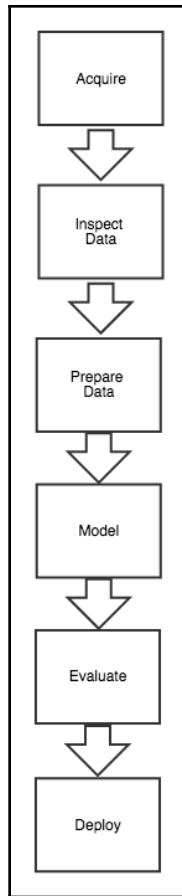


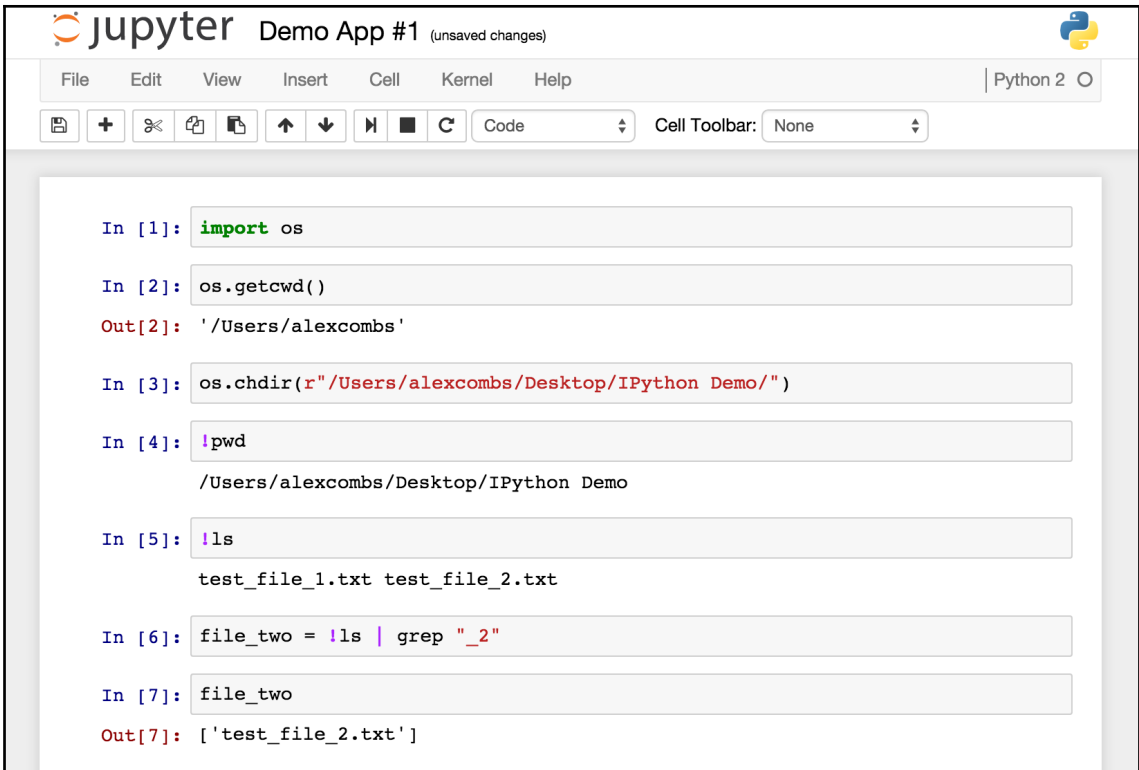
1 Graphics

Chapter 1: The Python Machine Learning Ecosystem



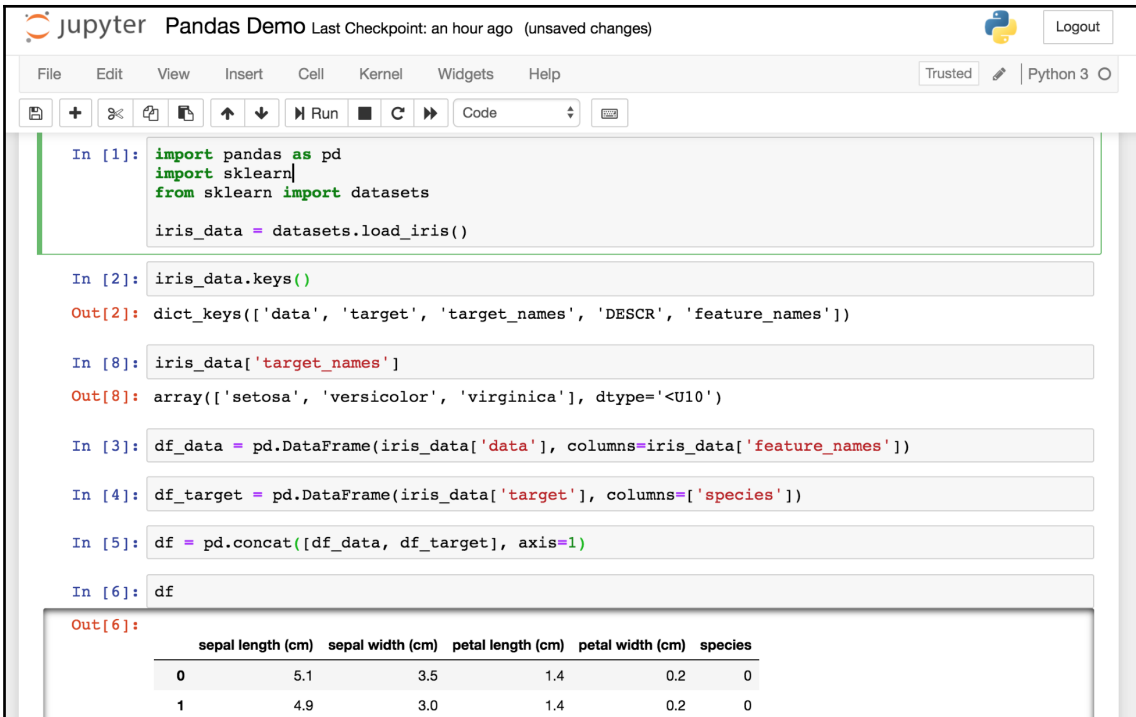
```
In [1]: import requests
In [2]: r = requests.get("https://api.github.com/users/acombs/starred")

In [3]: r.json()
Out[3]:
[{'archive_url': 'https://api.github.com/repos/kennethreitz/requests/{archive_format}/{ref}',
  'assignees_url': 'https://api.github.com/repos/kennethreitz/requests/assignees/{user}',
  'blobs_url': 'https://api.github.com/repos/kennethreitz/requests/git/blobs/{sha}',
  'branches_url': 'https://api.github.com/repos/kennethreitz/requests/branches{/branch}',
  'clone_url': 'https://github.com/kennethreitz/requests.git',
  'collaborators_url': 'https://api.github.com/repos/kennethreitz/requests/collaborators{/collaborator}',
  'comments_url': 'https://api.github.com/repos/kennethreitz/requests/comments{/number}',
  'commits_url': 'https://api.github.com/repos/kennethreitz/requests/commits/{sha}',
  'compare_url': 'https://api.github.com/repos/kennethreitz/requests/compare/{base}...{head}',
  'contents_url': 'https://api.github.com/repos/kennethreitz/requests/contents/{+path}',
  'contributors_url': 'https://api.github.com/repos/kennethreitz/requests/contributors',
  'created_at': '2011-02-13T18:38:17Z',
```



The screenshot shows a Jupyter Notebook interface titled "jupyter Demo App #1 (unsaved changes)". The interface includes a menu bar with "File", "Edit", "View", "Insert", "Cell", "Kernel", and "Help". The kernel is set to "Python 2". Below the menu bar is a toolbar with icons for saving, adding, deleting, and running cells, along with a "Code" dropdown and a "Cell Toolbar" set to "None".

```
In [1]: import os
In [2]: os.getcwd()
Out[2]: '/Users/alexcombs'
In [3]: os.chdir(r"/Users/alexcombs/Desktop/IPython Demo/")
In [4]: !pwd
/Users/alexcombs/Desktop/IPython Demo
In [5]: !ls
test_file_1.txt test_file_2.txt
In [6]: file_two = !ls | grep "_2"
In [7]: file_two
Out[7]: ['test_file_2.txt']
```



Jupyter Pandas Demo Last Checkpoint: an hour ago (unsaved changes)

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3

```
In [1]: import pandas as pd
import sklearn
from sklearn import datasets

iris_data = datasets.load_iris()
```

```
In [2]: iris_data.keys()
Out[2]: dict_keys(['data', 'target', 'target_names', 'DESCR', 'feature_names'])
```

```
In [8]: iris_data['target_names']
Out[8]: array(['setosa', 'versicolor', 'virginica'], dtype='<U10')
```

```
In [3]: df_data = pd.DataFrame(iris_data['data'], columns=iris_data['feature_names'])
```

```
In [4]: df_target = pd.DataFrame(iris_data['target'], columns=['species'])
```

```
In [5]: df = pd.concat([df_data, df_target], axis=1)
```

```
In [6]: df
```

```
Out[6]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0

```
In [9]: df.head()
```

```
Out[9]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

```
In [10]: df['sepal length (cm)']
```

```
Out[10]: 0    5.1  
1    4.9  
2    4.7  
3    4.6  
4    5.0  
5    5.4
```

```
In [15]: df.head()
```

```
Out[15]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

```
In [14]: df.iloc[:3,:2]
```

```
Out[14]:
```

	sepal length (cm)	sepal width (cm)
0	5.1	3.5
1	4.9	3.0
2	4.7	3.2

```
In [23]: df.head()
```

```
Out[23]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

```
In [24]: df.loc[:3, [x for x in df.columns if 'width' in x]]
```

```
Out[24]:
```

	sepal width (cm)	petal width (cm)
0	3.5	0.2
1	3.0	0.2
2	3.2	0.2
3	3.1	0.2

```
In [29]: df['species'].unique()
```

```
Out[29]: array([0, 1, 2])
```

```
In [30]: df[df['species']==2]
```

```
Out[30]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
100	6.3	3.3	6.0	2.5	2
101	5.8	2.7	5.1	1.9	2
102	7.1	3.0	5.9	2.1	2
103	6.3	2.9	5.6	1.8	2
104	6.5	3.0	5.8	2.2	2
105	7.6	3.0	6.6	2.1	2
106	4.9	2.5	4.5	1.7	2
107	7.3	2.9	6.3	1.8	2
108	6.7	2.5	5.8	1.8	2

```
In [31]: df.count()
```

```
Out[31]: sepal length (cm)    150  
          sepal width (cm)    150  
          petal length (cm)   150  
          petal width (cm)   150  
          species            150  
          dtype: int64
```

```
In [32]: df[df['species']==2].count()
```

```
Out[32]: sepal length (cm)    50  
          sepal width (cm)    50  
          petal length (cm)   50  
          petal width (cm)   50  
          species            50  
          dtype: int64
```



```
In [33]: virginica = df[df['species']==2].reset_index(drop=True)
```

```
In [34]: virginica
```

```
Out[34]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	6.3	3.3	6.0	2.5	2
1	5.8	2.7	5.1	1.9	2
2	7.1	3.0	5.9	2.1	2
3	6.3	2.9	5.6	1.8	2
4	6.5	3.0	5.8	2.2	2
5	7.6	3.0	6.6	2.1	2
6	4.9	2.5	4.5	1.7	2
7	7.3	2.9	6.3	1.8	2
8	6.7	2.5	5.8	1.8	2

```
In [36]: df[(df['species']==2)&(df['petal width (cm)']>2.2)]
```

```
Out[36]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
100	6.3	3.3	6.0	2.5	2
109	7.2	3.6	6.1	2.5	2
114	5.8	2.8	5.1	2.4	2
115	6.4	3.2	5.3	2.3	2
118	7.7	2.6	6.9	2.3	2
120	6.9	3.2	5.7	2.3	2
135	7.7	3.0	6.1	2.3	2
136	6.3	3.4	5.6	2.4	2

```
In [37]: df.describe()
```

```
Out[37]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
count	150.000000	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667	1.000000
std	0.828066	0.433594	1.764420	0.763161	0.819232
min	4.300000	2.000000	1.000000	0.100000	0.000000
25%	5.100000	2.800000	1.600000	0.300000	0.000000
50%	5.800000	3.000000	4.350000	1.300000	1.000000
75%	6.400000	3.300000	5.100000	1.800000	2.000000
max	7.900000	4.400000	6.900000	2.500000	2.000000

```
In [38]: df.describe(percentiles=[.10,.20,.30,.40,.50,.60,.70,.80,.90])
```

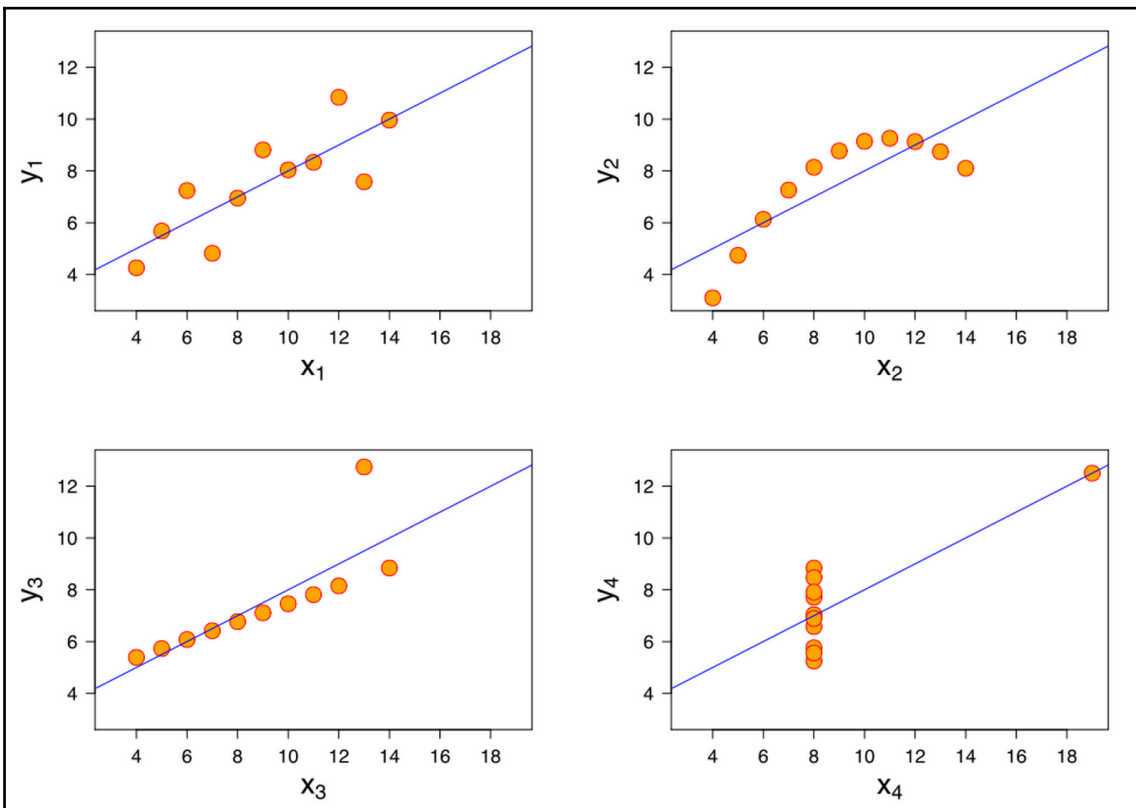
```
Out[38]:
```

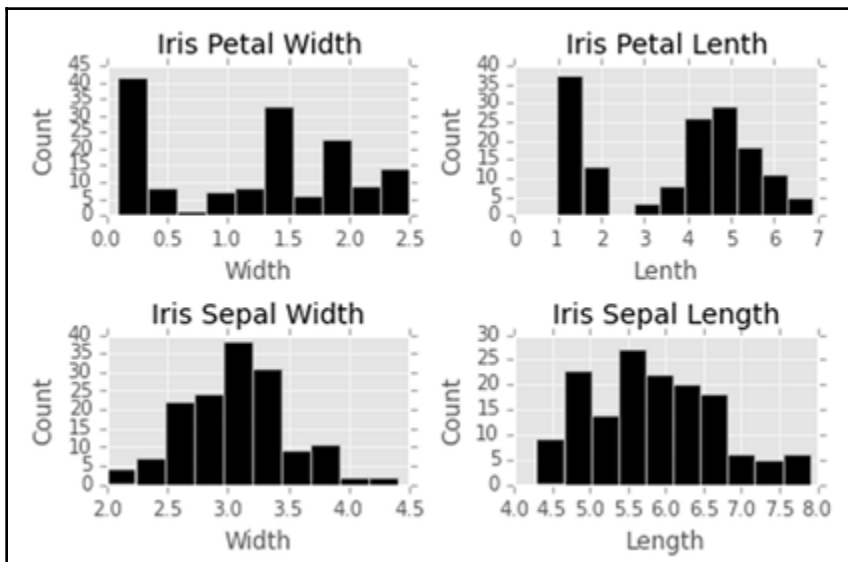
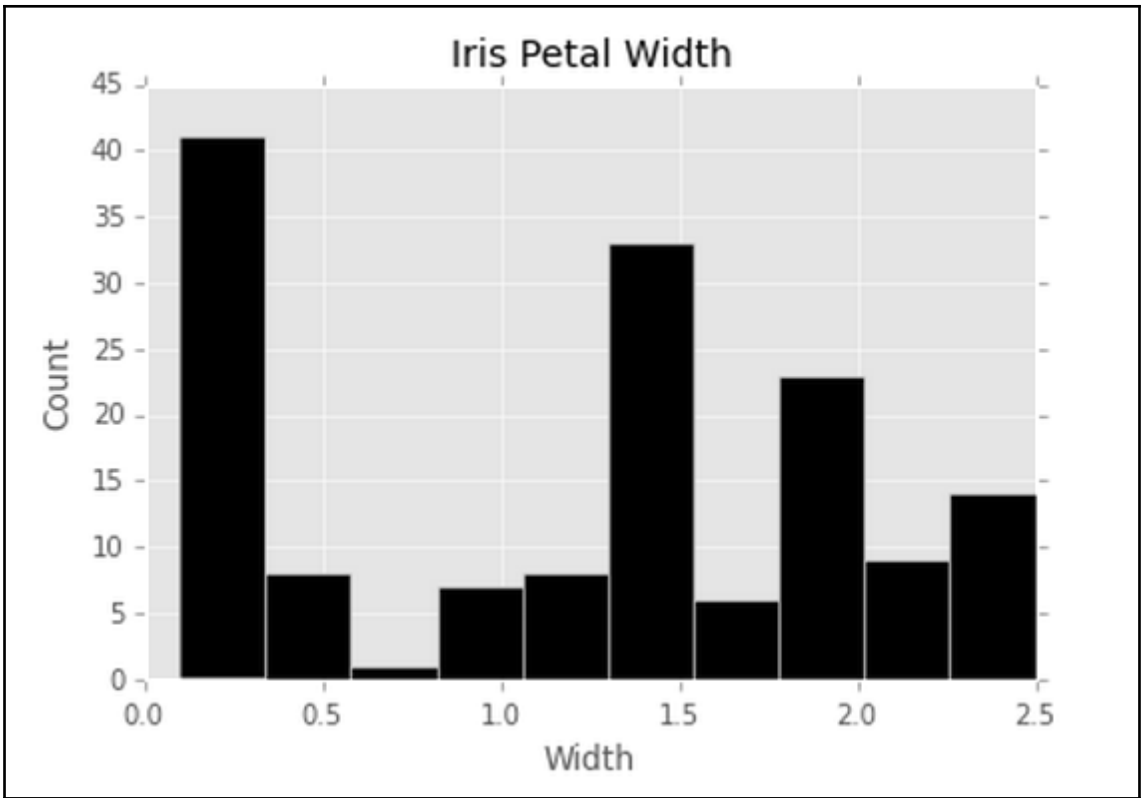
	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
count	150.000000	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667	1.000000
std	0.828066	0.433594	1.764420	0.763161	0.819232
min	4.300000	2.000000	1.000000	0.100000	0.000000
10%	4.800000	2.500000	1.400000	0.200000	0.000000
20%	5.000000	2.700000	1.500000	0.200000	0.000000
30%	5.270000	2.800000	1.700000	0.400000	0.000000
40%	5.600000	3.000000	3.900000	1.160000	1.000000
50%	5.800000	3.000000	4.350000	1.300000	1.000000
60%	6.100000	3.100000	4.640000	1.500000	1.000000
70%	6.300000	3.200000	5.000000	1.800000	2.000000
80%	6.520000	3.400000	5.320000	1.900000	2.000000
90%	6.900000	3.610000	5.800000	2.200000	2.000000
max	7.900000	4.400000	6.900000	2.500000	2.000000

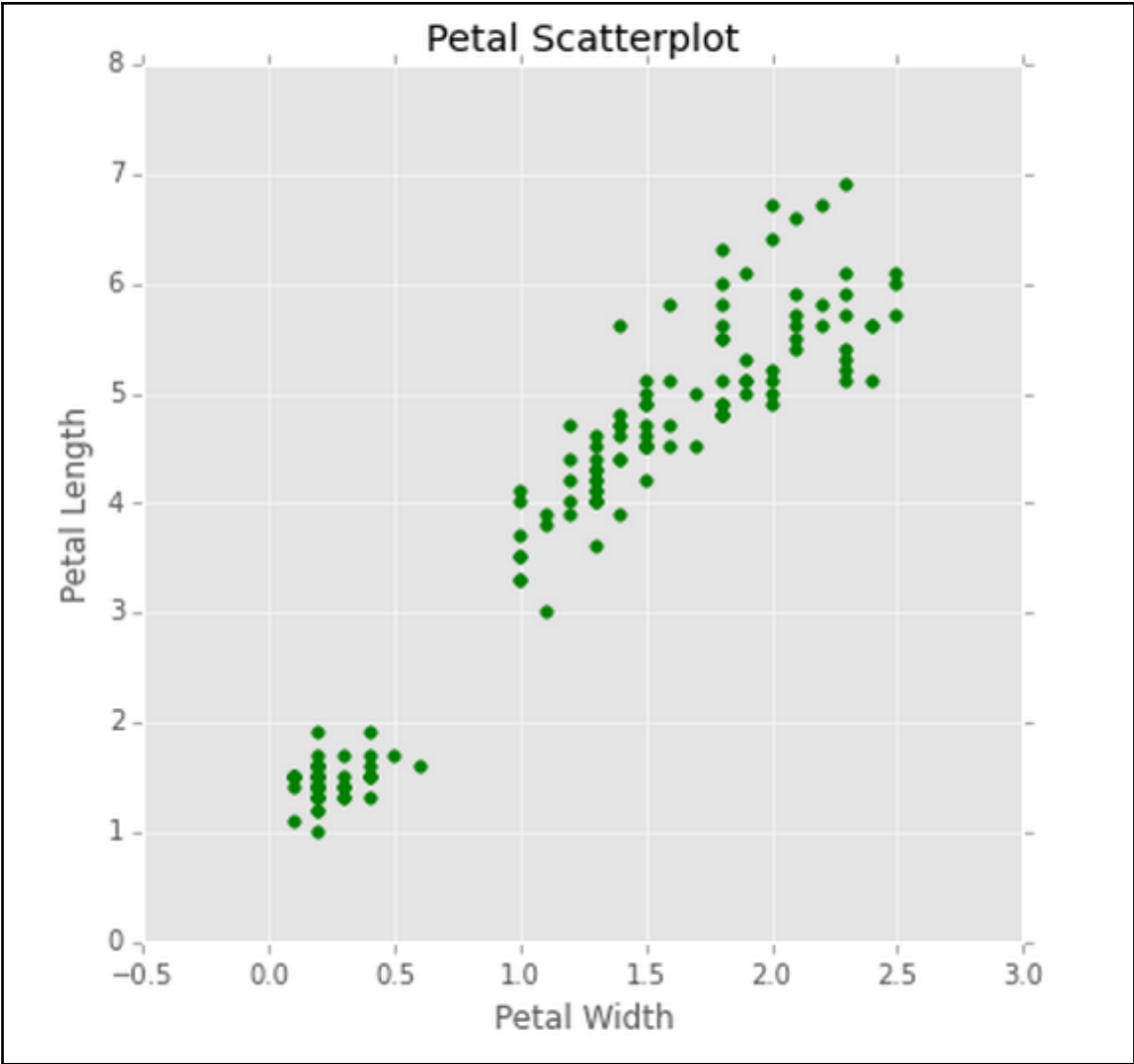
In [39]: `df.corr()`

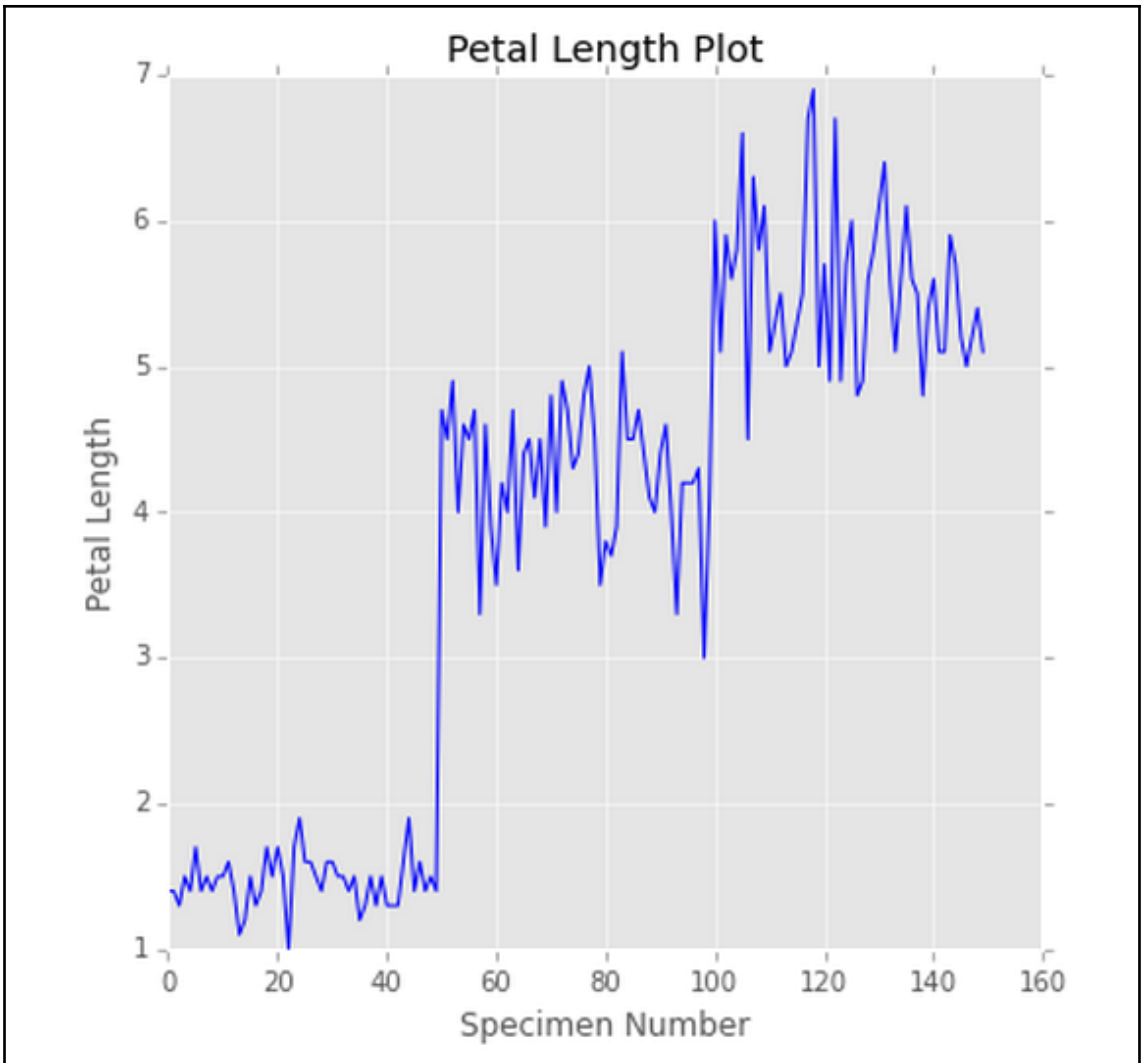
Out[39]:

