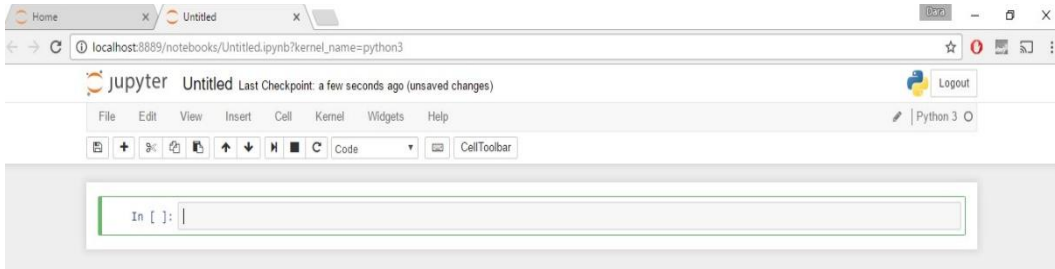


```
jupyter notebook

(C:\Users\Dara\Anaconda3) C:\Users\Dara>jupyter notebook
[I 12:15:12.294 NotebookApp] The port 8888 is already in use, trying another port.
[I 12:15:12.888 NotebookApp] Serving notebooks from local directory: C:\Users\Dara
[I 12:15:12.888 NotebookApp] 0 active kernels
[I 12:15:12.888 NotebookApp] The Jupyter Notebook is running at: http://localhost:8889/?token=e9b4655e8e3f09c8c585b0d569d662a9efc8698364f22da1
[I 12:15:12.888 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 12:15:12.920 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
  http://localhost:8889/?token=e9b4655e8e3f09c8c585b0d569d662a9efc8698364f22da1
[I 12:15:13.160 NotebookApp] Accepting one-time-token-authenticated connection from ::1
```