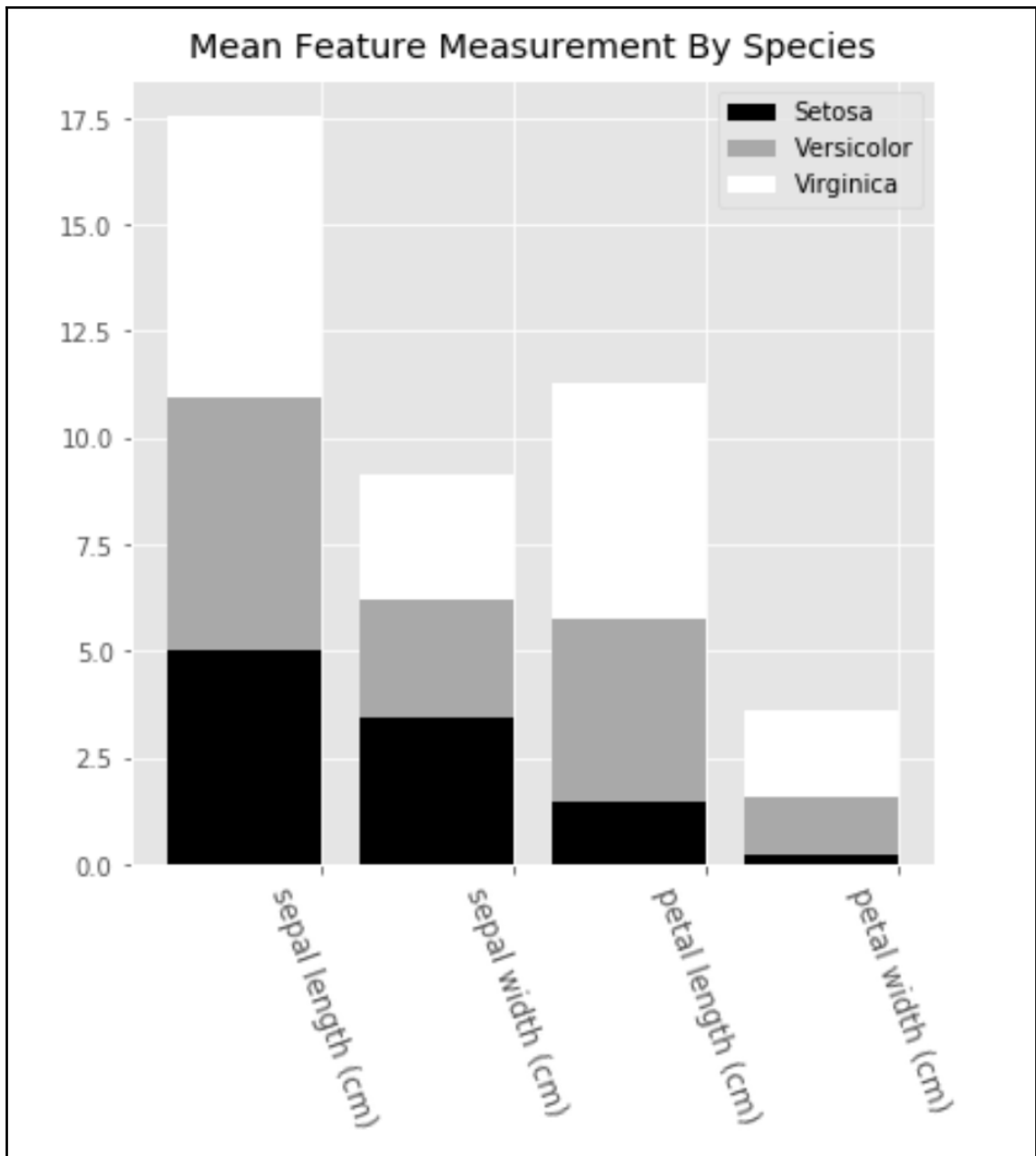
	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
sepal length (cm)	1.000000	-0.109369	0.871754	0.817954	0.782561
sepal width (cm)	-0.109369	1.000000	-0.420516	-0.356544	-0.419446
petal length (cm)	0.871754	-0.420516	1.000000	0.962757	0.949043
petal width (cm)	0.817954	-0.356544	0.962757	1.000000	0.956464
species	0.782561	-0.419446	0.949043	0.956464	1.000000

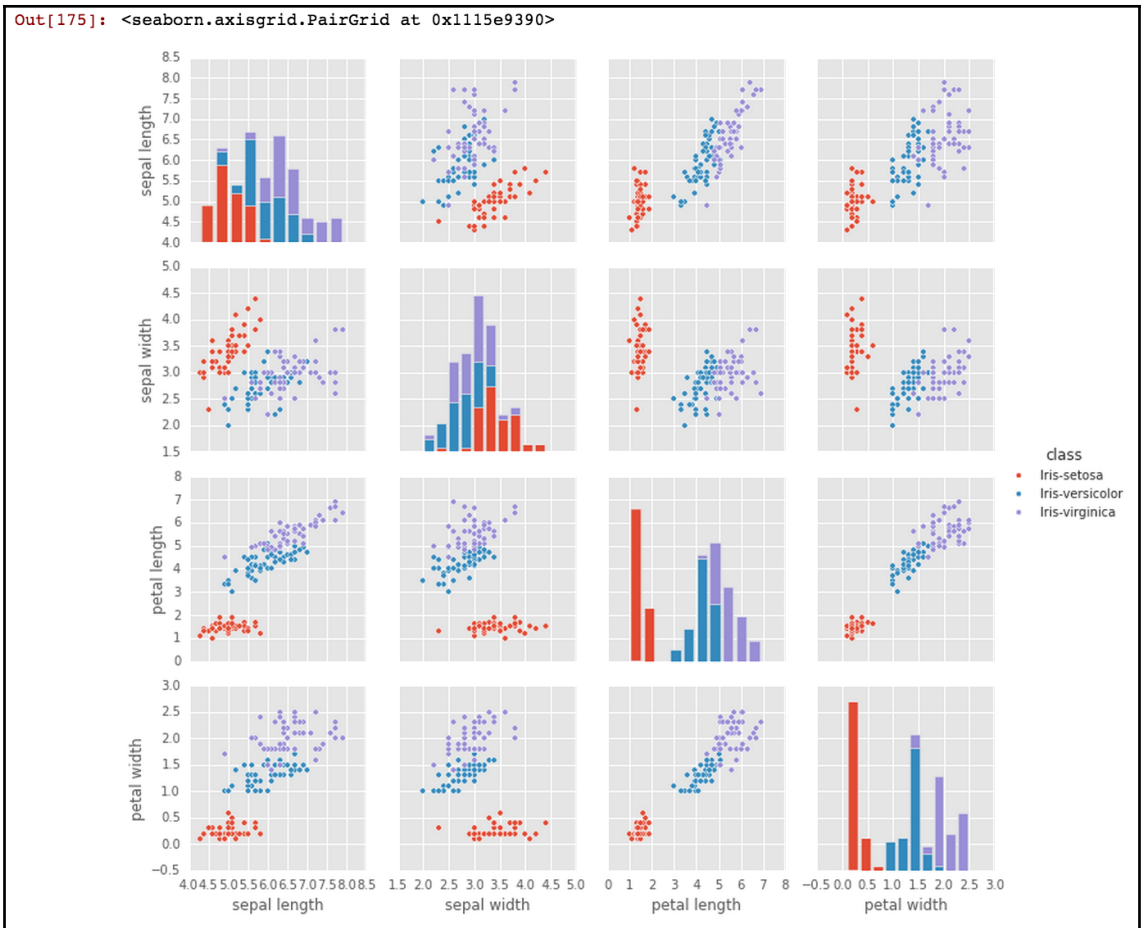


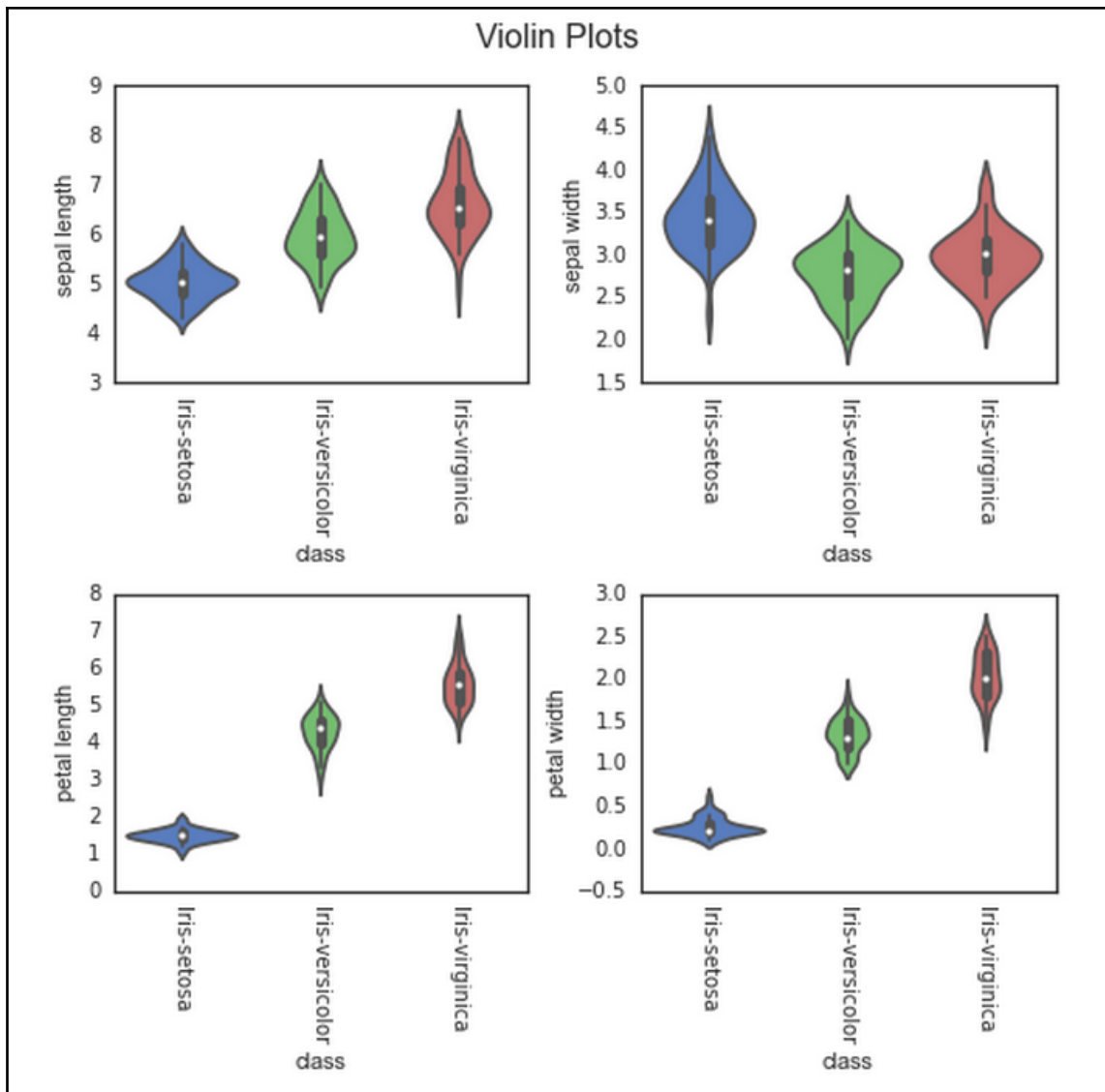












```
In [30]: df['species'] = df['species'].map({0: 'SET', 1: 'VER', 2: 'VIR'})
```

```
In [31]: df
```

```
Out[31]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	5.1	3.5	1.4	0.2	SET
1	4.9	3.0	1.4	0.2	SET
2	4.7	3.2	1.3	0.2	SET
3	4.6	3.1	1.5	0.2	SET
4	5.0	3.6	1.4	0.2	SET
5	5.4	3.9	1.7	0.4	SET
6	4.6	3.4	1.4	0.3	SET
7	5.0	3.4	1.5	0.2	SET
8	4.4	2.9	1.4	0.2	SET
9	4.9	3.1	1.5	0.1	SET
10	5.4	3.7	1.5	0.2	SET
11	4.8	3.4	1.6	0.2	SET

```
In [32]: df['wide petal'] = df['petal width (cm)'].apply(lambda v: 1 if v >= 1.3 else 0)
```

```
In [33]: df
```

```
Out[33]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species	wide petal
0	5.1	3.5	1.4	0.2	SET	0
1	4.9	3.0	1.4	0.2	SET	0
2	4.7	3.2	1.3	0.2	SET	0
3	4.6	3.1	1.5	0.2	SET	0
4	5.0	3.6	1.4	0.2	SET	0
5	5.4	3.9	1.7	0.4	SET	0
6	4.6	3.4	1.4	0.3	SET	0
7	5.0	3.4	1.5	0.2	SET	0
8	4.4	2.9	1.4	0.2	SET	0

```
In [34]: df['petal area'] = df.apply(lambda r: r['petal width (cm)'] * r['petal length (cm)'], axis=1)
```

```
In [35]: df
```

```
Out[35]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species	wide petal	petal area
0	5.1	3.5	1.4	0.2	SET	0	0.28
1	4.9	3.0	1.4	0.2	SET	0	0.28
2	4.7	3.2	1.3	0.2	SET	0	0.26
3	4.6	3.1	1.5	0.2	SET	0	0.30
4	5.0	3.6	1.4	0.2	SET	0	0.28
5	5.4	3.9	1.7	0.4	SET	0	0.68
6	4.6	3.4	1.4	0.3	SET	0	0.42
7	5.0	3.4	1.5	0.2	SET	0	0.30

```
In [36]: df.applymap(lambda x: np.log(x) if isinstance(x, float) else x)
```

```
Out[36]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species	wide petal	petal area
0	1.629241	1.252763	0.336472	-1.609438	SET	0	-1.272966
1	1.589235	1.098612	0.336472	-1.609438	SET	0	-1.272966
2	1.547563	1.163151	0.262364	-1.609438	SET	0	-1.347074
3	1.526056	1.131402	0.405465	-1.609438	SET	0	-1.203973
4	1.609438	1.280934	0.336472	-1.609438	SET	0	-1.272966
5	1.686399	1.360977	0.530628	-0.916291	SET	0	-0.385662
6	1.526056	1.223775	0.336472	-1.203973	SET	0	-0.867501
7	1.609438	1.223775	0.405465	-1.609438	SET	0	-1.203973

```
In [37]: df.groupby('species').mean()
```

```
Out[37]:
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	wide petal	petal area
species						
SET	5.006	3.418	1.464	0.244	0.0	0.3628
VER	5.936	2.770	4.260	1.326	0.7	5.7204
VIR	6.588	2.974	5.552	2.026	1.0	11.2962

```
In [38]: df.groupby('species').describe()
```

```
Out[38]:
```

species	petal area				petal length (cm)				sepal width (cm)		wide petal					
	count	mean	std	min	25%	50%	75%	max	count	mean	...	75%	max	count	mean	std
SET	50.0	0.3628	0.183248	0.11	0.2650	0.300	0.42	0.96	50.0	1.464	...	3.675	4.4	50.0	0.0	0.00000
VER	50.0	5.7204	1.368403	3.30	4.8600	5.615	6.75	8.64	50.0	4.260	...	3.000	3.4	50.0	0.7	0.46291
VIR	50.0	11.2962	2.157412	7.50	9.7175	11.445	12.79	15.87	50.0	5.552	...	3.175	3.8	50.0	1.0	0.00000

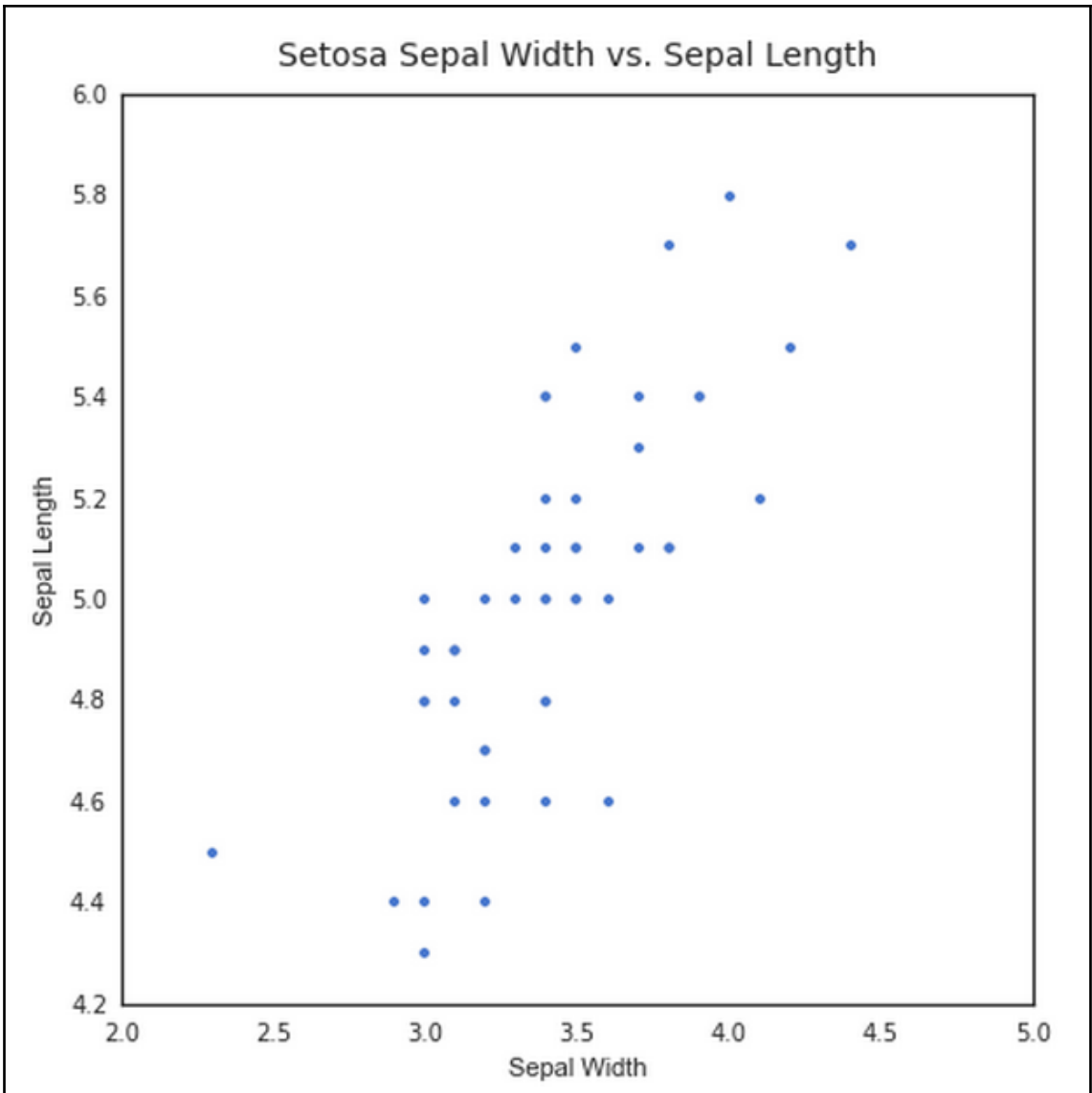
```
In [43]: df.groupby('petal width (cm)')['species'].unique().to_frame()
```

```
Out[43]:
```

petal width (cm)	species
0.1	[SET]
0.2	[SET]
0.3	[SET]
0.4	[SET]
0.5	[SET]
0.6	[SET]
1.0	[VER]
1.1	[VER]
1.2	[VER]
1.3	[VER]
1.4	[VER, VIR]
1.5	[VER, VIR]

```
In [51]: df.groupby('species')['petal width (cm)'].agg(lambda x: x.max() - x.min())
```