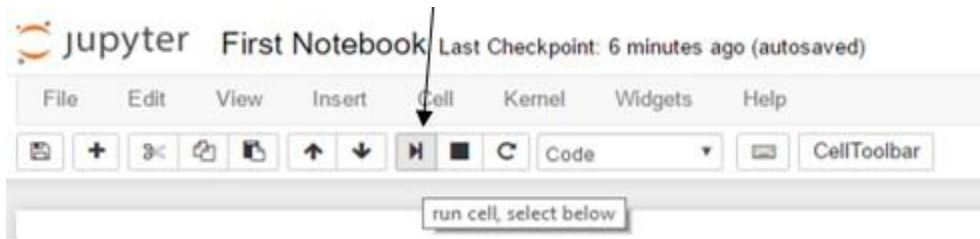


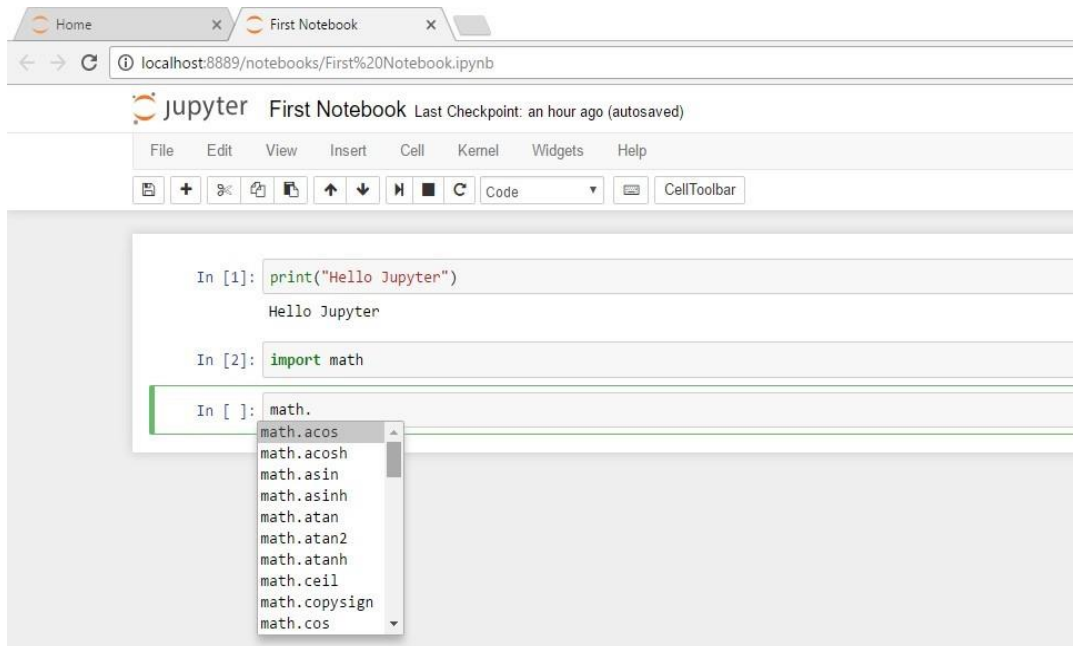
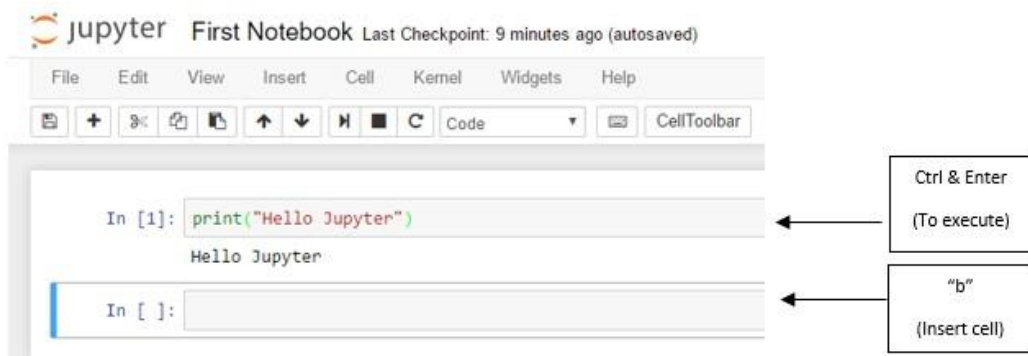


Rename Notebook ×

Enter a new notebook name:

OK Cancel





localhost:8889/notebooks/First%20Notebook.ipynb

Jupyter First Notebook Last Checkpoint: 3 hours ago (autosaved)

File Edit View Insert Cell Kernel Widgets Help

Code CellToolbar

```
In [1]: print("Hello Jupyter")
Hello Jupyter

In [2]: import math

In [3]: math.sqrt(16)
Out[3]: 4.0

In [5]: for i in range(100):
        print(i)
```

Init signature: range(self, /, *args, **kwargs)
Docstring:
range(stop) -> range object
range(start, stop[, step]) -> range object

4
5
6

```
In [ ]: print("hello")
In [ ]: print("world")
In [ ]: print("I'm here")
```

→

```
In [ ]: print("hello")
print("world")
print("I'm here")
```

File Edit View Insert Cell Kernel Widgets Help

Code CellToolbar

```
In [1]: print("Hello Jupyter")
```

```
Hello Jupyter
```

```
In [2]: import math
```

```
In [3]: math.sqrt(16)
```

```
Out[3]: 4.0
```

```
In [4]: for i in range(100):  
        print i
```

```
File "<ipython-input-4-f90dfd5040b1>", line 2
```

```
    print i  
          ^
```

```
SyntaxError: Missing parentheses in call to 'print'
```



```
In [1]: print("Hello Jupyter")
```

```
Hello Jupyter
```

```
In [2]: import math
```

```
In [3]: math.sqrt(16)
```

```
Out[3]: 4.0
```

```
In [5]: for i in range(100):  
        print(i)
```

```
0
```

```
1
```

```
2
```

```
3
```

```
4
```

```
5
```

```
6
```

```
7
```

In [6]: `ls`

```
Volume in drive C is Windows  
Volume Serial Number is 1AA5-03DB
```

```
Directory of C:\Users\Dara
```

```
04/08/2017  04:57 PM    <DIR>          .  
04/08/2017  04:57 PM    <DIR>          ..  
12/17/2016  09:10 PM    <DIR>          .anaconda  
08/19/2016  10:34 PM    <DIR>          .atom  
12/18/2016  04:46 PM                412 .bash_history  
12/17/2016  03:46 PM    <DIR>          .conda  
01/25/2017  08:22 PM                157 .gitconfig  
02/13/2017  06:15 PM    <DIR>          .idlerc
```