```
Out[51]: species
SET      0.5
VER      0.8
VIR      1.1
Name: petal width (cm), dtype: float64
```



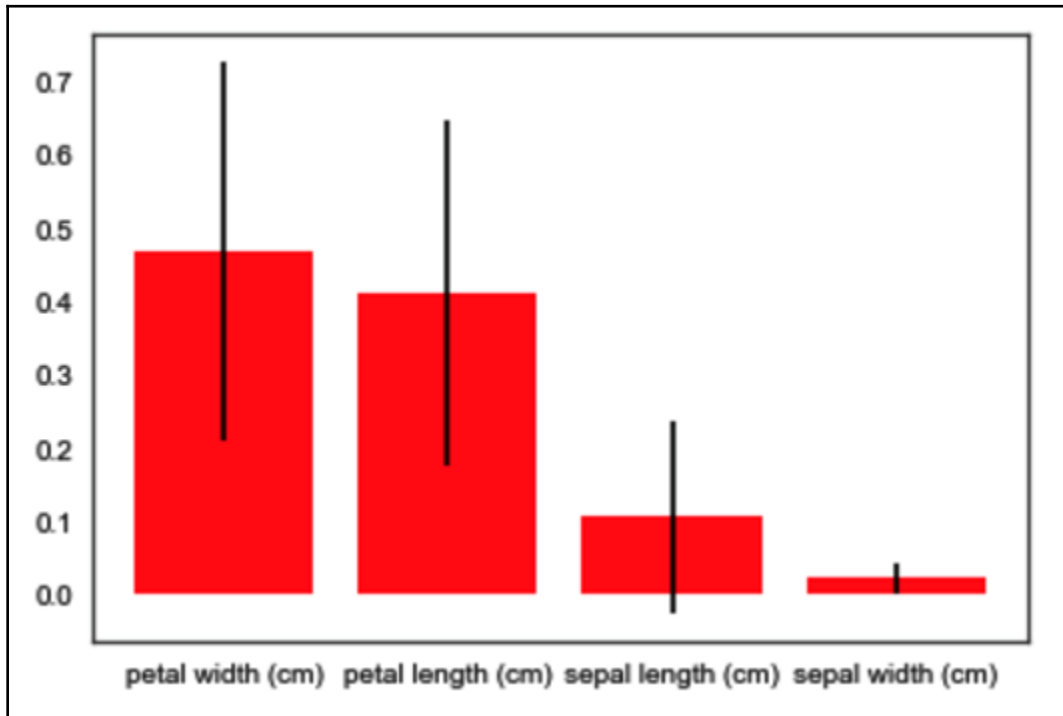
OLS Regression Results						
=====						
Dep. Variable:	sepal length	R-squared:	0.558			
Model:	OLS	Adj. R-squared:	0.548			
Method:	Least Squares	F-statistic:	60.52			
Date:	Sun, 11 Oct 2015	Prob (F-statistic):	4.75e-10			
Time:	18:14:39	Log-Likelihood:	2.0879			
No. Observations:	50	AIC:	-0.1759			
Df Residuals:	48	BIC:	3.648			
Df Model:	1					
=====						
	coef	std err	t	P> t	[95.0% Conf. Int.]	

const	2.6447	0.305	8.660	0.000	2.031	3.259
sepal width	0.6909	0.089	7.779	0.000	0.512	0.869
=====						
Omnibus:	0.252	Durbin-Watson:	2.517			
Prob(Omnibus):	0.882	Jarque-Bera (JB):	0.436			
Skew:	-0.110	Prob(JB):	0.804			
Kurtosis:	2.599	Cond. No.	34.0			
=====						



	predicted	actual	correct
0	VIR	VIR	1
1	SET	SET	1
2	VER	VER	1
3	SET	SET	1
4	VER	VER	1
5	VIR	VIR	1
6	VIR	VIR	1
7	VIR	VIR	1
8	VER	VER	1
9	VER	VER	1
10	VIR	VIR	1
11	VIR	VIR	1
12	SET	SET	1
13	VIR	VIR	1
14	SET	SET	1
15	VER	VER	1
16	SET	SET	1


0.9555555555555556



	predicted	actual	correct
0	SET	SET	1
1	VIR	VIR	1
2	VER	VER	1
3	VIR	VIR	1
4	SET	SET	1
5	VIR	VER	0
6	VIR	VIR	1
7	VER	VER	1
8	VIR	VIR	1
9	VER	VER	1
10	VIR	VER	0
11	VIR	VIR	1
12	VIR	VIR	1

0.9777777777777775

Chapter 2: Build an App to Find Underpriced Apartments


For Rent For Sale Saved Resources
Recent Searches Post Rental Login

to

NYC Apartment Finder


[Home](#) » [New York, NY](#)

Upcoming Open Houses

Sun, Jul 15	1:00pm - 10:00pm	\$3,000	2BR at 161 west 80th street
Sun, Jul 15	1:00pm - 10:00pm	\$2,750	1BR at 11 west 82nd street
Sun, Jul 15	1:00pm - 10:00pm	\$2,150	1BR at 143 west 80th street

« Back | Page of 3422 (68,428 Rentals) | Next »

Sort: [Quality](#) | [Price](#)



11 West 82nd Street, Apt 12A 21 mins | 100

Upper West Side, Upper Manhattan, Manhattan

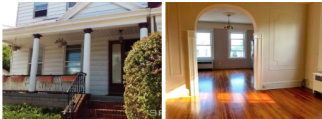
\$2,750 | 1 Bed | 1 Bath

[Hillary Pitt](#), Upper West Side Expert

Open House: Sun, Jul 15, 1:00pm - 10:00pm

Check Availability

[Exclusive](#) Elevator



78-11 87 Ave, Apt 2 12 mins | 100

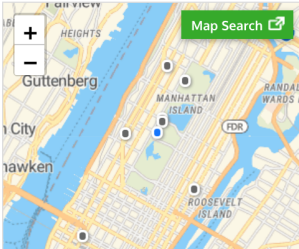
Woodhaven, Southwestern Queens, Queens

\$2,300 | 3 Bed | 1 Bath

By [Monika Bochen](#)

Check Availability

[Exclusive](#) 1,000 ft²



New York City, NY

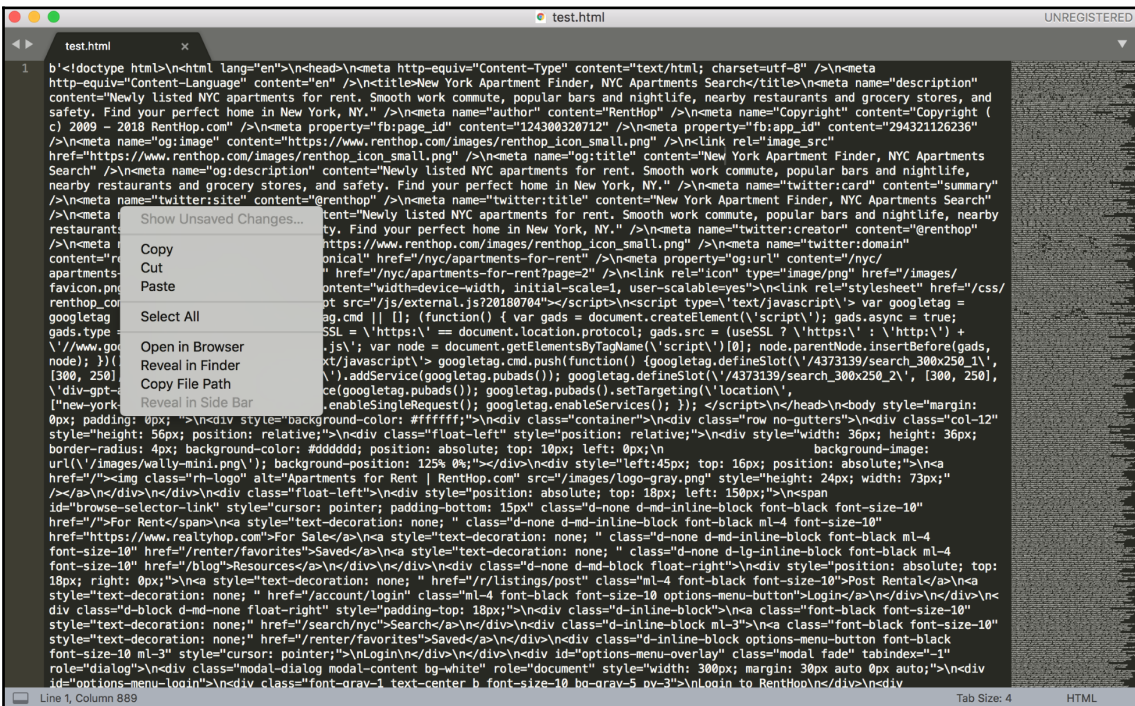
New York City is the world's greatest city. Of course, that is open to debate in many parts of the world, but among the residents long and new, there is simply no contest. Whether you seek gourmet dining, legendary Broadway shows, luxury brands, or more humble interests; you'll certainly find what you are looking for somewhere within the five boroughs of NYC.

Probably the most difficult part of living in New York is actually moving here, both because of the difficulty in finding NYC...

[Area Guide](#) · [Popular Buildings](#)

[27]

```
In [5]: r.content
04950728634361de941.jpg" alt="1 Bedroom, Upper West Side Rental in NYC for $3,000 - Photo 1">
</img>\n</a>\n<a style="text-decoration: none" href="https://www.renthop.com/listings/309-west-76-street/3b/12768571" class="d-none d-xl-inline-block">\n\n</img>\n</a>\n</div>\n<div class="search-info pr-3 pl-3 pr-md-0 pl-md-4">\n<div class="float-right align-top font-size-9">\n<span class="font-gray-2">3 hours</span>\n<span style="color: #444444;">\n<span class="font-size-9">\n<span id="listing-12768571-hopscore" fs="100" qs="100" ms="100" rs="100" class="hopscore-link b font-blue" style="cursor: pointer;">100</span>\n</div>\n<a id="listing-12768571-title" class="font-size-11 listing-title-link b" href="https://www.renthop.com/listings/309-west-76-street/3b/12768571">309 West 76 Street, Apt 3B</a>\n<div id="listing-12768571-neighborhoods" style="margin-top: -1px;" class="font-size-9 overflow-ellipsis">\nUpper West Side, Upper Manhattan, Manhattan\n</div>\n</div>\n<div style="margin-top: 8px;">\n<table id="listing-12768571-info">\n<tr>\n<td id="listing-12768571-price" class="font-size-11 bold" style="padding: 0px 10px 0px 0px; vertical-align: bottom;">\n$3,000\n</td>\n<td class="font-size-11" style="border-left: 1px solid #eeeeee; padding: 0px 10px 0px 10px; vertical-align: bottom;">\n<span style="font-weight: bold; color: #444444;">1 Bed</span>\n</td>\n<td class="font-size-11 bold" style="border-left: 1px solid #eeeeee; padding: 0px 10px 0px 10px; vertical-align: bottom;">\n<span style="font-weight: bold; color: #444444;">1 Bath</span>\n</td>\n</tr>\n</table>\n</div>\n<div class="font-size-9 overflow-ellipsis">
```





\n
\n
\n
\n29 mins\n / \n100\n
\n[East 35th Street](#)\n
\nMurray Hill, Midtown Manhattan, Manhattan\n
\n
\n
\n\n\n\n\n\n\n
\n\$3,450\n | \n2 Bed\n | \n1 Bath\n

The screenshot shows a real estate website with two property listings. The first listing is for West 150th Street, priced at \$2,350, with 2 bedrooms and 1 bathroom. The second listing is for East 72nd Street, priced at \$3,500, with 2 bedrooms and 1 bathroom. Below the listings is a browser's developer tools window. The HTML pane shows the structure of the search thumbnails, including the listing ID, latitude, longitude, and image source. The CSS pane shows the styles applied to the search thumbnails, including vertical-align, display, width, and height.

The screenshot shows a browser's developer tools window with the HTML pane expanded to show the structure of a table element. The table has a tbody with a single row containing a price of \$2,750 and a bedroom count of 1. The HTML structure is as follows:

```
<table id="listing-12886788-info">
  <tbody>
    <tr>
      <td id="listing-12886788-price" class="font-size-11 bold" style="padding: 0px 10px 0px 0px; vertical-align: bottom;">
        $2,750
      </td>
      <td class="font-size-11" style="border-left: 1px solid #e0e0e0; padding: 0px 10px 0px 10px; vertical-align: bottom;">
        <span style="font-weight: bold; color: #444444;">1 Bed</span>
      </td>
    </tr>
  </tbody>
</table>
```

```
In [6]: listing_divs = soup.select('div[class*=search-info]')
        listing_divs
```

```
Out[6]: [<div class="search-info pr-3 pl-3 pr-md-0 pl-md-4">
  <div>
  <div class="float-right align-top font-size-9">
  <span class="font-gray-2">30 mins</span>
  <span style="color: #d4d4d4;"> | </span>
  <span class="hopscore-link b font-blue" fs="100" id="listing-12890730-hopscore" ms="95" qs
  ="100" rs="100" style="cursor: pointer;">100</span>
  </div>
  <a class="font-size-11 listing-title-link b" href="https://www.renthop.com/listings/2309-ast
  oria-boulevard/2f/12890730" id="listing-12890730-title">2309 Astoria Boulevard, Apt 2F...</a>
  <div class="font-size-9 overflow-ellipsis" id="listing-12890730-neighborhoods" style="margin
  -top: -1px;">
  Astoria, Northwestern Queens, Queens
  </div>
  </div>
  </div>
  <div style="margin-top: 8px;">
  <table id="listing-12890730-info">
  <tbody><tr>
  <td class="font-size-11 bold" id="listing-12890730-price" style="padding: 0px 10px 0px 0px;
  vertical-align: bottom;">
```

```
len(listing_divs)
```

```
20
```

```
<div class="search-info pr-3 pl-3 pr-md-0 pl-md-4">
<div>
<div class="float-right align-top font-size-9">
<span class="font-gray-2">9 hours</span>
<span style="color: #d4d4d4;"> | </span>
<span class="hopscore-link b font-blue" fs="99" id="listing-12960379-hopscore" ms="90" qs="10
0" rs="100" style="cursor: pointer;">100</span>
</div>
<a class="font-size-11 listing-title-link b" href="https://www.renthop.com/listings/439-w-48t
h-st/3w/12960379" id="listing-12960379-title">439 W 48th St, Apt 3W</a>
<div class="font-size-9 overflow-ellipsis" id="listing-12960379-neighborhoods" style="margin-
top: -1px;">
Hell's Kitchen, Midtown Manhattan, Manhattan
</div>
</div>
<div style="margin-top: 8px;">
<table id="listing-12960379-info">
<tbody><tr>
<td class="font-size-11 bold" id="listing-12960379-price" style="padding: 0px 10px 0px 0px; v
ertical-align: bottom;">
```

```
'https://www.renthop.com/listings/439-w-48th-st/3w/12960379'
```

```
https://www.renthop.com/listings/439-w-48th-st/3w/12960379
439 W 48th St, Apt 3W
Hell's Kitchen, Midtown Manhattan, Manhattan
```

```
[ '$4,500', '3_Bed', '1_Bath' ]
```

```
[ ['https://www.renthop.com/listings/439-w-48th-st/3w/12960379',
  '439 W 48th St, Apt 3W',
  "Hell's Kitchen, Midtown Manhattan, Manhattan",
  '$4,500',
  '3_Bed',
  '1_Bath'],
  ['https://www.renthop.com/listings/rutgers-street/4hs/12959229',
  'Rutgers Street',
  'Two Bridges, Downtown Manhattan, Manhattan',
  '$3,895',
  '1_Bed',
  '1_Bath'],
  ['https://www.renthop.com/listings/485-hicks-street/1/11481619',
  '485 Hicks Street, Apt 1',
  'Cobble Hill, South Brooklyn, Brooklyn',
  '$1,999',
  '1_Bed',
  '1_Bath'],
  ['https://www.renthop.com/listings/east-35th-street/17g/12930185',
  'East 35th Street',
```

```
https://www.renthop.com/search/nyc?max_price=50000&min_price=0&page=1&sort=hopscore&q=&search=0
https://www.renthop.com/search/nyc?max_price=50000&min_price=0&page=2&sort=hopscore&q=&search=0
https://www.renthop.com/search/nyc?max_price=50000&min_price=0&page=3&sort=hopscore&q=&search=0
```


	url	address	neighborhood	rent	beds	baths
0	https://www.renthop.com/listings/east-75th-str...	East 75th Street	Upper East Side, Upper Manhattan, Manhattan	\$2,900	2_Bed	1_Bath
1	https://www.renthop.com/listings/15-w-103rd-st...	15 W 103rd St., Apt 1D	Manhattan Valley, Upper West Side, Upper Manha...	\$4,595	Studio	1.5_Bath
2	https://www.renthop.com/listings/private-balco...	871 Bergen Street, Apt 4	Crown Heights, Central Brooklyn, Brooklyn	\$4,150	3_Bed	1_Bath
3	https://www.renthop.com/listings/1-west-street...	1 West Street, Apt 2201	Financial District, Downtown Manhattan, Manhattan	\$2,800	1_Bed	1_Bath
4	https://www.renthop.com/listings/stanton-stree...	Stanton Street	Lower East Side, Downtown Manhattan, Manhattan	\$3,900	2_Bed	1_Bath
5	https://www.renthop.com/listings/long-island-c...	Long Island City, Hunters Poin...	Long Island City, Northwestern Queens, Queens	\$3,100	1_Bed	1_Bath
6	https://www.renthop.com/listings/west-end-ave/...	West End Ave.	Lincoln Square, Upper West Side, Upper Manhatt...	\$6,100	3_Bed	2_Bath

```
array(['1_Bed', '4_Bed', '2_Bed', 'Studio', '3_Bed', '5_Bed', '_Studio', 'Loft', '_1_Bed', '6_Bed', '_3_Bed', '_2_Bed'], dtype=object)
```

```
array(['1_Bath', '1.5_Bath', '2_Bath', '2.5_Bath', '_1_Bath', '3_Bath', '3.5_Bath', '_2.5_Bath', '_2_Bath', '4_Bath', '_3_Bath', '5_Bath', '4.5_Bath'], dtype=object)
```

```
array(['1_Bed', '4_Bed', '2_Bed', 'Studio', '3_Bed', '5_Bed', 'Loft', '6_Bed'], dtype=object)
```

```
array(['1_Bath', '1.5_Bath', '2_Bath', '2.5_Bath', '3_Bath', '3.5_Bath', '4_Bath', '5_Bath', '4.5_Bath'], dtype=object)
```

	url	address	neighborhood	rent	beds	baths
count		2000	1998	2000	2000	2000
unique		1773	1292	125	647	8
top	https://www.renthop.com/listings/106-ainslie-s...	York Ave.	Hell's Kitchen, Midtown Manhattan, Manhattan	\$3,200	1_Bed	1_Bath
freq		3	15	171	38	654

```
url          object
address      object
neighborhood object
rent         int64
beds         int64
baths        float64
dtype: object
```

	count
neighborhood	
Hell's Kitchen, Midtown Manhattan, Manhattan	171
Upper East Side, Upper Manhattan, Manhattan	115
Financial District, Downtown Manhattan, Manhattan	108
Upper West Side, Upper Manhattan, Manhattan	79
Yorkville, Upper East Side, Upper Manhattan, Manhattan	67
Williamsburg, Northern Brooklyn, Brooklyn	65
Murray Hill, Midtown Manhattan, Manhattan	64
Long Island City, Northwestern Queens, Queens	61
Rose Hill, Kips Bay, Midtown Manhattan, Manhattan	55
Bedford-Stuyvesant, Northern Brooklyn, Brooklyn	53

Upper East Side, Upper Manhattan, Manhattan	115
Yorkville, Upper East Side, Upper Manhattan, Manhattan	67
Lenox Hill, Upper East Side, Upper Manhattan, Manhattan	9
Carnegie Hill, Upper East Side, Upper Manhattan, Manhattan	5
Upper East Side, Upper Manhattan, Manhattan	1
Name: neighborhood, dtype: int64	

Upper East Side, Upper Manhattan, Manhattan	116
Yorkville, Upper East Side, Upper Manhattan, Manhattan	67
Lenox Hill, Upper East Side, Upper Manhattan, Manhattan	9
Carnegie Hill, Upper East Side, Upper Manhattan, Manhattan	5
Name: neighborhood, dtype: int64	

	mean
neighborhood	
Lincoln Square, Upper West Side, Upper Manhattan, Manhattan	7313.784314
SoHo, Downtown Manhattan, Manhattan	7177.272727
Tribeca, Downtown Manhattan, Manhattan	6571.400000
Governors Island, Manhattan	6000.000000
Midtown East, Midtown Manhattan, Manhattan	5884.200000
Flatiron District, Midtown Manhattan, Manhattan	5765.333333
North Slope, Park Slope, South Brooklyn, Brooklyn	5497.500000
Battery Park City, Downtown Manhattan, Manhattan	5388.578947
DUMBO, Northwestern Brooklyn, Brooklyn	5273.600000
Little Italy, Downtown Manhattan, Manhattan	5268.000000

The screenshot shows the Google Maps Platform documentation page for the Geocoding API. The page has a navigation bar with 'Overview', 'Products', 'Pricing', and 'Documentation'. Below the navigation bar, there are buttons for 'GET STARTED' and 'CONTACT SALES'. A blue banner at the top of the main content area states: 'New pricing changes went into effect on July 16, 2018. For more information, check out the [Guide for Existing Users](#).' The main content area is titled 'Get Started' and includes a five-star rating. The text explains that the Geocoding API provides geocoding and reverse geocoding of addresses. A blue callout box states: 'This service is also available as part of the client-side [Google Maps JavaScript API](#), or for server-side use with the [Java Client](#), [Python Client](#), [Go Client](#) and [Node.js Client for Google Maps Services](#).' The text defines geocoding as converting addresses into geographic coordinates and reverse geocoding as converting geographic coordinates into a human-readable address. It also mentions that the Geocoding API can find the address for a given place ID. On the left side, there is a sidebar with navigation links for 'Get Started', 'Web Services', and 'Policies and Terms'. On the right side, there is a 'Contents' section with links to 'Sample request and response', 'Geocoding request and response', 'Reverse geocoding request and response', 'Start coding with our client libraries', 'Authentication, quotas, pricing, and policies', 'Activate the API and get an API key', 'Quotas and pricing', 'Policies', and 'Learn more'.

The screenshot shows the 'Enable Google Maps Platform' wizard. The title is 'Enable Google Maps Platform'. Below the title, there is a section titled 'Steps to get started' with a list of three steps: '1. Pick a product', '2. Select a project', and '3. Set up your billing'. Below the list, there is a text input field with the placeholder text 'Enter new project name' and the text 'PMLB SE' entered. At the bottom of the wizard, there are three buttons: 'BACK', 'CANCEL', and 'NEXT'.

Enable billing for project “PMLB SE”

You are not an administrator of any billing accounts. To enable billing on this project, create a new billing account or contact your billing account administrator to enable billing for you. [Learn more](#)

CANCEL

CREATE BILLING ACCOUNT



Enable Google Maps Platform

Enable your APIs

This will enable 7 Google Maps Platform API(s) and create an API key for your implementation.

CANCEL

NEXT

The screenshot shows the Google Cloud Platform interface for an API Project. The top navigation bar includes the Google Cloud Platform logo, the project name 'API Project', and a search icon. The left sidebar contains navigation options: Overview, APIs, Metrics, and Support. The main content area is titled 'Overview' and features a warning message: 'You should secure your new API key.' with a 'SECURE CREDENTIALS' link. Below this, a note states 'Figures are for the last 30 days unless otherwise specified'. The 'In use APIs' section displays a table of active APIs with zero requests. The 'Traffic by response code' section shows a line chart with no data points. Other sections include 'Maps support' and 'Billing'.

Google Cloud Platform API Project

Google Maps Overview [LEARN](#)

You should secure your new API key. [SECURE CREDENTIALS](#)

Figures are for the last 30 days unless otherwise specified

API	Requests
Maps Embed API	0
Maps JavaScript API	0
Maps SDK for Android	0
Maps SDK for iOS	0
Maps Static API	0
Street View API	0

[View all APIs \(6\)](#)

Traffic by response code Last 30 days

[View metrics](#)

Maps support

Billing Last 3 months

Unused APIs

Select an API to view details in Marketplace.

API

Directions API

Distance Matrix API

Maps Elevation API

Geocoding API

[Geolocation API](#)

Roads API

Time Zone API

Places SDK for Android

Places SDK for iOS

Places API for Web

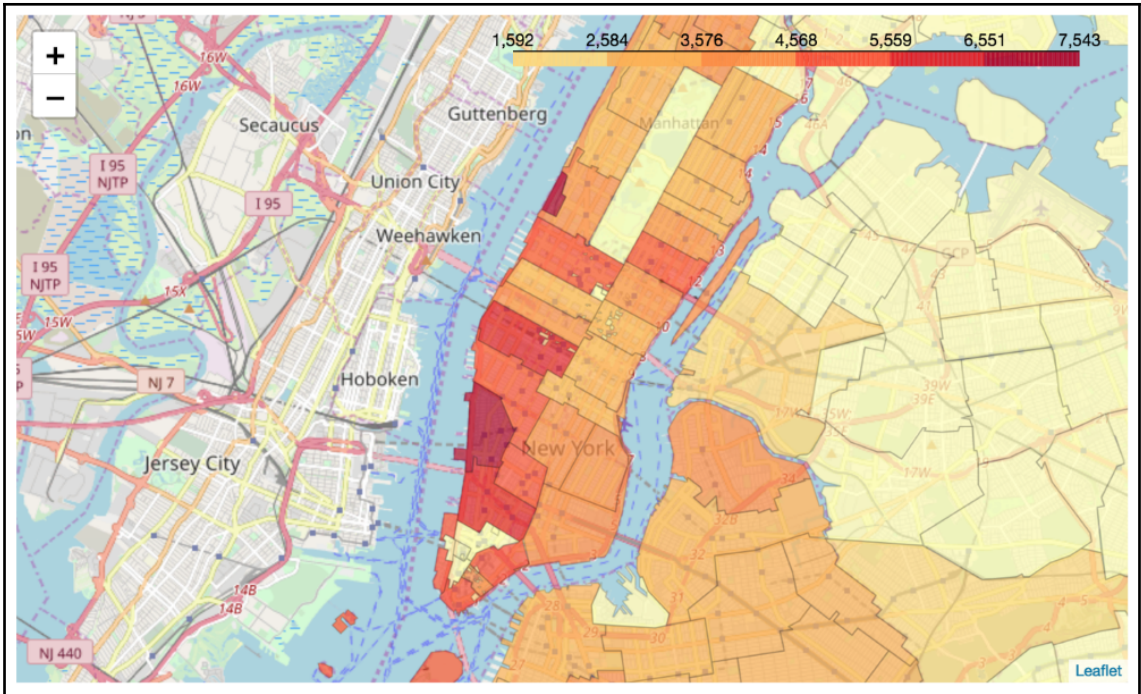
'355 South End Avenue, Apt 4J Manhattan'