In [7]: `pwd`

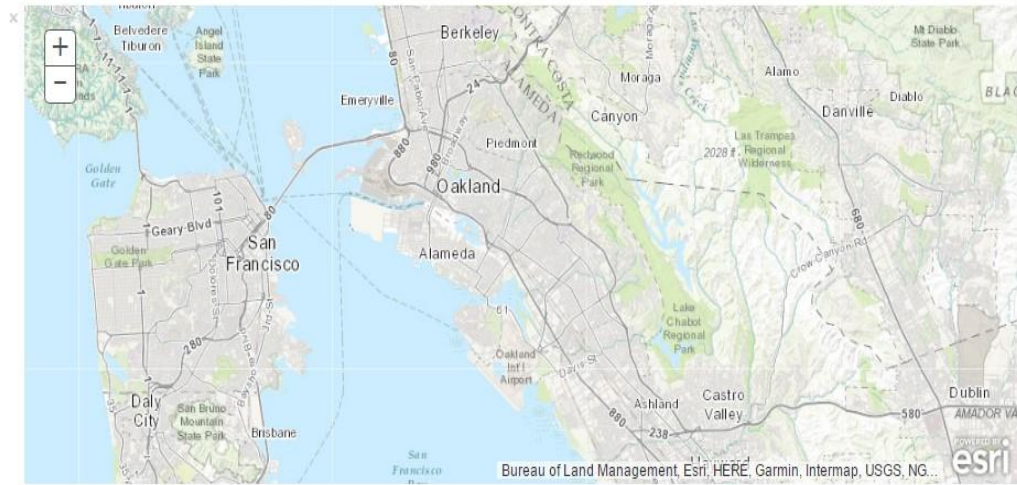
Out[7]: `'C:\\Users\\Dara'`

```
In [1]: from arcgis.gis import GIS
```

```
In [2]: gis = GIS()
```

```
In [3]: sf_map = gis.map("San Francisco")
```

```
In [4]: sf_map
```



```
In [4]: from arcgis.gis import GIS
```

```
In [13]: gis = GIS("https://www.arcgis.com", "username", "password")
```

```
In [14]: sf_map = gis.map("San Francisco")
```

```
In [15]: sf_map
```



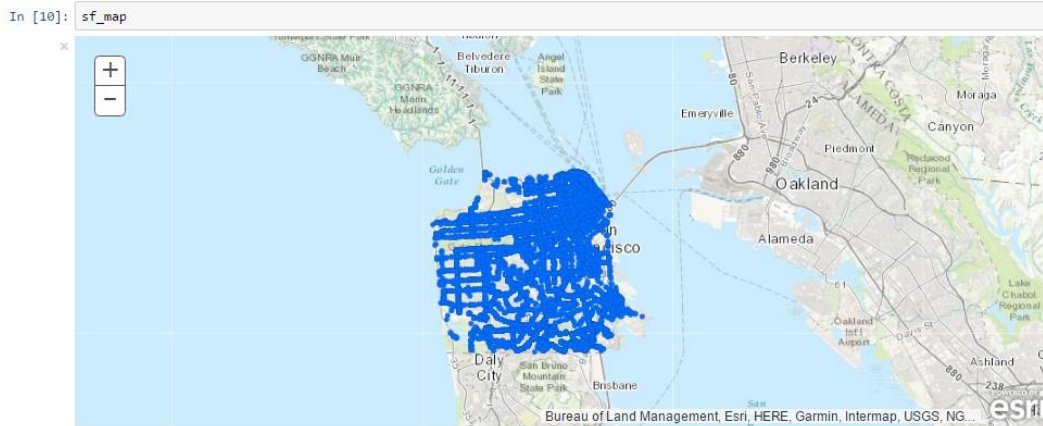
```
In [11]: from IPython.display import display
```

```
items = gis.content.search('SF')  
for item in items:  
    display(item)
```

[SF Parks](#)
SF Parks
Service Definition by arcpybook
Last Modified: April 08, 2017
0 comments, 1 views

[SF Openspace](#)
SF Openspace
Service Definition by arcpybook
Last Modified: April 08, 2017
0 comments, 1 views

```
In [12]: add_item = [bus_item for bus_item in items if bus_item.title == "SF_BusStops"]
sf_map.add_layer(add_item[0])
```



```
In [7]: import pandas as pd
dataFrame = pd.read_csv("C:\PythonBook\ch12_ArcGIS_PythonAPI\Ch12_Data\SFPD_2016.csv", encoding = "ISO-8859-1")
dataFrame
```