```
{'long_name': 'New York County',
  'short_name': 'New York County',
  'types': ['administrative_area_level_2', 'political']},
{'long_name': 'New York',
  'short_name': 'NY',
  'types': ['administrative_area_level_1', 'political']},
{'long_name': 'United States',
  'short_name': 'US',
  'types': ['country', 'political']},
{'long_name': '10280', 'short_name': '10280', 'types': ['postal_code']},
'formatted_address': '355 South End Ave #4J, New York, NY 10280, USA',
'geometry': {'location': {'lat': 40.7109037, 'lng': -74.01662329999999},
  'location_type': 'ROOFTOP',
  'viewport': {'northeast': {'lat': 40.7122526802915,
    'lng': -74.01527431970848},
    'southwest': {'lat': 40.7095547197085, 'lng': -74.01797228029149}}},
'place_id': 'Ei40SiwgMzU1IFNvdXRoIEVudZCBBdmUsIE5ldyBZb3JrLCBOWSAxMDI4MCwgVVNBTh4aHAoWChQKEg
m1M--QGlrciRHPztxnTZeHhICNEo',
'types': ['subpremise']}]}
```

10280

url	555
address	555
neighborhood	555
rent	555
beds	555
baths	555
zip	555
dtype:	int64

	zip	avg_rent
0	10069	7485.000000
1	10030	7347.500000
2	10014	6615.000000
3	10001	6000.000000
4	10013	5825.000000
5	10282	5377.500000
6	10012	5058.500000
7	10065	4956.333333
8	10011	4923.636364
9	10038	4882.611111
10	10280	4852.250000



OLS Regression Results

Dep. Variable:	rent	R-squared:	0.447
Model:	OLS	Adj. R-squared:	0.367
Method:	Least Squares	F-statistic:	5.587
Date:	Sun, 22 Jul 2018	Prob (F-statistic):	3.50e-31
Time:	23:22:57	Log-Likelihood:	-4770.2
No. Observations:	555	AIC:	9682.
Df Residuals:	484	BIC:	9989.
Df Model:	70		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025	0.975]
Intercept	1798.5905	584.816	3.075	0.002	649.499	2947.682
zip[T.07310]	664.0111	739.535	0.898	0.370	-789.084	2117.106
zip[T.10001]	3416.5381	1513.657	2.257	0.024	442.388	6390.688
zip[T.10002]	1125.9781	652.024	1.727	0.085	-155.170	2407.126
zip[T.10003]	1182.1297	664.910	1.778	0.076	-124.337	2488.596

	Intercept	zip[T.07310]	zip[T.10001]	zip[T.10002]	zip[T.10003]	zip[T.10004]	zip[T.10005]	zip[T.10009]	zip[T.10010]
3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
15	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
29	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
30	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Intercept	zip[T.07310]	zip[T.10001]	zip[T.10002]	zip[T.10003]	zip[T.10004]	zip[T.10005]	zip[T.10009]	zip[T.10010]
3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	value
Intercept	0.0
zip[T.07310]	0.0
zip[T.10001]	0.0
zip[T.10002]	0.0
zip[T.10003]	0.0
zip[T.10004]	0.0
zip[T.10005]	0.0
zip[T.10009]	0.0
zip[T.10010]	0.0
zip[T.10011]	0.0
zip[T.10012]	0.0

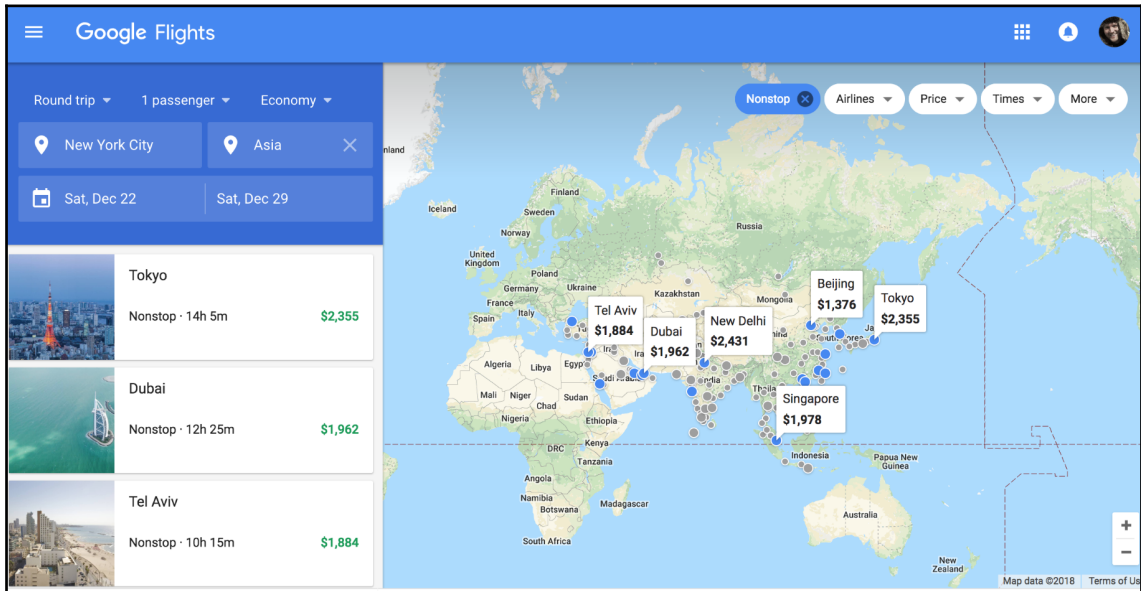
	value
Intercept	1.0
zip[T.07310]	0.0
zip[T.10001]	0.0
zip[T.10002]	0.0
zip[T.10003]	0.0
zip[T.10004]	0.0
zip[T.10005]	0.0
zip[T.10009]	1.0
zip[T.10010]	0.0
zip[T.10011]	0.0
zip[T.10012]	0.0

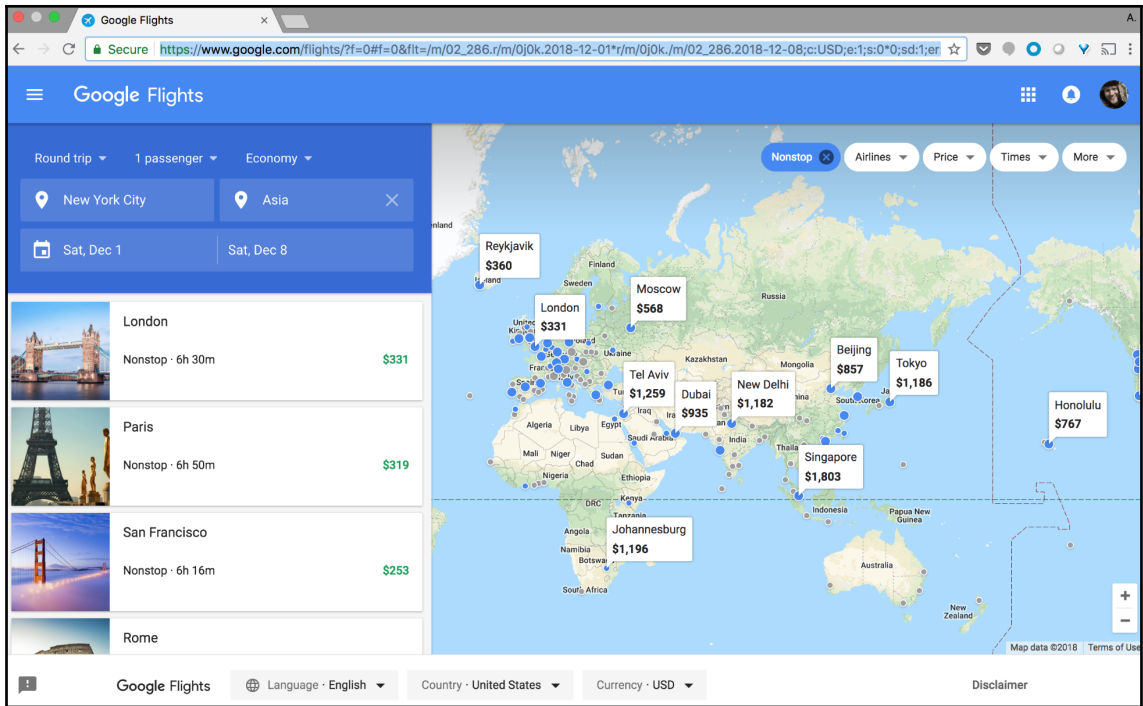
```
value      3203.660719  
dtype: float64
```

```
value      3988.532144  
dtype: float64
```

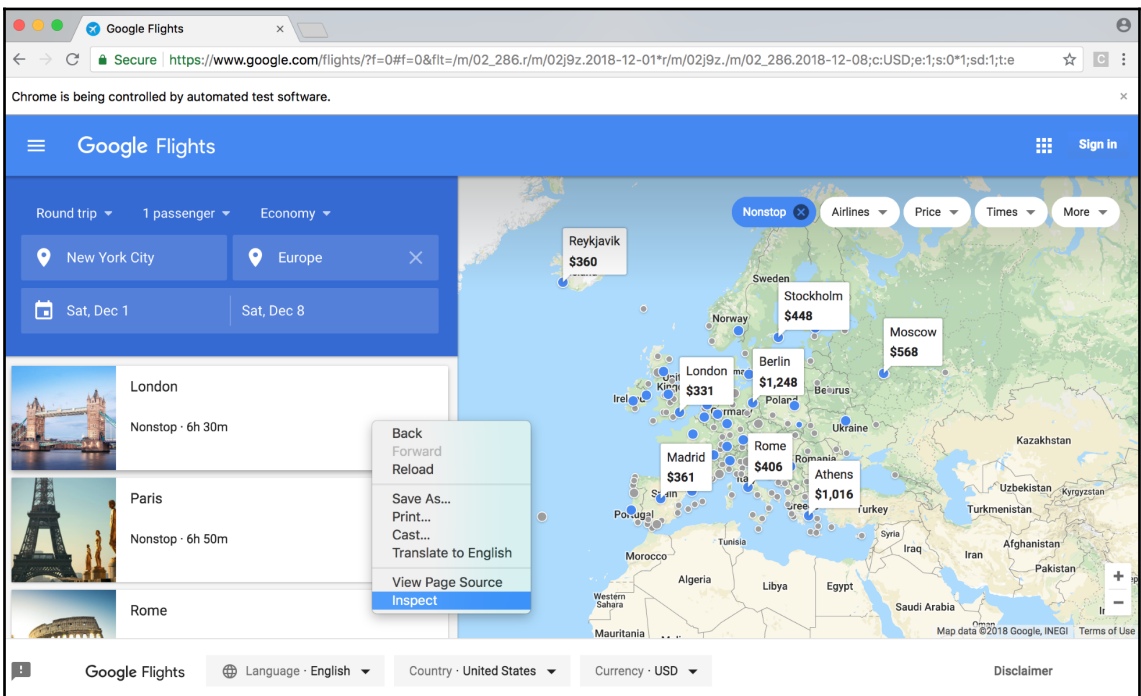
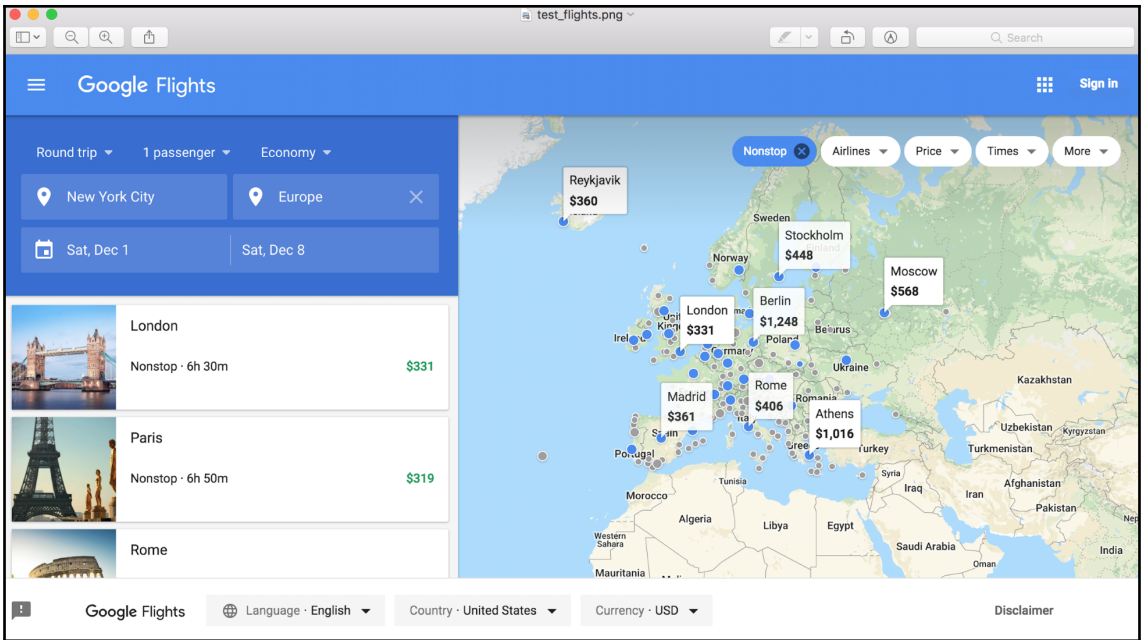
```
value      7485.0  
dtype: float64
```

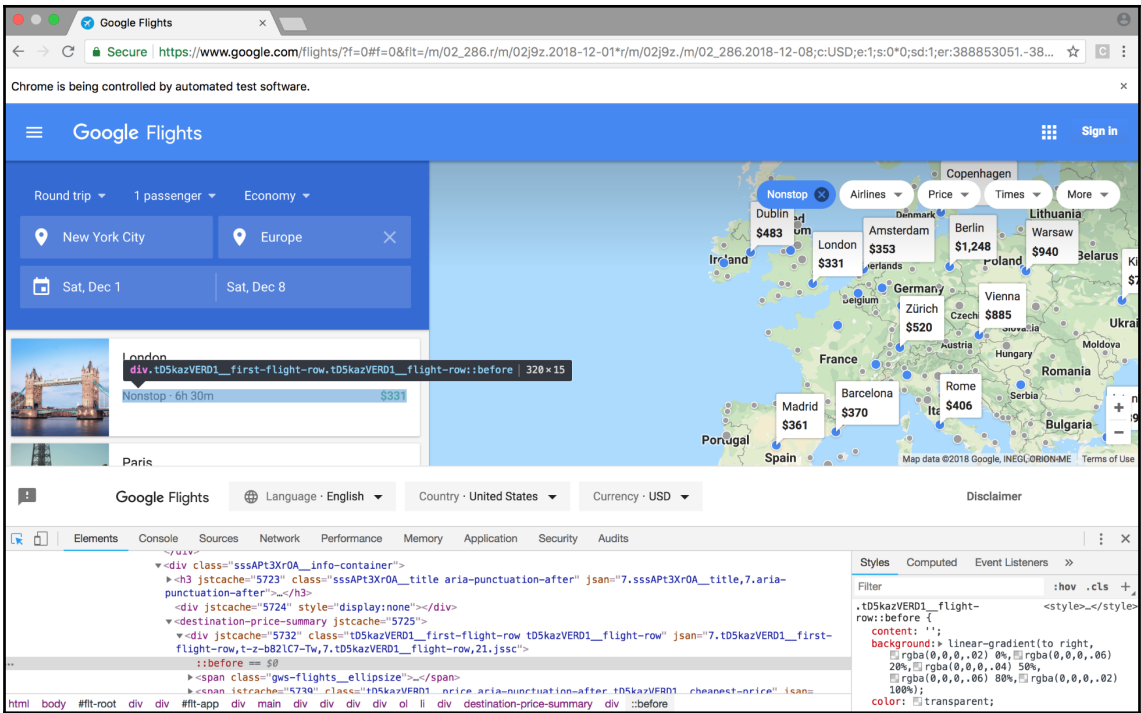
Chapter 3: Build an App to Find Cheap Airfares

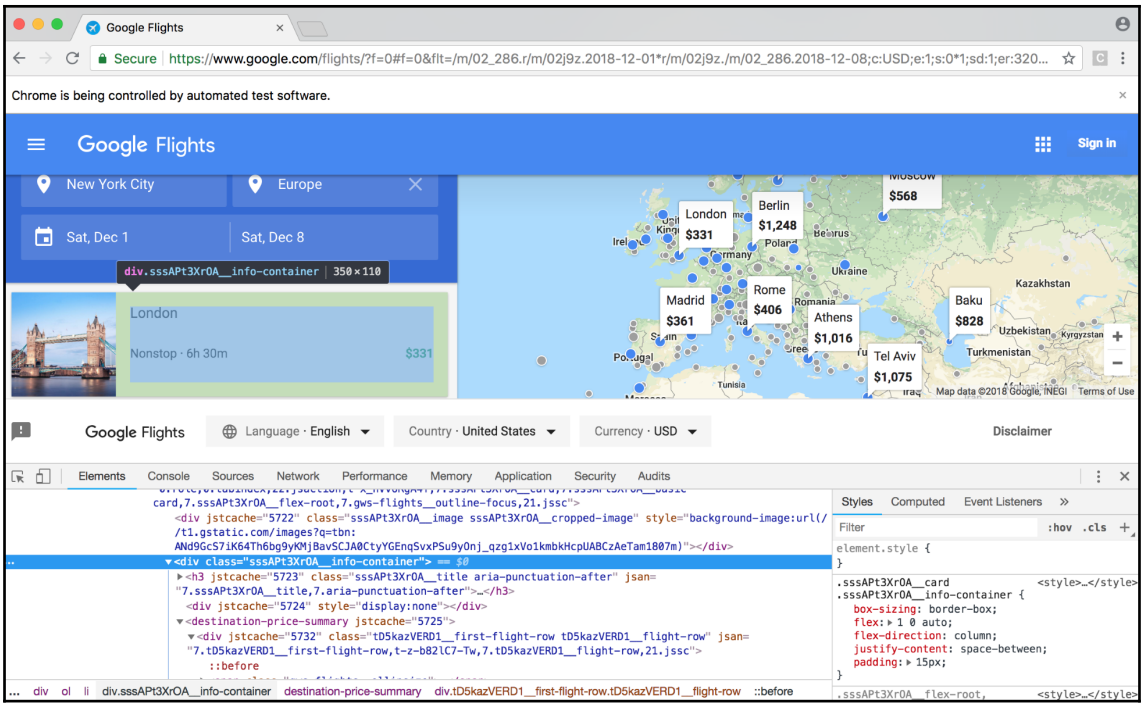




'Google Flights'







```

<div class="sssAPt3XrOA__info-container"><h3 class="sssAPt3XrOA__title aria-punctuation-after"
  r" jsan="7. sssAPt3XrOA__title,7.aria-punctuation-after" jstcache="5723">London</h3><div jstca
che="5724" style="display:none"></div><destination-price-summary jstcache="5725"><div class
="tD5kazVERD1__first-flight-row tD5kazVERD1__flight-row" jsan="7.tD5kazVERD1__first-flight-ro
w,t-z-b821C7-Tw,7.tD5kazVERD1__flight-row,21.jssc" jstcache="5732"><span class="gws-flights
_ellipsize"><span class="aria-punctuation-after" jsan="7.aria-punctuation-after,t-eIHViHXtbak,
21.jssc" jstcache="5736">Nonstop</span><span class="tD5kazVERD1__timing" jsan="7.tD5kazVERD1
__timing,t-9OG0n4dH-E8" jstcache="5737" style=""><span aria-hidden="true"> • </span><span jstc
ache="5745">6h 30m</span></span><span jstcache="5738" style="display:none"></span></span><spa
n class="tD5kazVERD1__price aria-punctuation-after tD5kazVERD1__cheapest-price" jsan="7.tD5ka
zVERD1__price,7.aria-punctuation-after,7.tD5kazVERD1__cheapest-price" jstcache="5739"><jsl js
tcache="5740" style="">$331</jsl><jsl jstcache="5741" style="display:none"></jsl></span></div
><div class="tD5kazVERD1__flight-row" jsan="t-z-b821C7-Tw,7.tD5kazVERD1__flight-row,21.jssc"
jstcache="5733"><span class="gws-flights_ellipsize"><span class="aria-punctuation-after" jsa
n="7.aria-punctuation-after,t-PbACWjlxccY,21.jssc" jstcache="5736">Connecting</span><span jstc
ache="5737" style="display:none"></span><span jstcache="5738" style="display:none"></span></
span><span class="tD5kazVERD1__price aria-punctuation-after" jsan="7.tD5kazVERD1__price,7.ari
a-punctuation-after" jstcache="5739"><jsl jstcache="5740" style="">$440</jsl><jsl jstcache="5
741" style="display:none"></jsl></span></div></destination-price-summary></div>
    
```

London
\$331

Paris
\$319

Rome
\$406

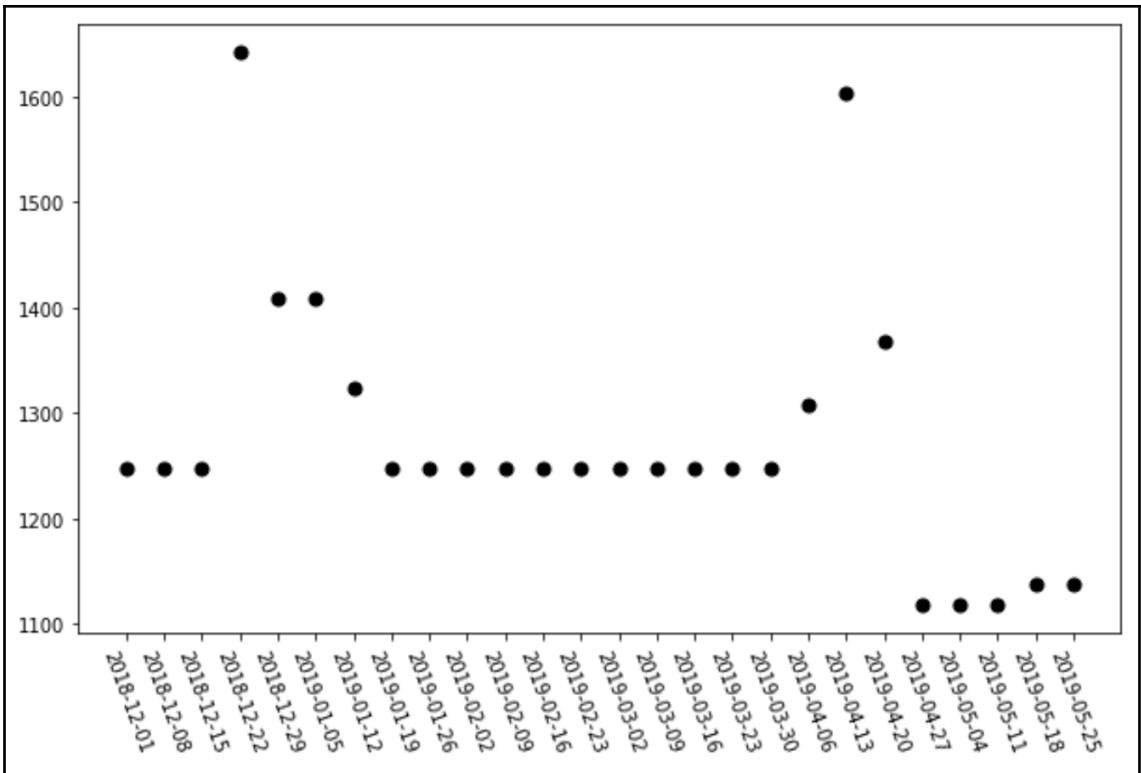
Reykjavik
\$360

Barcelona
\$370

```
{ '2018-12-01': { 'London': '$331',  
  'Paris': '$319',  
  'Rome': '$406',  
  'Reykjavik': '$360',  
  'Barcelona': '$370',  
  'Amsterdam': '$353',  
  'Madrid': '$361',  
  'Dublin': '$483',  
  'Athens': '$1,016',  
  'Milan': '$557',  
  'Lisbon': '$669',  
  'Frankfurt': '$722',  
  'Moscow': '$568',  
  'Berlin': '$1,248',  
  'Istanbul': '$889',  
  'Copenhagen': '$575',  
  'Zürich': '$520',  
  'Munich': '$1,017',  
  'Manchester': '$888',
```

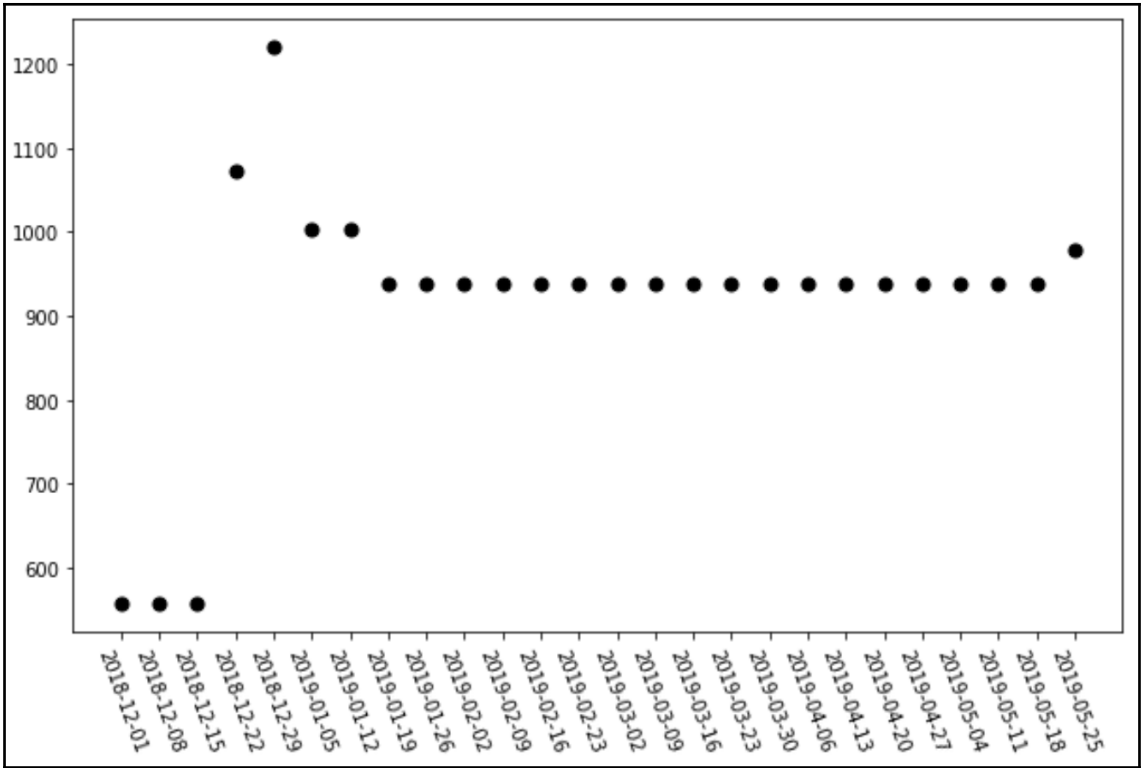
2018-12-01	\$1,248
2018-12-08	\$1,248
2018-12-15	\$1,248
2018-12-22	\$1,643
2018-12-29	\$1,408
2019-01-05	\$1,408
2019-01-12	\$1,323
2019-01-19	\$1,248
2019-01-26	\$1,248
2019-02-02	\$1,248
2019-02-09	\$1,248
2019-02-16	\$1,248
2019-02-23	\$1,248
2019-03-02	\$1,248
2019-03-09	\$1,248
2019-03-16	\$1,248
2019-03-23	\$1,248
2019-03-30	\$1,248
2019-04-06	\$1,308

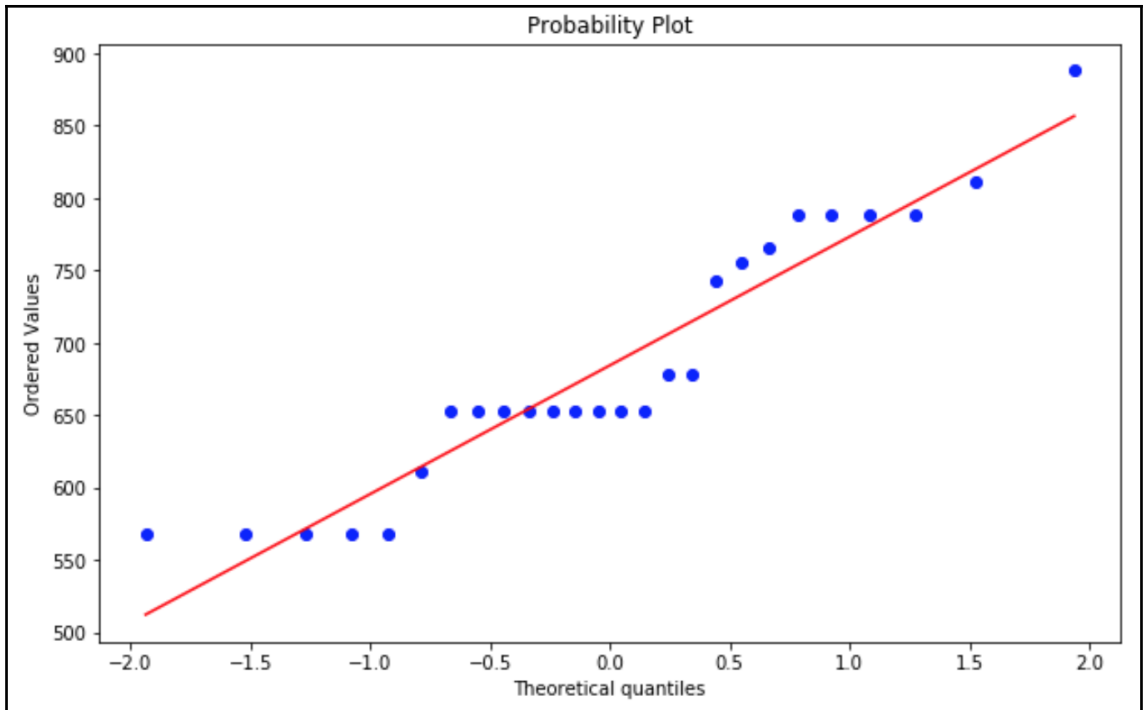
```
{ '2018-12-01' : 1248,  
  '2018-12-08' : 1248,  
  '2018-12-15' : 1248,  
  '2018-12-22' : 1643,  
  '2018-12-29' : 1408,  
  '2019-01-05' : 1408,  
  '2019-01-12' : 1323,  
  '2019-01-19' : 1248,  
  '2019-01-26' : 1248,  
  '2019-02-02' : 1248,  
  '2019-02-09' : 1248,  
  '2019-02-16' : 1248,  
  '2019-02-23' : 1248,  
  '2019-03-02' : 1248,  
  '2019-03-09' : 1248,  
  '2019-03-16' : 1248,  
  '2019-03-23' : 1248,  
  '2019-03-30' : 1248,  
  '2019-04-06' : 1308,
```

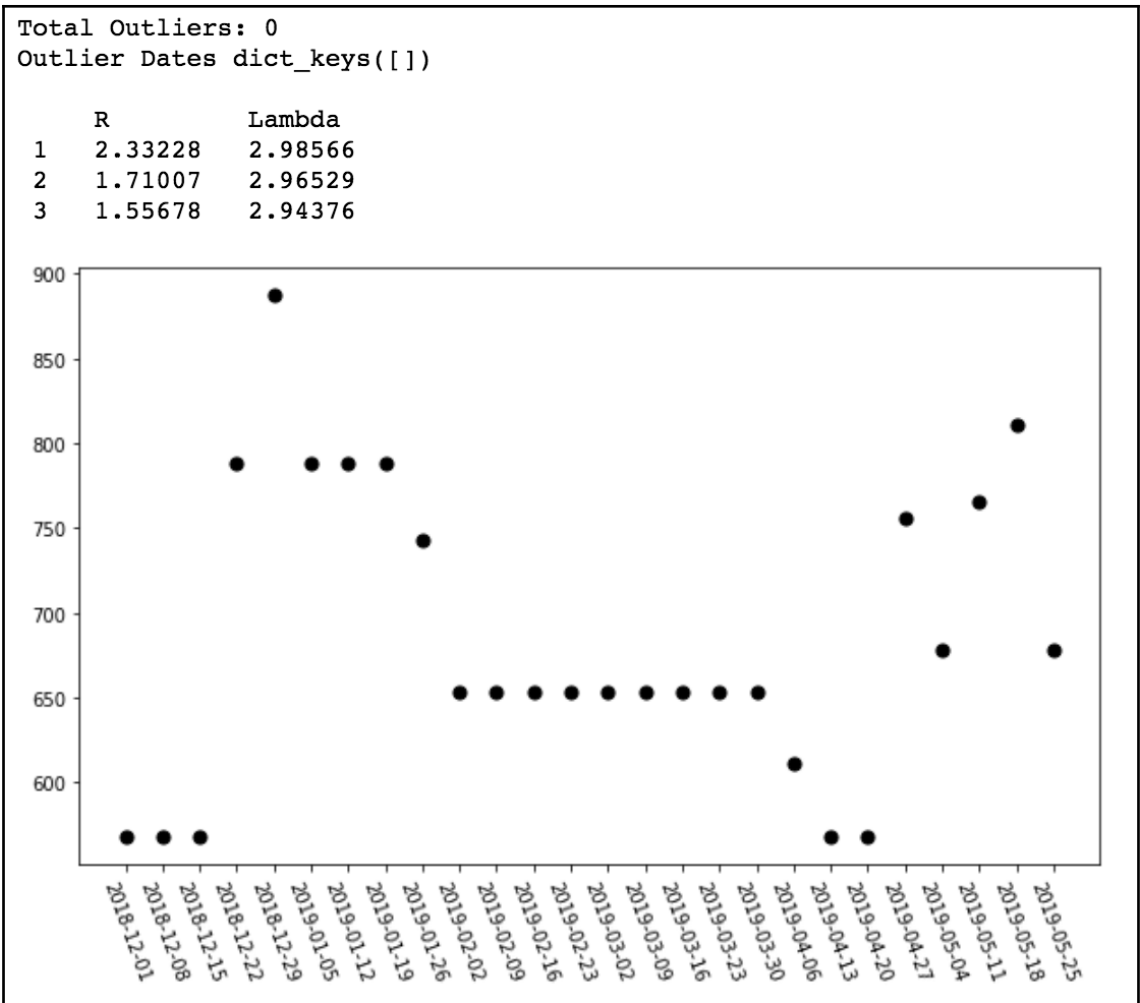



2018-12-01	\$557
2018-12-08	\$557
2018-12-15	\$557
2018-12-22	\$1,072
2018-12-29	\$1,221
2019-01-05	\$1,003
2019-01-12	\$1,003
2019-01-19	\$938
2019-01-26	\$938
2019-02-02	\$938
2019-02-09	\$938
2019-02-16	\$938
2019-02-23	\$938
2019-03-02	\$938
2019-03-09	\$938
2019-03-16	\$938
2019-03-23	\$938
2019-03-30	\$938

```
{ '2018-12-01' : 557,  
  '2018-12-08' : 557,  
  '2018-12-15' : 557,  
  '2018-12-22' : 1072,  
  '2018-12-29' : 1221,  
  '2019-01-05' : 1003,  
  '2019-01-12' : 1003,  
  '2019-01-19' : 938,  
  '2019-01-26' : 938,  
  '2019-02-02' : 938,  
  '2019-02-09' : 938,  
  '2019-02-16' : 938,  
  '2019-02-23' : 938,  
  '2019-03-02' : 938,  
  '2019-03-09' : 938,  
  '2019-03-16' : 938,  
  '2019-03-23' : 938,  
  '2019-03-30' : 938,
```

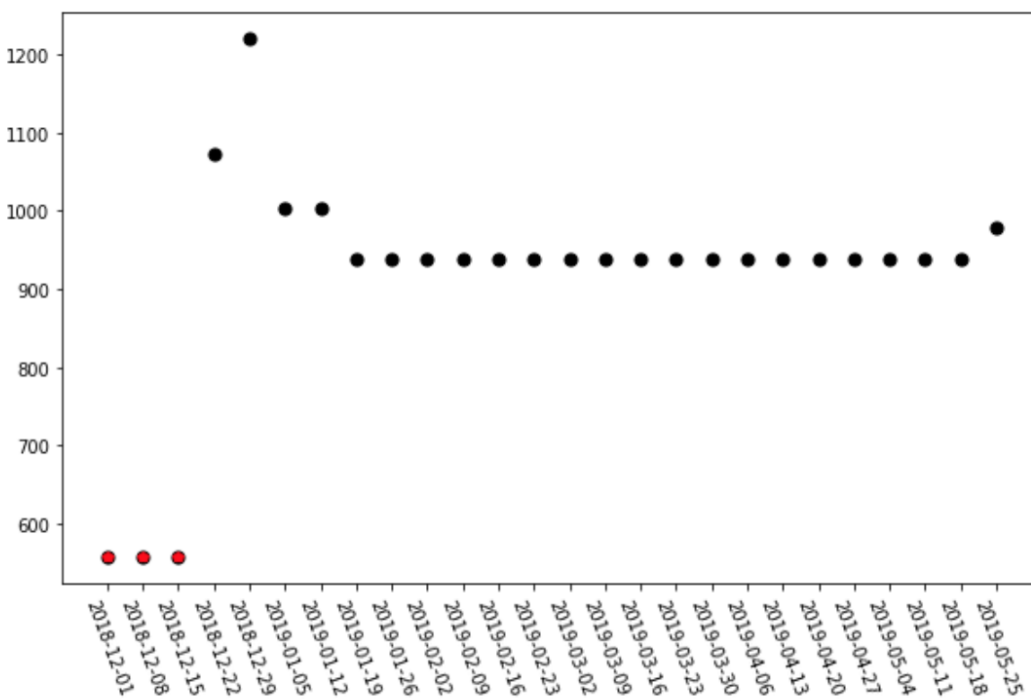


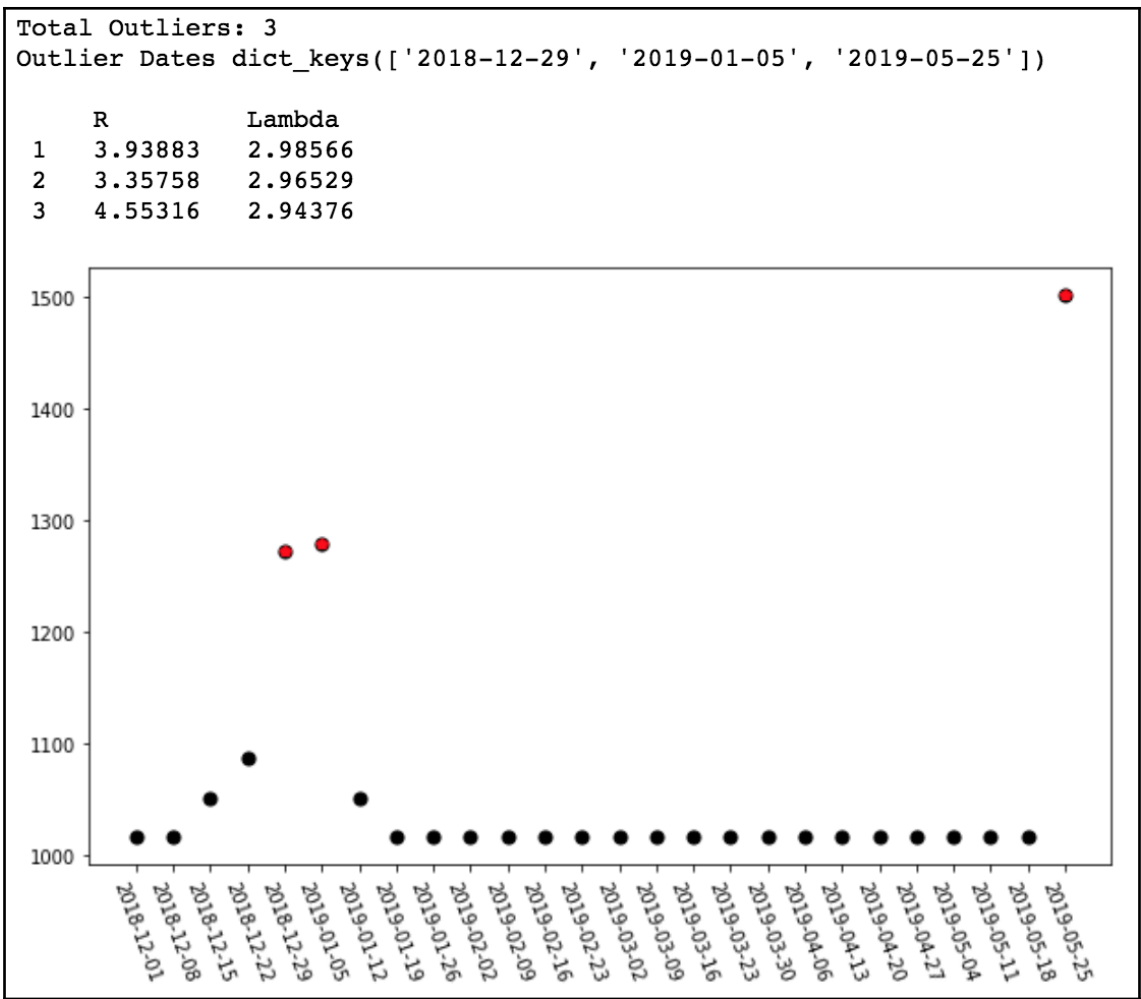




```
Total Outliers: 3
Outlier Dates dict_keys(['2018-12-01', '2018-12-08', '2018-12-15'])
```

	R	Lambda
1	2.51476	2.98566
2	2.96716	2.96529
3	3.80581	2.94376






```
Alert for Milan!  
Fare: $557 on 2018-12-01  
  
Alert for Milan!  
Fare: $557 on 2018-12-08  
  
Alert for Milan!  
Fare: $557 on 2018-12-15
```

The screenshot shows a web interface with two tabs: 'Applets' (active) and 'Services'. Below the tabs is a search bar with a magnifying glass icon and the text 'Filter Applets'. To the right of the search bar is a dark button labeled 'New Applet'.

New Applet

if  **this** **then that**

Want to build your own service? [Build on the platform](#) 



Choose trigger

Step 2 of 6

Receive a web request

This trigger fires every time the Maker service receives a web request to notify it of an event. For information on triggering events, go to your Maker service settings and then the listed URL (web) or tap your username (mobile)



Complete trigger fields

Step 2 of 6

Receive a web request

This trigger fires every time the Maker service receives a web request to notify it of an event. For information on triggering events, go to your Maker service settings and then the listed URL (web) or tap your username (mobile)

Event Name



The name of the event, like "button_pressed" or "front_door_opened"

Create trigger



Choose action service

Step 3 of 6

 SMS	 Android SMS	 ClickSend SMS
---	---	--



Choose action

Step 4 of 6

Send me an SMS

This Action will send an SMS to your mobile phone.



Complete action fields

Step 5 of 6

Send me an SMS


This Action will send an SMS to your mobile phone.

Message

A mistake fare to {{Value1}} for {{Value2}}

Add ingredient


Create action



If Maker Event
"cheap_fares", then Send
me an SMS at 555-1212

62/140

by anonymous

works with 

Receive notifications
when this Applet runs

Finish



Your key is: **MY_SECRET_KEY**

◀ Back to service

To trigger an Event

Make a POST or GET web request to:

```
https://maker.ifttt.com/trigger/cheap_fares/with/key/MY_SECRET_KEY
```

With an optional JSON body of:

```
{ "value1" : "Milan", "value2" : "$500", "value3" : " " }
```

The data is completely optional, and you can also pass value1, value2, and value3 as query parameters or form variables. This content will be passed on to the Action in your Recipe.

Chapter 4: Forecast the IPO Market Using Logistic Regression

3286

```

206 [empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
207 [empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
216 [empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
217 [empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
218 [text:'Trade', empty:'', empty:'', text:'Lead/Joint-Lead', text:'Offer', text:'Opening', text:'1st Day', text:'1st Day', text:'$ Change', text:'$ Change', text:'Star', empty:'']
219 [text:'Date', text:'Issuer', text:'Symbol', text:'Managers', text:'Price', text:'Price', text:'Close', text:'% P x Chng', text:'Opening', text:'Close', text:'Ratings', text:'Performed']
220 [empty:'', number:2017.0, empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
402 [empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
403 [empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'', empty:'']
    