Out[7]:

	IncidentNum	Category	Descript	DayOfWeek	Date	Time	PdDistrict	Resolution	Address	Longitude
0	160000318	ROBBERY	ATTEMPTED ROBBERY WITH BODILY FORCE	Friday	1/1/2016 0:00	1:10	TENDERLOIN	NONE	300 Block of TAYLOR ST	-122.411303
1	160002988	LARCENY/THEFT	GRAND THEFT FROM LOCKED AUTO	Friday	1/1/2016 0:00	18:30	SOUTHERN	NONE	HOWARD ST / 5TH ST	-122.404934
2	160004138	OTHER OFFENSES	RESISTING ARREST	Saturday	1/2/2016 0:00	13:55	SOUTHERN	NONE	600 Block of MARKET ST	-122.401655
3	160008754	LARCENY/THEFT	GRAND THEFT FROM LOCKED AUTO	Monday	1/4/2016 0:00	10:50	RICHMOND	NONE	5300 Block of GEARY BL	-122.476719
4	160034975	SUSPICIOUS	SUSPICIOUS	Wednesday	1/13/2016 0:00	13:30	MISSION	NONE	1000 Block of	-122.406539

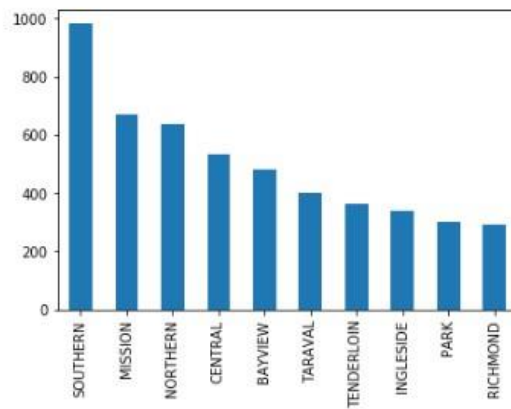
```
In [107]: dataframe['PdDistrict'].describe()
```

```
Out[107]: count      4999  
          unique       10  
          top      SOUTHERN  
          freq       981  
          Name: PdDistrict, dtype: object
```

```
In [114]: import matplotlib.pyplot as py_plot
```

```
In [115]: dataframe['PdDistrict'].value_counts().plot(kind='bar')
```

```
Out[115]: <matplotlib.axes._subplots.AxesSubplot at 0x1816015ffd0>
```




```
In [8]: pd_data = r"C:\PythonBook\ch12_ArcGIS_PythonAPI\Ch12_Data\SFPD_2016.csv"
pd_data_properties = {'title': 'SFPD calls for the year 2016',
                      'description': 'All the SFPD calls for the year 2016',
                      'tags': 'SF PD, calls, csv' }

thumbnail_pic = r"C:\PythonBook\ch12_ArcGIS_PythonAPI\Ch12_Data\SF_PD.PNG"

sf_pd_item = gis.content.add(item_properties=pd_data_properties, data=pd_data,
                             thumbnail = thumbnail_pic)

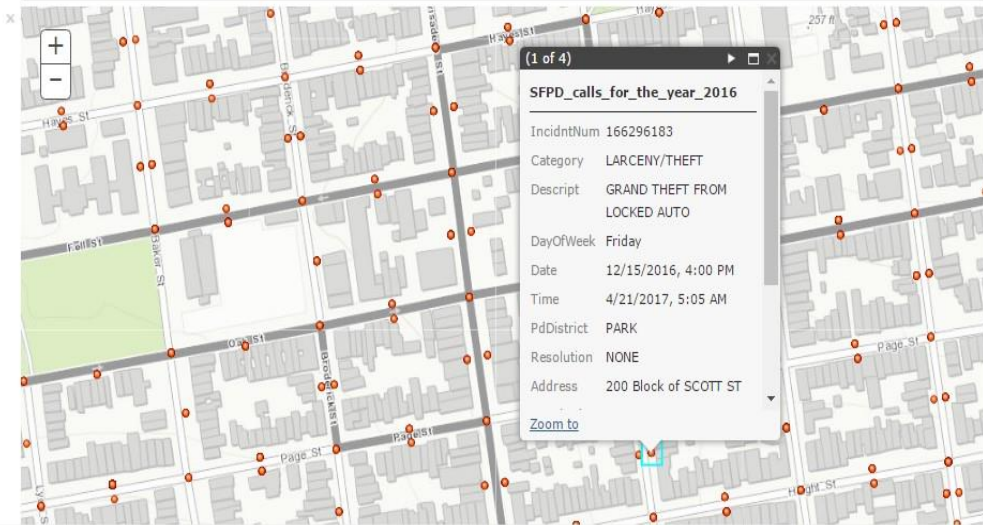
sf_pd_item
```