```

3156

	0	1	2	3	4	5	6	7	8	9	10	11
0	43110.0	Nebula Acquisition	NEBUU	Deutsche Bank Securities/ Goldman Sachs	10.0	10.03	10.02	0.002	0.03	0.02	1	
1	43112.0	Industrial Logistics Properties Trust	ILPT	UBS Investment Bank/ Citigroup/ RBC Capital Ma...	24.0	23.70	23.35	-0.0270833	-0.30	-0.65	1	
2	43112.0	Liberty Oilfield Services	LBRT	Morgan Stanley/ Goldman, Sachs/ Wells Fargo Se...	17.0	21.20	21.75	0.279412	4.20	4.75	2	
3	43112.0	Platinum Eagle Acquisition	EAGLU	Deutsche Bank Securities/ BofA Merrill Lynch	10.0	10.06	10.01	0.001	0.06	0.01	1	
4	43124.0	PagSeguro Digital Ltd.	PAGS	Goldman Sachs/ Morgan Stanley	21.5	28.20	29.20	0.35814	6.70	7.70	3	

Date	Company	Ticker	Managers	Offer Price	Opening Price	1st Day Close	1st Day % Chg	\$ Chg Open	\$ Chg Close	Star Rating	Performed
0 43110.0	Nebula Acquisition	NEBUU	Deutsche Bank Securities/ Goldman Sachs	10.0	10.03	10.02	0.002	0.03	0.02	1	
1 43112.0	Industrial Logistics Properties Trust	ILPT	UBS Investment Bank/ Citigroup/ RBC Capital Ma...	24.0	23.70	23.35	-0.0270833	-0.30	-0.65	1	
2 43112.0	Liberty Oilfield Services	LBRT	Morgan Stanley/ Goldman, Sachs/ Wells Fargo Se...	17.0	21.20	21.75	0.279412	4.20	4.75	2	
3 43112.0	Platinum Eagle Acquisition	EAGLU	Deutsche Bank Securities/ BofA Merrill Lynch	10.0	10.06	10.01	0.001	0.06	0.01	1	
4 43124.0	PagSeguro Digital Ltd.	PAGS	Goldman Sachs/ Morgan Stanley	21.5	28.20	29.20	0.35814	6.70	7.70	3	
5 43125.0	Eyenovia	EYEN	Ladenburg Thalmann/ Roth Capital Partners	10.0	10.00	9.92	-0.008	0.00	-0.08	1	
6 43125.0	Gates Industrial Corporation plc	GTES	Citigroup/ Morgan Stanley/ UBS Investment Bank	19.0	19.05	18.50	-0.0263158	0.05	-0.50	1	

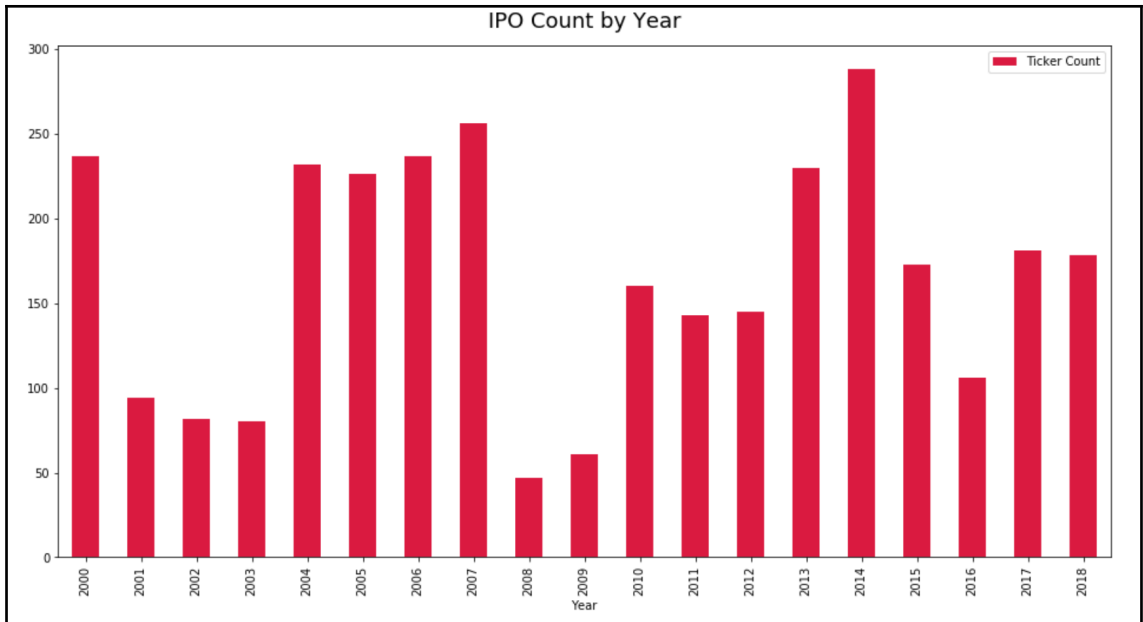
Date	Company	Ticker	Managers	Offer Price	Opening Price	1st Day Close	1st Day % Chg	\$ Chg Open	\$ Chg Close	Star Rating	Performed
0 43110.0	Nebula Acquisition	NEBUU	Deutsche Bank Securities/ Goldman Sachs	10.0	10.03	10.02	0.002	0.03	0.02	1	
1 43112.0	Industrial Logistics Properties Trust	ILPT	UBS Investment Bank/ Citigroup/ RBC Capital Ma...	24.0	23.70	23.35	-0.0270833	-0.30	-0.65	1	
2 43112.0	Liberty Oilfield Services	LBRT	Morgan Stanley/ Goldman, Sachs/ Wells Fargo Se...	17.0	21.20	21.75	0.279412	4.20	4.75	2	
3 43112.0	Platinum Eagle Acquisition	EAGLU	Deutsche Bank Securities/ BofA Merrill Lynch	10.0	10.06	10.01	0.001	0.06	0.01	1	
4 43124.0	PagSeguro Digital Ltd.	PAGS	Goldman Sachs/ Morgan Stanley	21.5	28.20	29.20	0.35814	6.70	7.70	3	
5 43125.0	Eyenovia	EYEN	Ladenburg Thalmann/ Roth Capital Partners	10.0	10.00	9.92	-0.008	0.00	-0.08	1	
6 43125.0	Gates Industrial Corporation plc	GTES	Citigroup/ Morgan Stanley/ UBS Investment Bank	19.0	19.05	18.50	-0.0263158	0.05	-0.50	1	

Date	Company	Ticker	Managers	Offer Price	Opening Price	1st Day Close	1st Day % Chg	\$ Chg Open	\$ Chg Close	Star Rating	Performed	Year	Month	Day
0 2018-01-10	Nebula Acquisition	NEBUU	Deutsche Bank Securities/ Goldman Sachs	10.0000	10.030000	10.020000	0.002	0.030000	0.020000	1		2018	1	10
1 2018-01-12	Industrial Logistics Properties Trust	ILPT	UBS Investment Bank/ Citigroup/ RBC Capital Ma...	24.0000	23.700000	23.350000	-0.0270833	-0.300000	-0.650000	1		2018	1	12
2 2018-01-12	Liberty Oilfield Services	LBRT	Morgan Stanley/ Goldman, Sachs/ Wells Fargo Se...	17.0000	21.200000	21.750000	0.279412	4.200000	4.750000	2		2018	1	12
3 2018-01-12	Platinum Eagle Acquisition	EAGLU	Deutsche Bank Securities/ BofA Merrill Lynch	10.0000	10.060000	10.010000	0.001	0.060000	0.010000	1		2018	1	12
4 2018-01-24	PagSeguro Digital Ltd.	PAGS	Goldman Sachs/ Morgan Stanley	21.5000	28.200000	29.200000	0.35814	6.700000	7.700000	3		2018	1	24
5 2018-01-25	Eyenovia	EYEN	Ladenburg Thalmann/ Roth Capital Partners	10.0000	10.000000	9.920000	-0.008	0.000000	-0.080000	1		2018	1	25

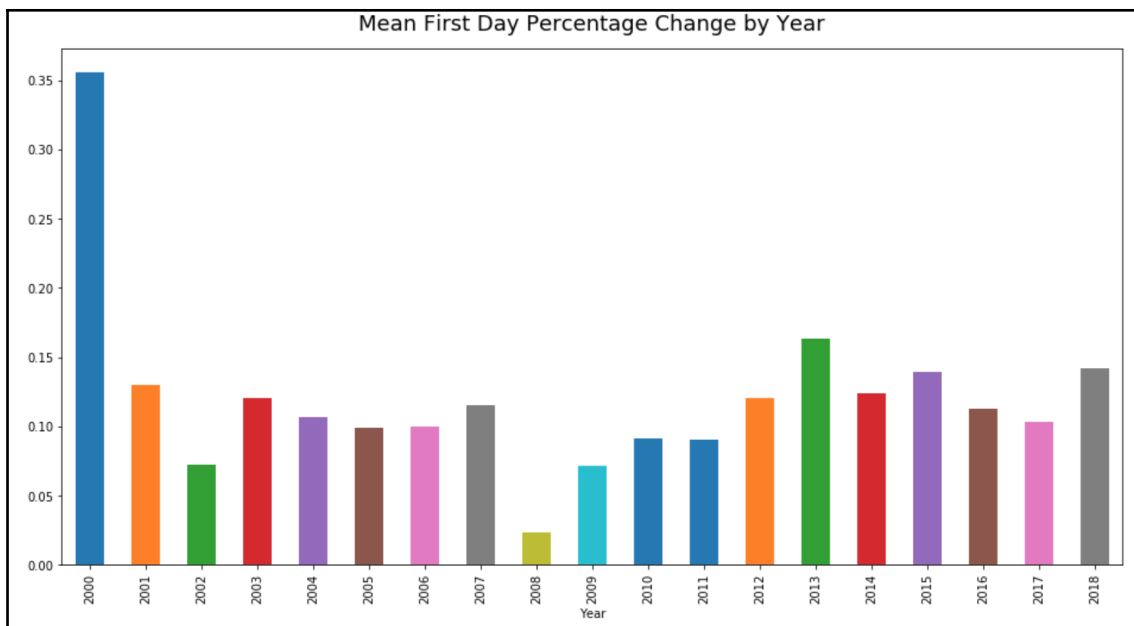
Ticker	
Year	
2000	237
2001	94
2002	82
2003	80
2004	232
2005	226
2006	237
2007	256
2008	47
2009	61
2010	160
2011	143
2012	145
2013	230
2014	288
2015	173
2016	106
2017	181
2018	178

Date	datetime64[ns]
Company	object
Ticker	object
Managers	object
Offer Price	float64
Opening Price	float64
1st Day Close	float64
1st Day % Chg	object
\$ Chg Open	float64
\$ Chg Close	float64
Star Rating	object
Performed	object
Year	int64
Month	int64
Day	int64
Day of Week	int64
dtype:	object

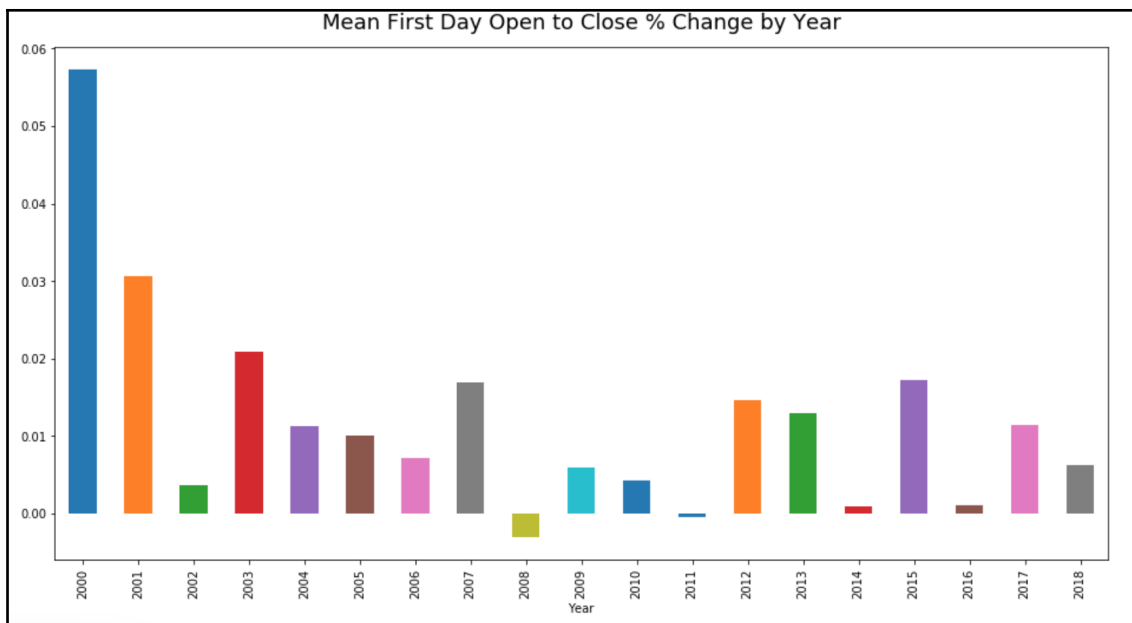
Date	datetime64[ns]
Company	object
Ticker	object
Managers	object
Offer Price	float64
Opening Price	float64
1st Day Close	float64
1st Day % Chg	float64
\$ Chg Open	float64
\$ Chg Close	float64
Star Rating	object
Performed	object
Year	int64
Month	int64
Day	int64
Day of Week	int64
1st Day Open to Close % Chg	float64
1st Day Open to Close \$ Chg	float64
Opening Gap % Chg	float64
Opening Gap \$ Chg	float64
Mgr Count	int64
Lead Mgr	object
dtype:	object



	count	mean	std	min	25%	50%	75%	max
Year								
2000	237.0	0.355621	0.557065	-0.269231	0.004464	0.162500	0.470052	2.775000
2001	93.0	0.130180	0.160606	-0.140625	0.011538	0.088542	0.229167	0.766667
2002	82.0	0.072315	0.141903	-0.330769	0.000000	0.045959	0.135866	0.666667
2003	79.0	0.120958	0.164613	-0.155455	0.002857	0.074286	0.230264	0.885556
2004	232.0	0.107032	0.165621	-0.142500	0.000000	0.051756	0.168558	1.036364
2005	226.0	0.099110	0.274405	-0.164000	0.000000	0.025357	0.143803	3.538519
2006	236.0	0.099694	0.176282	-0.295455	0.000000	0.041652	0.150852	1.254068
2007	256.0	0.115215	0.206049	-0.269091	0.000000	0.033571	0.179853	0.972222
2008	47.0	0.023182	0.134953	-0.199200	-0.034857	0.000000	0.028873	0.575000
2009	61.0	0.071752	0.155818	-0.167500	-0.017600	0.009000	0.131579	0.594500
2010	153.0	0.091201	0.215307	-0.260769	-0.016667	0.023529	0.136667	1.109375
2011	141.0	0.090664	0.218208	-0.215000	-0.006842	0.009167	0.152857	1.344828
2012	143.0	0.120579	0.215977	-0.187500	0.000000	0.053077	0.177124	1.087059
2013	229.0	0.163482	0.277182	-0.352222	0.000000	0.068718	0.245238	1.228333
2014	287.0	0.123636	0.269714	-0.348800	-0.007611	0.042857	0.191127	2.066667
2015	173.0	0.139472	0.299854	-0.274000	0.000000	0.048333	0.205714	1.855556
2016	104.0	0.113253	0.234423	-0.200000	-0.001013	0.038357	0.205474	1.312500
2017	180.0	0.103135	0.203852	-0.410833	0.000000	0.045000	0.159318	1.114000
2018	173.0	0.141809	0.254372	-0.289333	0.000000	0.016000	0.300000	1.281429

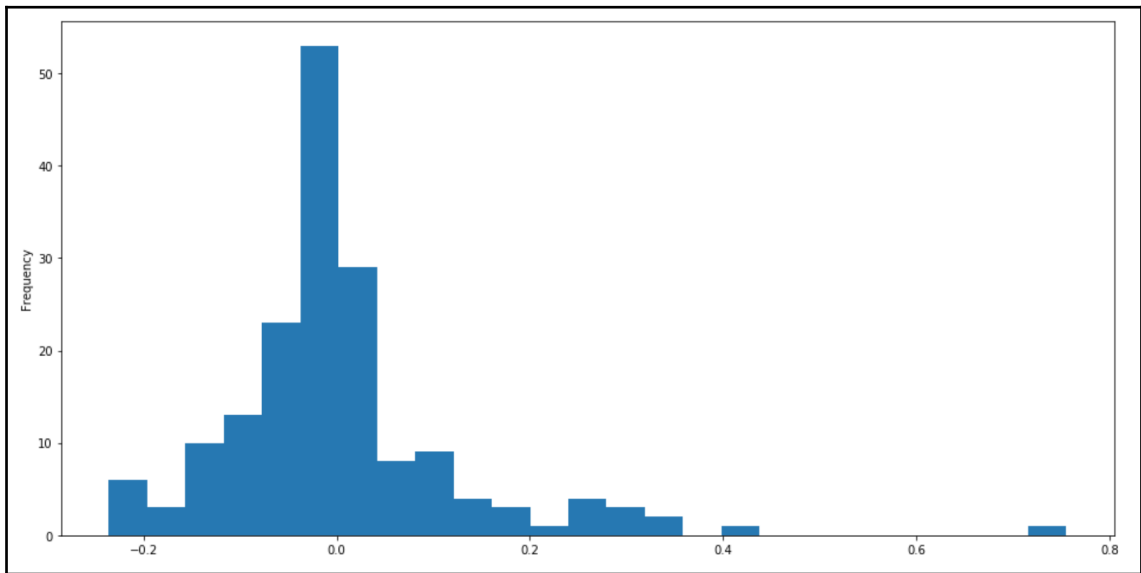


```
count      3132.000000
mean        0.013276
std         0.108117
min         -0.492812
25%         -0.028939
50%         0.000000
75%         0.040000
max         1.594175
Name: 1st Day Open to Close % Chg, dtype: float64
```

Offer Price	2493.885000
Opening Price	2888.300000
1st Day Close	2916.510000
1st Day % Chg	24.532930
\$ Chg Open	394.415000
\$ Chg Close	436.125000
Year	349114.000000
Month	945.000000
Day	3257.000000
Day of Week	508.000000
1st Day Open to Close % Chg	1.080821
1st Day Open to Close \$ Chg	28.210000
Opening Gap % Chg	23.266162
Opening Gap \$ Chg	394.415000
Mgr Count	457.000000
dtype: float64	

```
count    173.000000
mean     0.163064
std      2.244747
min      -6.260000
25%     -0.840000
50%      0.000000
75%      0.500000
max       9.940000
Name: 1st Day Open to Close $ Chg, dtype: float64
```

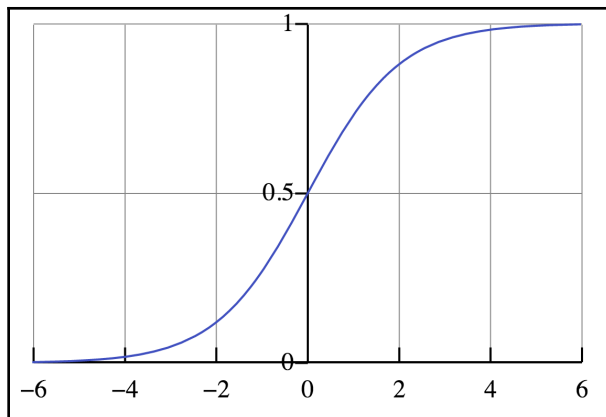


1st Day Open to Close % Chg	
Mgr Count	
1	0.0156791
2	0.0120258
3	0.0119439
4	0.0180178
5	0.00905128
6	-0.00154993
7	0.00185223
8	0.00378158
9	0.0812138
10	-0.0205085
11	0.00705882
12	-0.00881057
13	-0.0099891

```
array(['Deutsche Bank Securities', 'UBS Investment Bank',
'Morgan Stanley', 'Goldman Sachs', 'Ladenburg Thalmann',
'Citigroup', 'B. Riley FBR', 'Jefferies', 'Credit Suisse',
'BofA Merrill Lynch', 'J.P. Morgan', 'EarlyBirdCapital',
'Roth Capital Partners', 'Oppenheimer & Co.', '\u200bJefferies',
'Cantor', 'Piper Jaffray', 'Barclays',
"Sandler O'Neill & Partners", 'Goldman Sachs (Asia)',
'Network 1 Financial Securities', 'Oppenheimer', 'Raymond James',
'Stifel', 'Wells Fargo Securities', 'Baird', 'Stephens', 'Cowen',
'Benchmark', 'Leerink Partners', 'Chardan', 'Evercore ISI',
'Maxim Group ', '\u200bCredit Suisse',
'Keefe, Bruyette & Woods (A Stifel Company)', 'Cowen and Company',
'BMO Capital Markets', 'Joseph Gunnar & Co.', 'CICC',
'Maxim Group', "Sandler O'Neill + Partners",
'Cantor Fitzgerald & Co.', 'Joseph Gunnar',
'Rodman & Renshaw (a Unit of H.C. Wainwright & Co.)',
'CIBC Capital Markets', 'Goldman, Sachs', 'UBS Securities',
```

$$t = \beta_0 + \beta_1 x$$

$$\sigma(t) = \frac{e^t}{e^t + 1} = \frac{1}{1 + e^{-t}}$$



$$p(x) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x)}}$$

Student	Favorite class	Dummy variables		
		Science	Math	Language
1	Science	1	0	0
2	Science	1	0	0
3	Language	0	0	1
4	Math	0	1	0
5	Language	0	0	1
6	Math	0	1	0

Intercept	C(Q('Month'), Treatment) [T.2]	C(Q('Month'), Treatment) [T.3]	C(Q('Month'), Treatment) [T.4]	C(Q('Month'), Treatment) [T.5]	C(Q('Month'), Treatment) [T.6]	C(Q('Month'), Treatment) [T.7]	C(Q('Month'), Treatment) [T.8]	C(Q('Month'), Treatment) [T.9]	C(Q('Month'), Treatment) [T.10]	...
0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...
10	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ...

	y_true	y_hat	correct
2932	1	1	1
2933	0	0	1
2934	0	0	1
2935	0	0	1
2936	0	0	1
2937	1	1	1
2938	1	0	0
2939	0	0	1
2940	1	0	0
2941	0	1	0
2942	0	1	0

```
1    0.51
0    0.49
Name: y_true, dtype: float64
```

```
1    0.51
0    0.49
Name: correct, dtype: float64
```

	1st Day Open to Close \$ Chg	y_true	y_hat	correct
2932	9.125000	1	1	1
2933	-15.875000	0	0	1
2934	-1.343750	0	0	1
2935	-2.062500	0	0	1
2936	-1.234375	0	0	1
2937	20.609375	1	1	1
2938	2.375000	1	0	0
2939	-3.187500	0	0	1
2940	0.875000	1	0	0
2941	0.000000	0	1	0
2942	-2.000000	0	1	0

215.71875

```
count    200.000000
mean      1.078594
std       4.136920
min      -15.875000
25%      -0.578125
50%       0.312500
75%      1.902344
max      20.609375
Name: 1st Day Open to Close $ Chg, dtype: float64
```

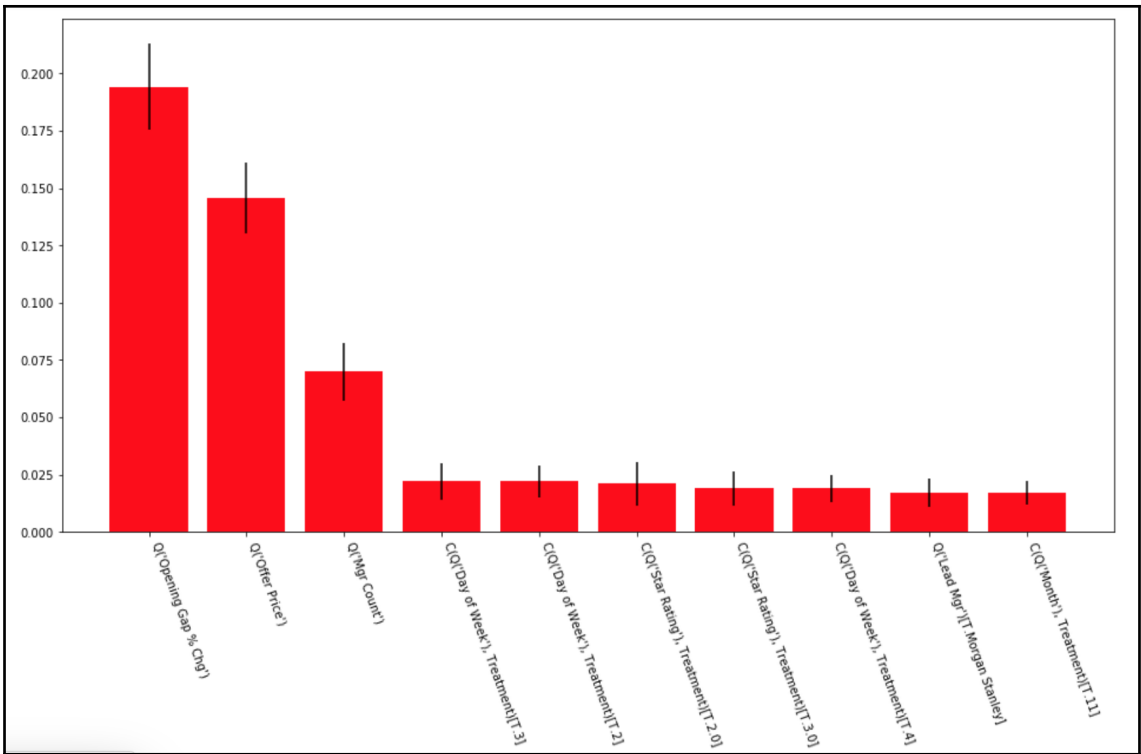
51.109375

```

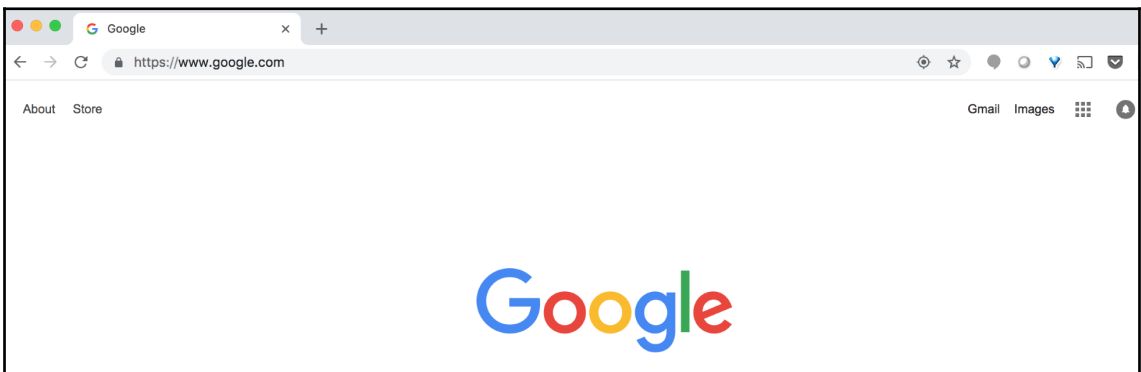
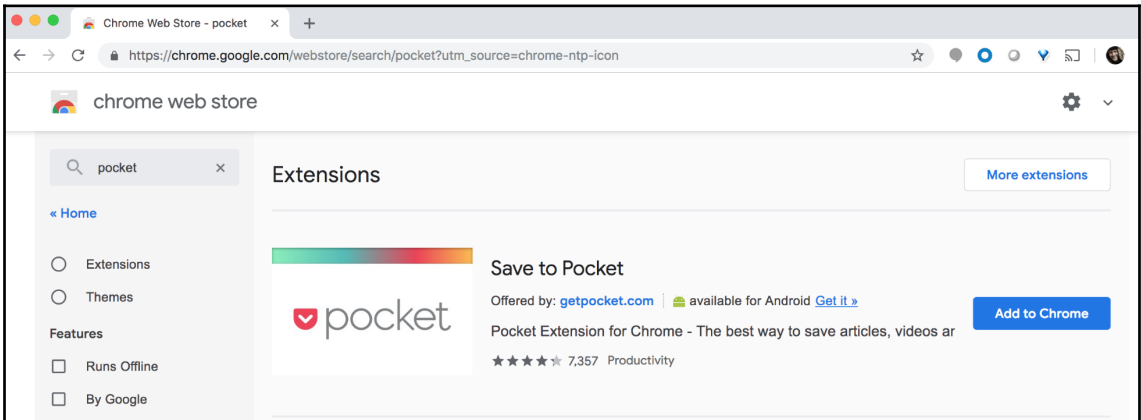
count    34.000000
mean     1.503217
std      6.563061
min      -9.875000
25%     -1.968750
50%      0.507812
75%      4.542969
max      20.609375
Name: 1st Day Open to Close $ Chg, dtype: float64
    
```

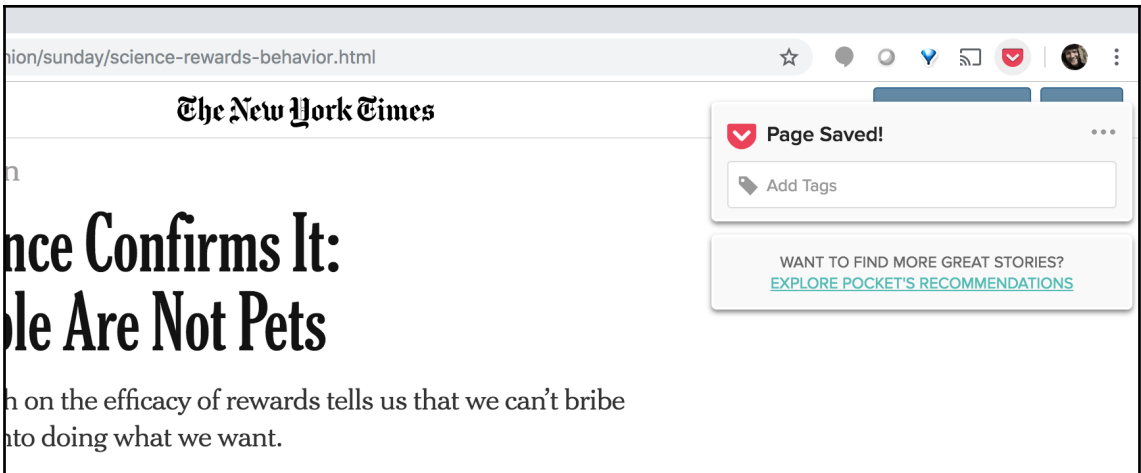
	Coef	Feature
0	1.480088	Q('Lead Mgr')[T.BMO Capital Markets]
1	1.296002	Q('Lead Mgr')[T.C.E. Unterberg, Towbin]
2	1.124586	Q('Lead Mgr')[T. J.P. Morgan]
3	1.042390	Q('Lead Mgr')[T.Joseph Gunnar]
4	0.980193	Q('Opening Gap % Chg')
5	0.967776	Q('Lead Mgr')[T.EarlyBridCapital]
6	0.907780	Q('Lead Mgr')[T.Deutsche Banc Alex Brown]
7	0.882732	Q('Lead Mgr')[T.Keefe, Bruyette & Woods]
8	0.880075	Q('Lead Mgr')[T.Sandler O'Neill & Partners]
9	0.848933	Q('Lead Mgr')[T.Deutsche Banc Alex. Brown]
10	0.848185	Q('Lead Mgr')[T.US Bancorp Piper Jaffray]

	Coef	Feature
12	-0.082384	C(Q('Day of Week'), Treatment)[T.1]
13	0.053059	C(Q('Day of Week'), Treatment)[T.2]
14	0.187880	C(Q('Day of Week'), Treatment)[T.3]
15	0.080080	C(Q('Day of Week'), Treatment)[T.4]
16	-0.200857	C(Q('Day of Week'), Treatment)[T.5]



Chapter 5: Create a Custom Newsfeed





APPS
My Apps
Create a New App

DOCUMENTATION
Overview
Add
Modify
Retrieve
Authentication
Objective-C SDK
Article View API
Preferences API

GETTING STARTED
iOS/Mac
Android
Windows 8
Web
Other Mobile
Adding URLs
Existing Developers

ADDITIONAL INFO
Rate Limits
Error Handling
Migrating Accounts to OAuth
Application Naming
Terms of Service
Security
Developer FAQ
Developer Support

Create an Application

Application Name:
This is the name of your application that will be displayed to users. 80 character max.

Application Description:
This is the description of your application that will be displayed to users. 120 character max.

Permissions:
Please select one or more permissions for your application below.
Important: You cannot change permissions once they are set without generating a new set of keys.

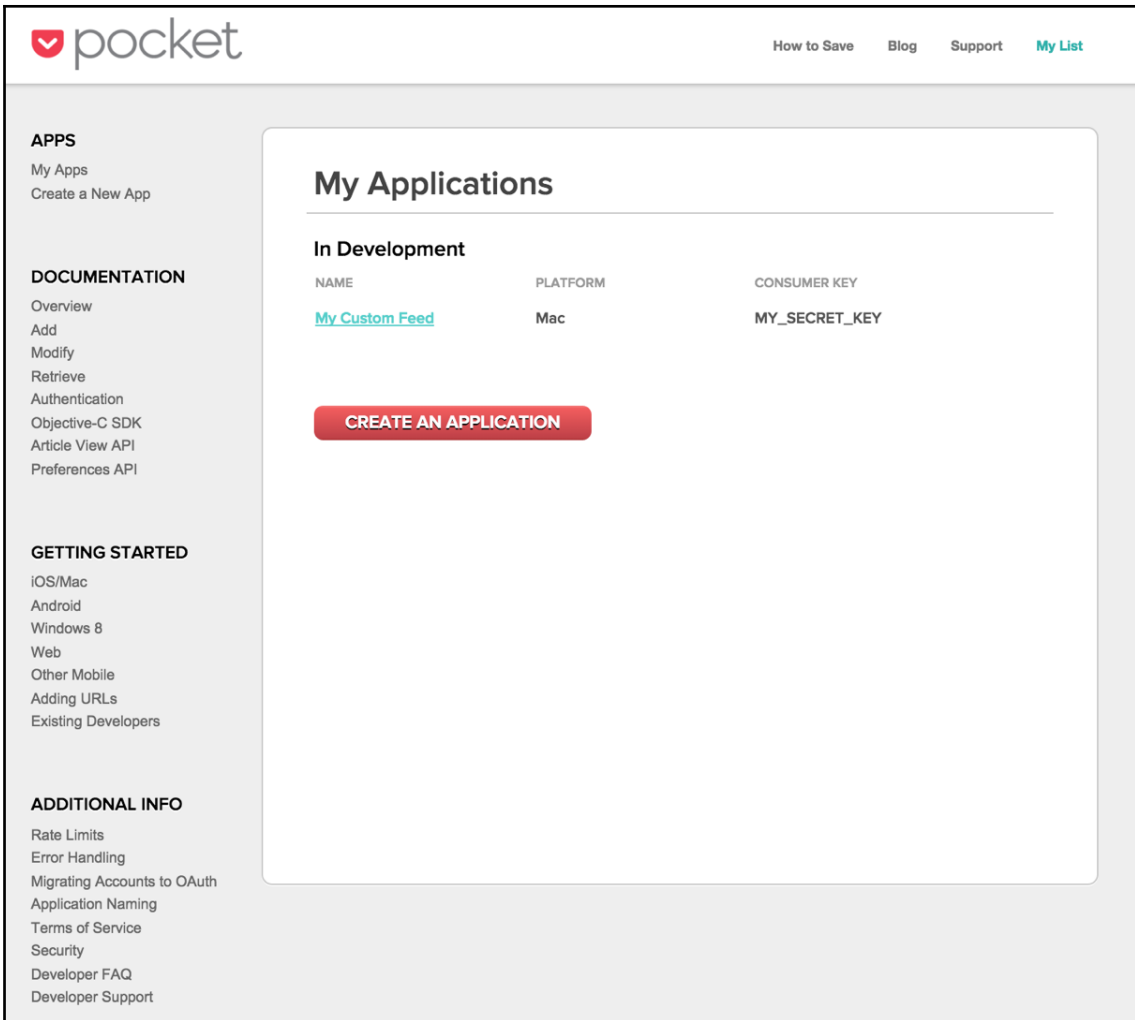
- Add:** Add items to a user's list.
- Modify:** Modify items in a user's list.
- Retrieve:** Retrieve items from a user's list.

Platforms:
We'll generate keys for the platforms you select below. You must select at least one platform to get started and you can always add or remove platforms later.

- iPhone
- iPad
- Mac
- Android - Mobile
- Android - Tablet
- Extension
- Windows - Mobile
- Windows - Desktop
- Web
- Mobile (other)
- Desktop (other)

I accept the [Terms of Service](#).

CREATE APPLICATION



The screenshot shows the 'My Applications' page on the Pocket developer portal. The page has a sidebar on the left with navigation links under three categories: APPS, DOCUMENTATION, and GETTING STARTED. The main content area is titled 'My Applications' and features a table under the heading 'In Development'. The table has three columns: NAME, PLATFORM, and CONSUMER KEY. One application is listed with the name 'My Custom Feed', platform 'Mac', and consumer key 'MY_SECRET_KEY'. Below the table is a red button labeled 'CREATE AN APPLICATION'.

APPs
My Apps
Create a New App

DOCUMENTATION
Overview
Add
Modify
Retrieve
Authentication
Objective-C SDK
Article View API
Preferences API

GETTING STARTED
iOS/Mac
Android
Windows 8
Web
Other Mobile
Adding URLs
Existing Developers

ADDITIONAL INFO
Rate Limits
Error Handling
Migrating Accounts to OAuth
Application Naming
Terms of Service
Security
Developer FAQ
Developer Support

My Applications

In Development

NAME	PLATFORM	CONSUMER KEY
My Custom Feed	Mac	MY_SECRET_KEY

[CREATE AN APPLICATION](#)

```
'code=some_long_access_code'
```

```
'access_token=some_long_access_token&username=some_user@some_domain.com'
```

```
{
  "status": 1,
  "complete": 1,
  "list": {
    "1167823383": {
      "item_id": "1167823383",
      "resolved_id": "1167823383",
      "given_url": "http://www.businessinsider.com/gates-dont-expect-the-nuclear-agreement-to-lead-to-a-more-moderate-iran-2016-1",
      "given_title": "GATES: Nuclear agreement won't lead to moderate Iran - Business Insider",
      "favorite": "0",
      "status": "0",
      "time_added": "1453255198",
      "time_updated": "1453255217",
      "time_read": "0",
      "time_favorited": "0",
      "sort_id": 0,
      "resolved_title": "GATES: Don't expect the nuclear agreement to lead to a more moderate Iran",
      "resolved_url": "http://www.businessinsider.com/gates-dont-expect-the-nuclear-agreement-to-lead-to-a-more-moderate-iran-2016-1",
      "excerpt": "Former defense secretary Robert Gates isn't optimistic that the landmark July 2015 nuclear deal with Iran will lead the country"
    }
  }
}
```