Out[8]:  [SFPD calls for the year 2016](#)
CSV by arcpybook
Last Modified: April 20, 2017
0 comments, 0 views

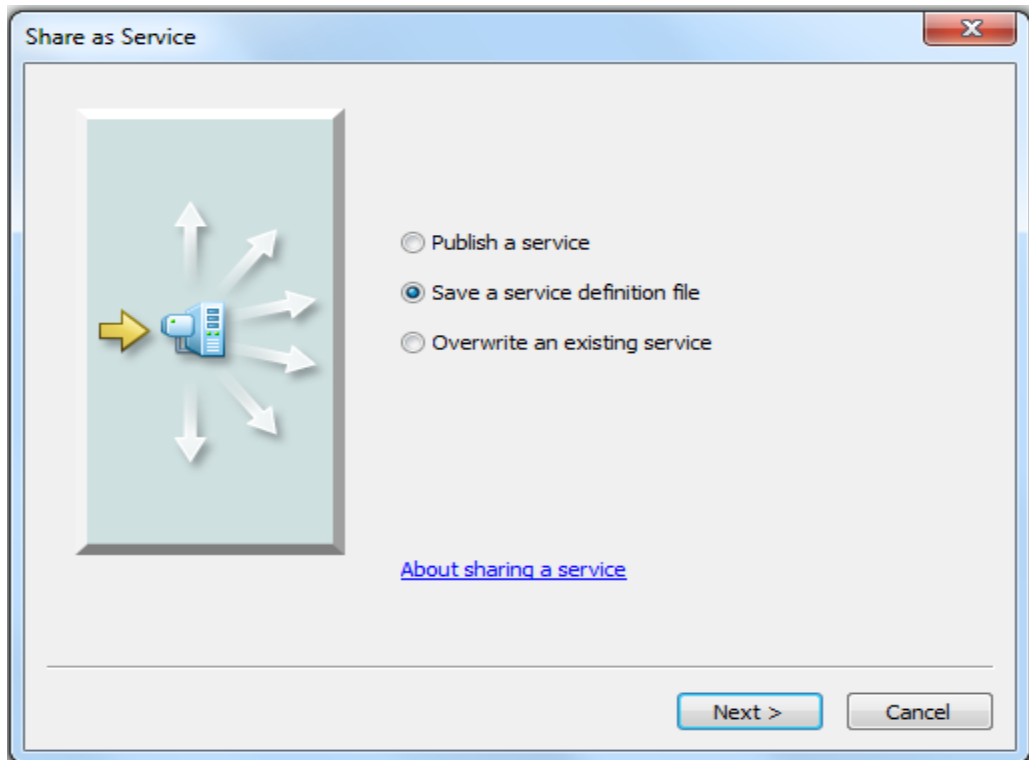
```
In [9]: sf_pd_feature_layer = sf_pd_item.publish()
sf_pd_feature_layer
```

Out[9]:  [SFPD calls for the year 2016](#)
Feature Layer Collection by arcpybook
Last Modified: April 20, 2017
0 comments, 0 views

```
In [35]: sf_crimemap = gis.map("Divisadero and Haight,San Francisco", zoomlevel=17)
sf_crimemap.add_layer(sf_pd_feature_layer)
sf_crimemap.height = '950px'
sf_crimemap
```



Chapter 13: Python and ArcGIS Enterprise



Save a Service Definition X

Choose a connection

Select an existing connection or create a new one +

Server type: No Connection Set

No available connection

Include data in service definition when publishing

Server type: ArcGIS Server

Service name

Chapter13Service

< Back Next > Cancel