```
[
  'http://www.slate.com/articles/double_x/doublex/2016/01/kermit_gosnell_s_atrocities_aren_t_an_argument_for_stricter_abortion_laws.html',
  'http://bleacherreport.com/articles/2608872-australian-open-2016-results-winners-scores-stats-from-monday-singles-bracket',
  'http://www.slate.com/blogs/xx_factor/2016/01/14/rihanna Ahead_of_beyonc_in_the_celebrity_endorsement_game.html',
  'http://www.nzherald.co.nz/news/article.cfm?c_id=1&objectid=11576760',
  'https://blogs.msdn.microsoft.com/oldnewthing/20160114-00/?p=92851',
  'https://www.washingtonpost.com/national/energy-environment/conservation-groups-demand-end-to-refugee-occupation/2016/01/19/bb83a94e-beff-11e5-98c8-7fab78677d51_story.html',
]
```

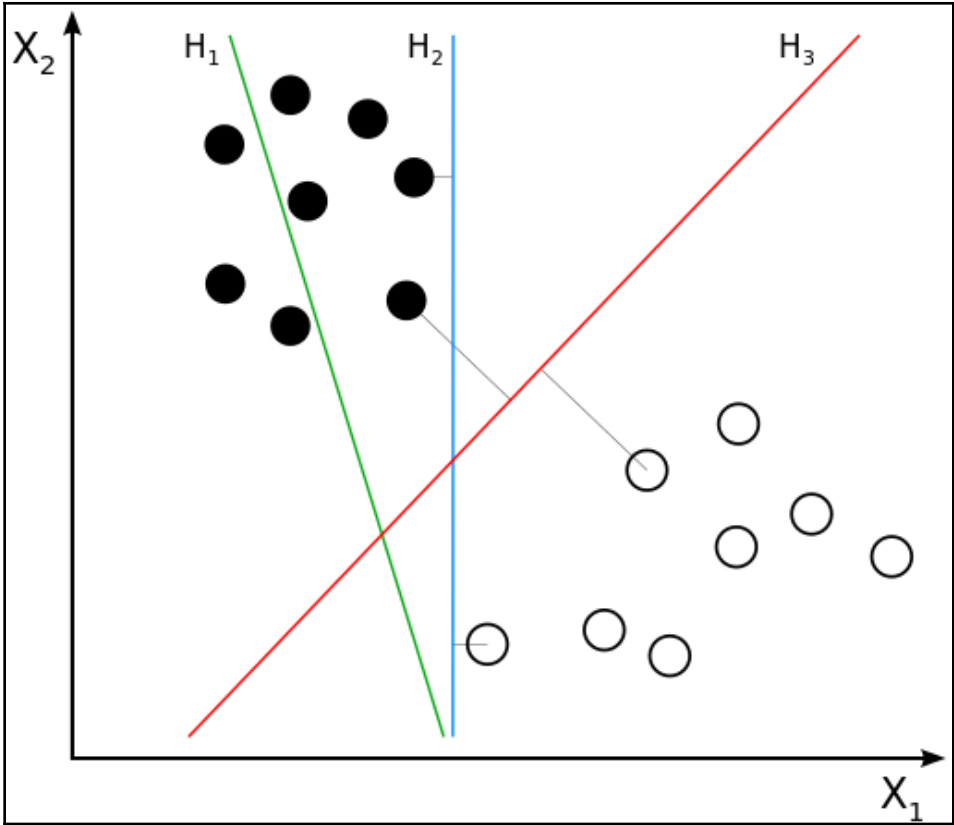
	urls	wanted
0	http://www.businessinsider.com/gates-dont-expect-the-nuclear-agreement-to-lead-to-a-more-moderate-iran-2016-1	n
1	http://www.businessinsider.com/r-islamic-state-frees-270-of-400-people-it-kidnapped-from-syrias-deir-al-zor-2016-1	n
2	https://blogs.iyogeshjoshi.com/get-a-free-ssl-certificate-for-your-website-and-setting-up-with-nodejs-server-b5189ac8e007?gi=316c759073e	n
3	https://www.usmagazine.com/entertainment/news/whoopi-slams-oscars-boycott-on-the-view-candace-cameron-bure-walks-out-w162078/	n
4	https://www.nbcnews.com/business/business-news/univision-s-hook-onion-play-coveted-millennials-n499906	n
5	http://www.playbill.com/news/article/12-things-you-should-know-about-hello-dolly-380518	n
6	http://www.people.com/article/celine-dion-husband-planned-funeral-to-ease-burden	n
7	https://www.usatoday.com/story/life/tv/2016/01/19/queen-victoria-series-take-downton-place-201779024610/	n
8	http://www.nydailynews.com/new-york/brooklyn/2m-tax-incentives-brooklyn-company-moving-article-1.2502387	n
9	https://www.nytimes.com/2016/01/24/travel/green-hotels-new-york-city.html	n
10	http://www.nydailynews.com/new-york/citizenship-now-undocumented-immigrants-qualify-n-y-nursing-licens-article-1.2501306	n

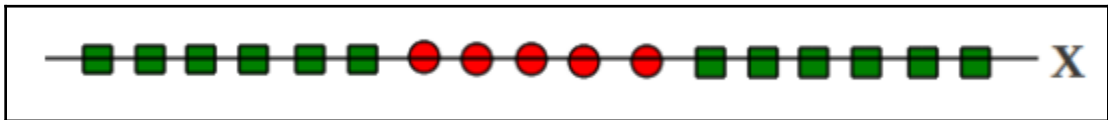
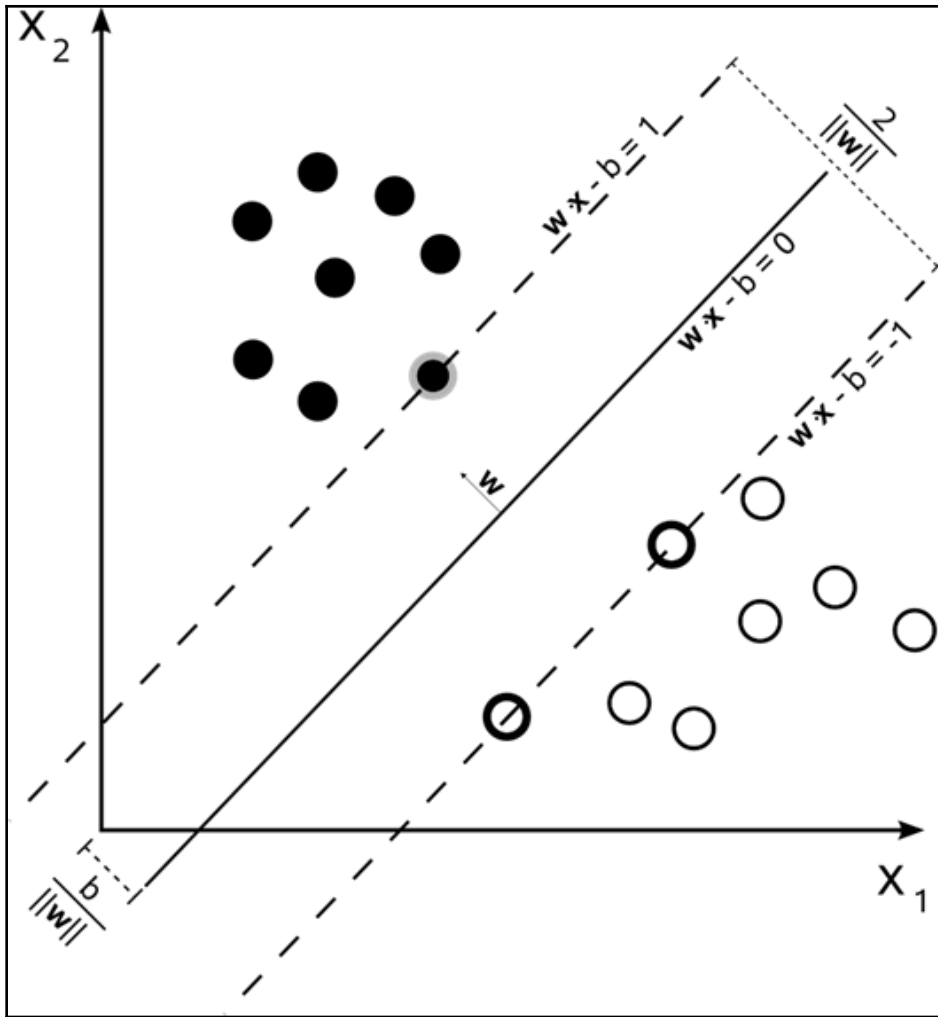
	urls	wanted
0	https://lifelifehacker.com/the-akrasia-effect-why-we-make-plans-and-dont-follow-t-1752799091	y
1	http://www.businessinsider.com/blizzard-for-the-ages-could-hit-northeast-2016-1	y
2	http://www.businessinsider.com/making-a-murderer-teresa-halbach-keys-2016-1	y
3	https://qz.com/585918/theres-a-simple-scientific-reason-that-diets-almost-never-work/	y
4	https://blogs.wsj.com/economics/2016/01/12/why-an-economist-plays-powerball/	y
5	https://www.fastcompany.com/3055560/the-future-of-work/what-the-interview-process-is-like-at-google-apple-amazon-and-other-tech	y
6	https://www.usatoday.com/story/tech/news/2016/01/19/amazon-automatic-ordering-dash-replenishment-brother-glucose-meter-ge-washer/78983730/	y
7	http://newyork.cbslocal.com/2016/01/19/east-village-slash-attack-surveillance-video/	y
8	http://www.slideshare.net/ChristopherMoody3/word2vec-lda-and-introducing-a-new-hybrid-algorithm-lda2vec-57135994	y
9	https://qz.com/588869/how-can-you-better-embarrass-yourself-the-big-questions-that-can-guide-your-lives-purpose/	y
10	http://www.bloombergview.com/articles/2016-01-06/how-economics-went-from-theory-to-data	y

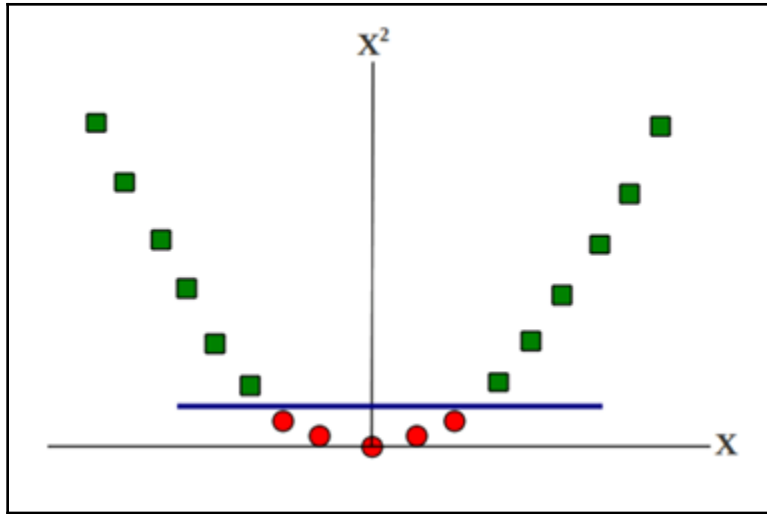
24	https://www.fastcompany.com/3055071/the-future-of-work/new-gmail-plug-in-highlights-words-and-phrases-that-undermine-your-messag	y
25	https://www.fastcodesign.com/3055079/infographic-of-the-day/how-complex-systems-and-chaos-theory-work-according-to-emoji	y
26	http://thenewinquiry.com/blogs/marginal-utility/wizards-of-like/	y
27	http://mobile.nytimes.com/2016/01/08/fashion/mens-style/new-york-bachelors-yearn-for-more.html	y
28	https://www.fastcompany.com/3055019/how-to-be-a-success-at-everything/the-secret-to-making-anxiety-work-in-your-favor	y
29	https://fivethirtyeight.com/features/how-msg-got-a-bad-rap-flawed-science-and-xenophobia/	y
...
58	https://github.com/mateogianolio/nlapack	n
59	http://www.telecomitalia.com/content/dam/telecomitalia/documents/innovation/it/eventi/progetto_unesco/4.Introduction_to_CPU_development_China.pdf	n
60	http://grodola.blogspot.com/2016/01/netbsd-support-for-psutil.html	n
61	https://github.com/arkverse/ell	n
62	https://akrzemi1.wordpress.com/2016/01/16/a-customizable-framework/	n

	urls	wanted	html
0	https://lifehacker.com/the-akrasia-effect-why-...	y	<div>\n<p>Humans are prolific procrastinators...
1	http://www.businessinsider.com/blizzard-for-th...	y	<div>\n<p><figure>\n<p>Each day, we <a href="http://eab.sa...
5	https://www.fastcompany.com/3055560/the-future...	y	<div>\n<p>It's kind of a perfect storm.</p>\n<...
6	https://www.usatoday.com/story/tech/news/2016/...	y	<div>\nCorrections & Clarification: An...
7	http://newyork.cbslocal.com/2016/01/19/east-vi...	y	<div>\n<p>\n</p><p>NEW YORK (CBSNewYor...
9	https://qz.com/588869/how-can-you-better-embar...	y	<div>\n<p>One day, when my brother was 18, he ...
11	https://qz.com/597214/what-you-eat-could-be-st...	y	<div>\n<p>The world is getting fatter, and <a ...
12	http://time.com/3746047/diet-soda-bad-belly-fat/	y	<div>\n<p>Drinking diet soda doesn't do your w...

	urls	wanted	html	text
0	https://lifehacker.com/the-akrasia-effect-why-...	y	<div>\n<p>Humans are prolific procrastinators...	\nHumans are prolific procrastinators. It's ea...
1	http://www.businessinsider.com/blizzard-for-th...	y	<div>\n<p><figure>\n<p>Each day, we <a href="http://eab.sa...	\nEach day, we make hundreds of food decision...
5	https://www.fastcompany.com/3055560/the-future...	y	<div>\n<p>It's kind of a perfect storm.</p>\n<...	\nIt's kind of a perfect storm.\nA record 78% ...
6	https://www.usatoday.com/story/tech/news/2016/...	y	<div>\nCorrections & Clarification: An...	\nCorrections & Clarification: An earlier vers...
7	http://newyork.cbslocal.com/2016/01/19/east-vi...	y	<div>\n<p>\n</p><p>NEW YORK (CBSNewYor...	\n\nNEW YORK (CBSNewYork) - Police have releas...
9	https://qz.com/588869/how-can-you-better-embar...	y	<div>\n<p>One day, when my brother was 18, he ...	\nOne day, when my brother was 18, he waltzed ...
11	https://qz.com/597214/what-you-eat-could-be-st...	y	<div>\n<p>The world is getting fatter, and <a ...	\nThe world is getting fatter, and some say it...
12	http://time.com/3746047/diet-soda-bad-belly-fat/	y	<div>\n<p>Drinking diet soda doesn't do your w...	\nDrinking diet soda doesn't do your waistline...














Q RSS Feed

Applets Services

 RSS Feed	 Feedly	 Email Digest	 Inoreader	 NewsBlur	 Email
---	---	---	--	--	--

The image shows a user interface for RSS feeds. At the top, there is a search bar containing the text "RSS Feed". Below the search bar, the interface is divided into two sections: "Applets" and "Services". Under the "Applets" section, there are six icons representing different services: RSS Feed (orange), Feedly (green), Email Digest (blue), Inoreader (light blue), NewsBlur (brown), and Email (dark blue). Each icon is accompanied by its respective name below it.



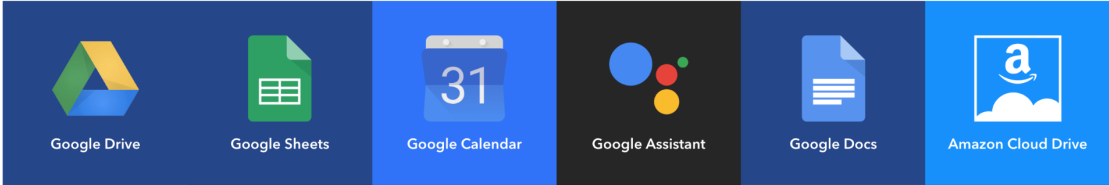
RSS Feed

The RSS Feed service lets you turn on and make Applets for RSS and Atom web feeds. When the content you care about goes live, stay up-to-date with notifications, emails, and more.

Connect

Q Google Drive

Applets Services



- Google Drive
- Google Sheets
- Google Calendar
- Google Assistant
- Google Docs
- Amazon Cloud Drive

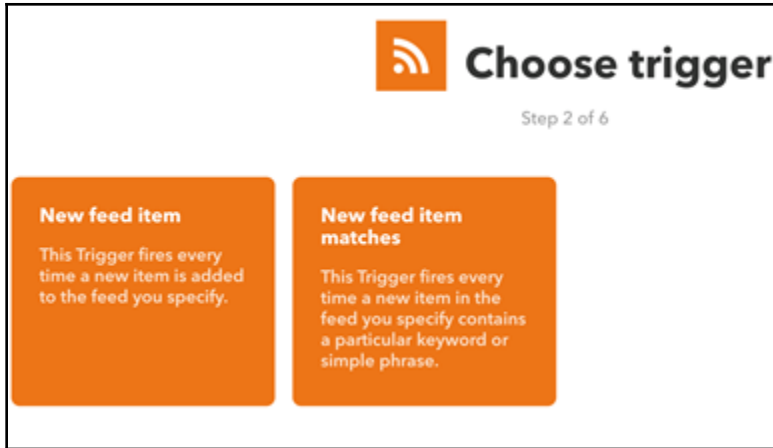


Google Drive

Google Drive lets you store and access your files anywhere – on the web, on your hard drive, or on the go. Applets let you send the most important information into your Google Drive, automatically.

New Applet

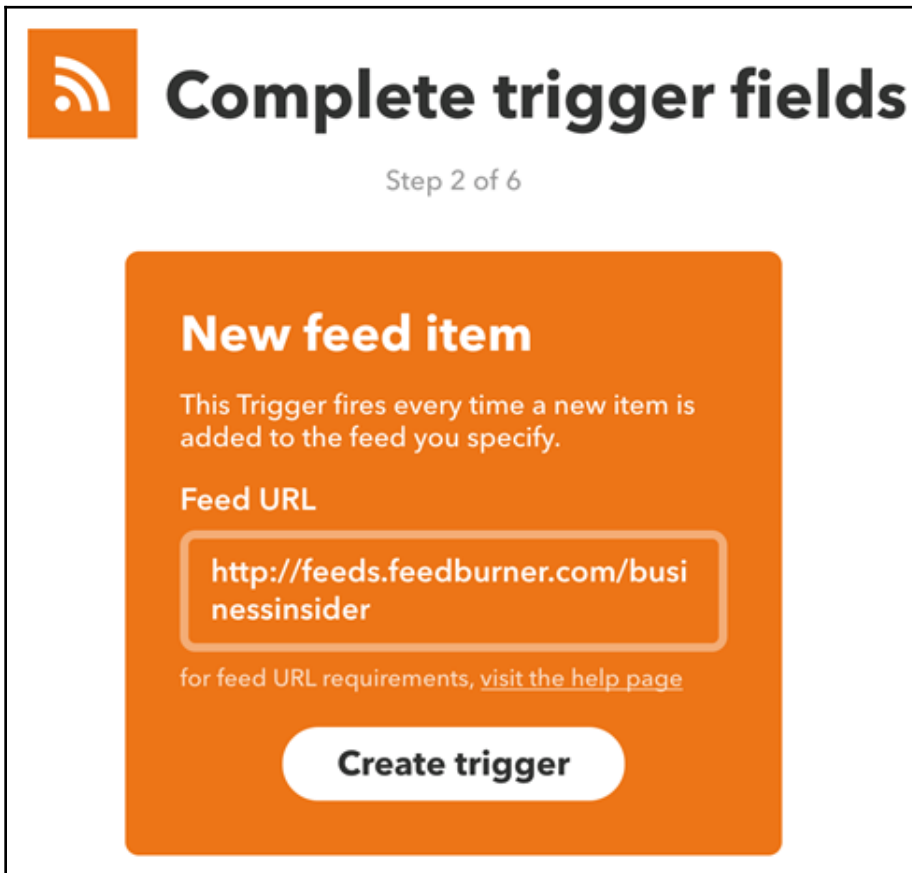
if  this then that



Choose trigger
Step 2 of 6

New feed item
This Trigger fires every time a new item is added to the feed you specify.

New feed item matches
This Trigger fires every time a new item in the feed you specify contains a particular keyword or simple phrase.



Complete trigger fields
Step 2 of 6


New feed item
This Trigger fires every time a new item is added to the feed you specify.

Feed URL
`http://feeds.feedburner.com/businessinsider`

for feed URL requirements, [visit the help page](#)

Create trigger



 **Choose action**
Step 4 of 6

Add row to spreadsheet
This action will add a single row to the bottom of the first worksheet of a spreadsheet you specify. Note: a new spreadsheet is created after 2000 rows.

Update cell in spreadsheet
This action will update a single cell in the first worksheet of a spreadsheet you specify. Note: a new spreadsheet is created if the file doesn't exist.

Add row to spreadsheet

This action will add a single row to the bottom of the first worksheet of a spreadsheet you specify. Note: a new spreadsheet is created after 2000 rows.

Spreadsheet name

Will create a new spreadsheet if one with this title doesn't exist

Formatted row

EntryPublished		EntryTitle		
	EntryUrl		EntryContent	
FeedTitle		FeedUrl		

Use "|||" to separate cells

Drive folder path

Format: some/folder/path (defaults to "IFTT")

	B	C	D	E	F
165	Audi Unveils Lunar Quattro, A New Robotic Rover For Moon Exploration - Immortal News	http://news.google.com/news?hl=en	<table border="0" cellpadding="2" cellspacing="2" colspan="2"> Science - Google	http://news.google.com/news?hl=en	
166	Astronomers may have found most powerful supernova - CNN	http://news.google.com/news?hl=en	<table border="0" cellpadding="2" cellspacing="2" colspan="2"> Science - Google	http://news.google.com/news?hl=en	
167	What Twitter Is Saying About the Democratic Debate	http://www.slate.com/articles/teaser	<p>On Sunday, the Democrats will hold their	Slate Articles	http://www.slate.com/articles/teaser
168	The Downton Abbey Podcast 	http://www.slate.com/articles/teaser	<p>This is a free preview of Si	Slate Articles	http://www.slate.com/articles/teaser
169	Who Won the Democratic Debate?	http://www.slate.com/articles/teaser	<p>Now that the fourth Democratic presidenti	Slate Articles	http://www.slate.com/articles/teaser
170	Hillary Clinton Won Sunday Night's Debate	http://www.slate.com/articles/teaser	<p>Hillary Clinton's superb debate performan	Slate Articles	http://www.slate.com/articles/teaser
171	America's Other Original Sin	http://www.slate.com/articles/teaser	<p>Here are three scenes from the history of	Slate Articles	http://www.slate.com/articles/teaser
172	Native American Slaves in New France	http://www.slate.com/articles/teaser	<p>Between 1660 and 1760, French colonists	Slate Articles	http://www.slate.com/articles/teaser
173	Just a Guy at the Bar	http://www.slate.com/articles/teaser	<p>A lot of my friends have stopped watching	Slate Articles	http://www.slate.com/articles/teaser
174	The Color of Surveillance	http://www.slate.com/articles/teaser	<p>The FBI has a lead. A prominent religious	Slate Articles	http://www.slate.com/articles/teaser
175	Name That Rare Aquatic Creature	http://www.slate.com/articles/teaser	<p>In the video above, three scientists with&r	Slate Articles	http://www.slate.com/articles/teaser
176	Listen to Kanye West's 'No More Parties in LA' Featuring Kendrick Lamar - TIME	http://news.google.com/news?hl=en	<table border="0" cellpadding="2" cellspacing="2" colspan="2"> Entertainment - <	http://news.google.com/news?hl=en	
177	TV highlights: 'Marvel's Agent Carter' returns for Season 2 on ABC - Washington Post	http://news.google.com/news?hl=en	<table border="0" cellpadding="2" cellspacing="2" colspan="2"> Entertainment - <	http://news.google.com/news?hl=en	
178	Winslet tips Titanic co-star DiCaprio for Oscar - The Nation	http://news.google.com/news?hl=en	<table border="0" cellpadding="2" cellspacing="2" colspan="2"> Entertainment - <	http://news.google.com/news?hl=en	
179	Ta-Nehisi Coates among finalists for book critics awards - San Francisco Chronicle	http://news.google.com/news?hl=en	<table border="0" cellpadding="2" cellspacing="2" colspan="2"> Entertainment - <	http://news.google.com/news?hl=en	

	title	urls	html
0	The man who owned the world: David Bowie made ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
1	Netflix To Ramp Up Originals Targeting Kids - ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
2	Nostalgia powers Netflix's 'Fuller House' retu...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
3	High School Musical cast to reunite for 10-yea...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
4	Unbreakable Kimmy Schmidt renewed for season 3...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
5	David Bowie's 'Blackstar' Becomes His First No...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
6	5 reasons why birthday girl Betty White had a ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
7	Straight Outta Compton' Producer Calls Oscar N...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
8	SXSW Co-Founder Confesses to 'David Bowie' Str...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
9	Ted Sarandos Blasts NBC's Netflix Ratings Info...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...
10	Critics' Choice Awards: What will happen when ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing="2" colspan="2">...

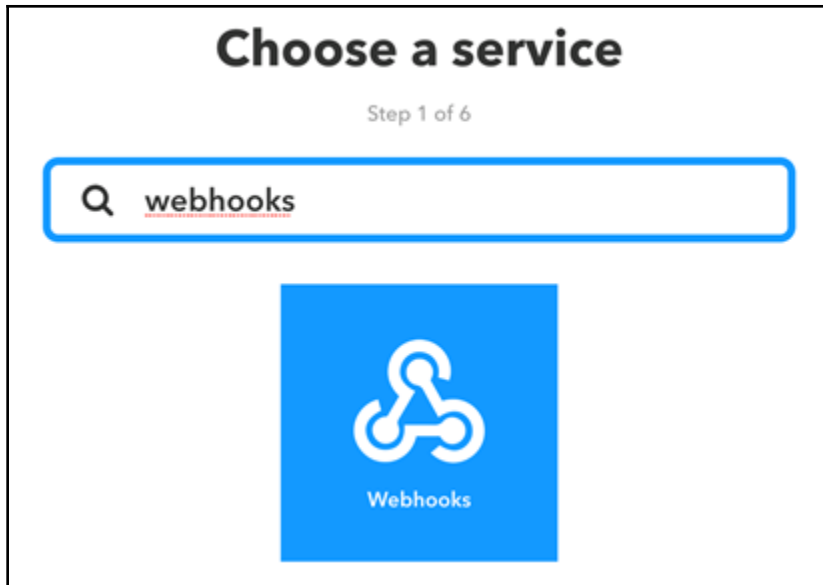
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<902x3790 sparse matrix of type '<class 'numpy.float64'>'
with 45509 stored elements in Compressed Sparse Row format>
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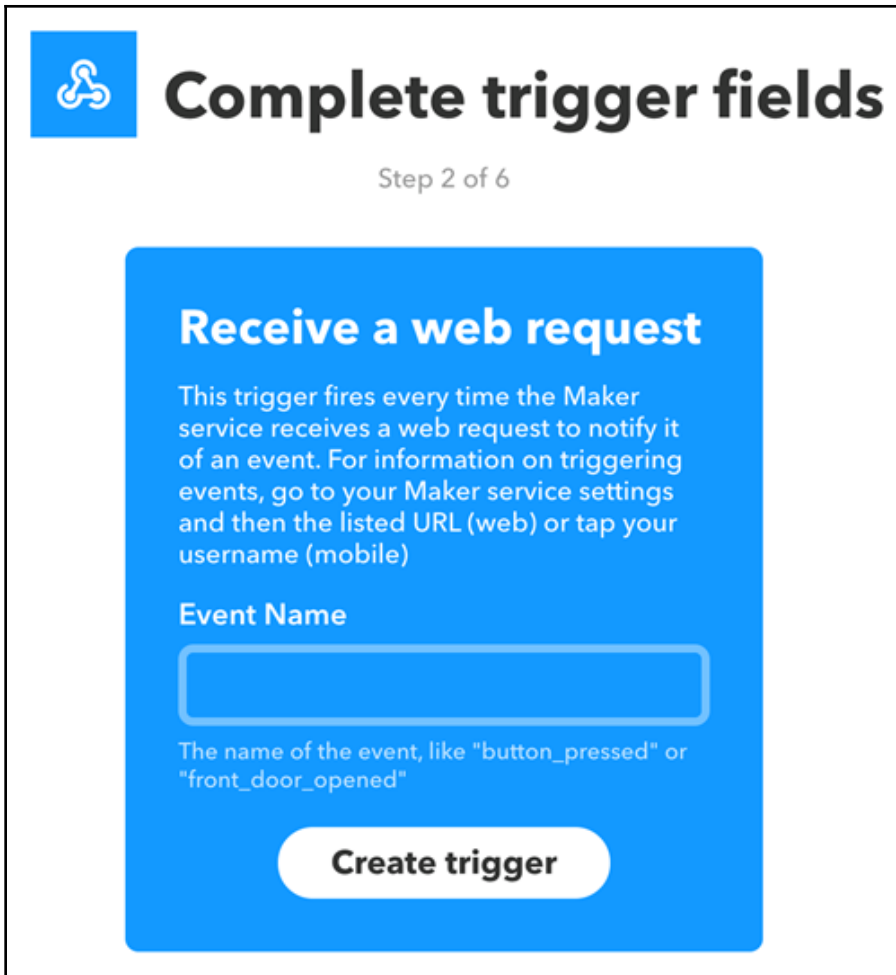
wanted	
0	n
1	n
2	n
3	n
4	n
5	n
6	n
7	n
8	n
9	n
10	n


wanted		title	urls	html	text
0	n	The man who owned the world: David Bowie made ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	SalonThe man who owned the world: David Bowie ...
1	n	Netflix To Ramp Up Originals Targeting Kids - ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	Wall Street JournalNetflix To Ramp Up Original...
2	n	Nostalgia powers Netflix's 'Fuller House' retu...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	USA TODAYNostalgia powers Netflix's 'Fuller Ho...
3	n	High School Musical cast to reunite for 10-yea...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	Entertainment WeeklyHigh School Musical cast t...
4	n	Unbreakable Kimmy Schmidt renewed for season 3...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	Entertainment WeeklyUnbreakable Kimmy Schmidt ...

wanted		title	urls	html	text
0	n	The man who owned the world: David Bowie made ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	SalonThe man who owned the world: David Bowie ...
1	n	Netflix To Ramp Up Originals Targeting Kids - ...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	Wall Street JournalNetflix To Ramp Up Original...
2	n	Nostalgia powers Netflix's 'Fuller House' retu...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	USA TODAYNostalgia powers Netflix's 'Fuller Ho...
3	n	High School Musical cast to reunite for 10-yea...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	Entertainment WeeklyHigh School Musical cast t...
4	n	Unbreakable Kimmy Schmidt renewed for season 3...	http://news.google.com/news/url?sa=t&fd=R&ct2=...	<table border="0" cellpadding="2" cellspacing=...	Entertainment WeeklyUnbreakable Kimmy Schmidt ...

wanted		text
0	y	\nHumans are prolific procrastinators. It's ea...
1	y	\n Getty Images/Mario Tama A monster of a snow...
2	y	\nWhen the podcast "Serial" went viral, fans o...
3	y	\nEach day, we make hundreds of food decision...
5	y	\nIt's kind of a perfect storm.\nA record 78% ...
6	y	\nCorrections & Clarification: An earlier vers...
7	y	\n\nNEW YORK (CBSNewYork) - Police have releas...
9	y	\nOne day, when my brother was 18, he waltzed ...
11	y	\nThe world is getting fatter, and some say it...
12	y	\nDrinking diet soda doesn't do your waistline...





 **Complete trigger fields**

Step 2 of 6

Receive a web request

This trigger fires every time the Maker service receives a web request to notify it of an event. For information on triggering events, go to your Maker service settings and then the listed URL (web) or tap your username (mobile)

Event Name

The name of the event, like "button_pressed" or "front_door_opened"

Create trigger

Receive a web request

This trigger fires every time the Maker service receives a web request to notify it of an event. For information on triggering events, go to your Maker service settings and then the listed URL (web) or tap your username (mobile)

Event Name

The name of the event, like "button_pressed" or "front_door_opened"

Create trigger

Choose action service

Step 3 of 6

Q gmail|



Gmail

Send yourself an email

This action will send yourself an email.
HTML, images and links are supported.

Subject

Add ingredient

Body

Some HTML ok

Add ingredient

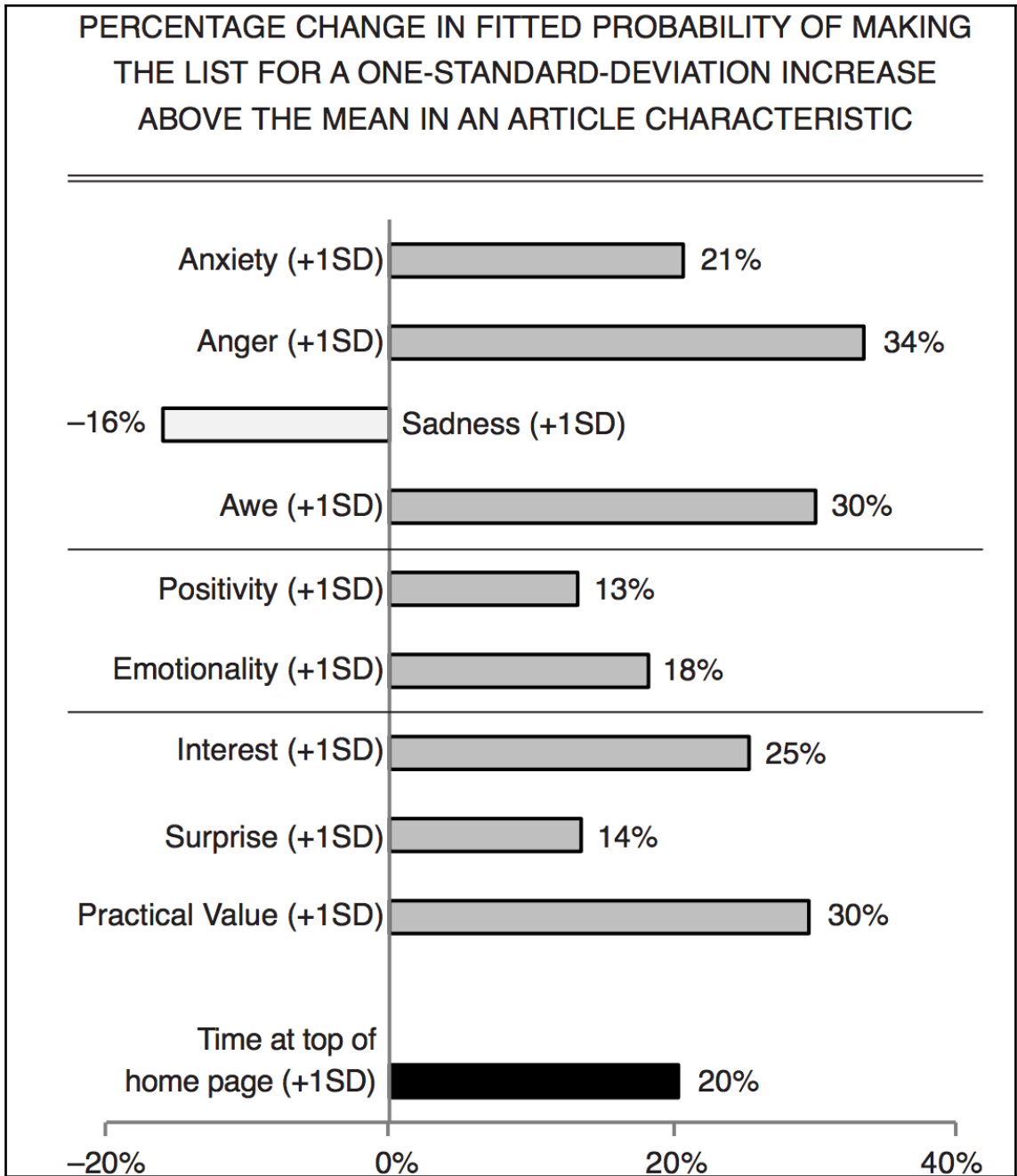
Attachment URL

URL to include as an attachment

Add ingredient

Create action

Chapter 6: Predict whether Your Content Will Go Viral



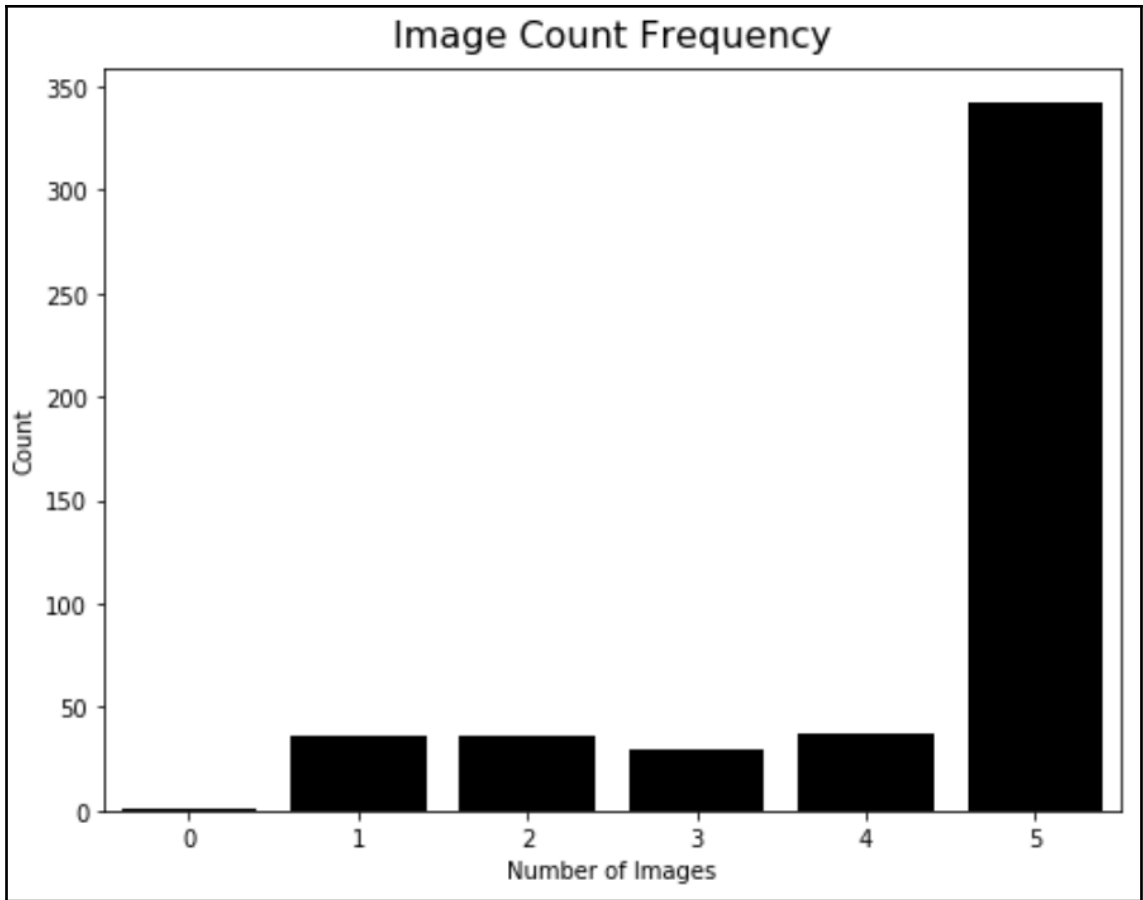
	title	link	fb	lnkdn	pins	date
0	What Career Should You Actually Have?	http://www.ruzzit.com/en-US/Redirect/Link?media=1928328	5100000.0	1559	10900	2016-01-24 21:00:00
1	No One Showed Up To A Little Boy With Autism's Birthday, So His Mom Asked Facebook For Help	http://www.ruzzit.com/en-US/Redirect/Link?media=564259	400000.0	277	4	2015-02-23 15:39:00
2	Churro Ice Cream Sandwiches Are The Most Delicious Thing You Need In Your Life	http://www.ruzzit.com/en-US/Redirect/Link?media=1109973	402000.0	15	59	2015-07-11 00:36:00

```
Index(['title', 'link', 'fb', 'lnkdn', 'pins', 'date', 'redirect',
      'pg_missing', 'img_link', 'json_data', 'site', 'img_count', 'entities',
      'html', 'text'],
      dtype='object')
```












	html	text	word_count
0	None	None	NaN
1	<div>\n<p>\n</p><p> </p>\n<div>\n<div>\n<div>\n<div>1....	\n\n\n\n\n1. This is Glenn Buratti, a 6-year-old from Osceola County, Florida. He has mild autism and epilepsy. Earlier this month, his mom Ashlee threw him a birthday party, inviting 16 childr...	79.0
2	<div>\n<p>\n</p><div>\n<div>\n<div>\n<div>1. Everyone loves ice cream. </div>\n<div>2. And of course churros are just as incredible. </div>\n<div>\n<h2>3. Individually, they make for a pretty tast...	\n\n\n\n\n1. Everyone loves ice cream. \n2. And of course churros are just as incredible. \n\n3. Individually, they make for a pretty tasty dessert...\n\n\n\n\n4. ...but have you ever thought ab...	78.0
3	<div>\n<h3>\n2013, Zerlina Maxwell ignited a firestorm of controversy when she strongly recommended we stop telling women how to not get raped. </h3>\n<p>Here are her words, from the <a href="htt...	\n\n2013, Zerlina Maxwell ignited a firestorm of controversy when she strongly recommended we stop telling women how to not get raped. \nHere are her words, from the transcript of her appearance ...	414.0

word_count	main_hex	main_rgb
NaN	#b29e83	[178, 158, 131]
79.0	#0c1514	[12, 21, 20]
78.0	#c69e73	[198, 158, 115]
414.0	#e9eff4	[233, 239, 244]
NaN	#f3f4f0	[243, 244, 240]
NaN	#f1f9f3	[241, 249, 243]
















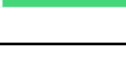
count	
5.0	342
4.0	37
1.0	36
2.0	36
3.0	30
0.0	1



	count
#c4c4c4	3
#f8fbfa	3
#211537	2
#070603	2
#eaeef	2
#312c27	2
#f6fafb	2
#39546c	2
#c6b7b5	2
#4f8f9	2
#3dd876	2

	count	color
#c4c4c4	3	
#f8fbfa	3	
#211537	2	
#070603	2	
#eaeef	2	
#312c27	2	
#f6fafb	2	
#39546c	2	
#c6b7b5	2	
#f4f8f9	2	
#3dd876	2	

	r	g	b
0	200.200000	165.350000	139.050000
1	12.462500	13.700000	16.237500
2	213.942308	218.557692	216.211538
3	136.150000	116.500000	88.000000
4	146.911765	148.294118	139.235294
5	126.300000	61.100000	38.900000
6	75.323529	78.294118	83.323529
7	195.617647	192.970588	186.764706
8	1.600000	82.000000	156.200000
9	69.055556	58.611111	50.277778
10	30.859155	29.408451	35.169014

	r	g	b	color
#c8a58b	200.2	165.35	139.05	
#0c0e10	12.4625	13.7	16.2375	
#d6dbd8	213.942	218.558	216.212	
#887458	136.15	116.5	88	
#93948b	146.912	148.294	139.235	
#7e3d27	126.3	61.1	38.9	
#4b4e53	75.3235	78.2941	83.3235	
#c4c1bb	195.618	192.971	186.765	
#02529c	1.6	82	156.2	
#453b32	69.0556	58.6111	50.2778	
#1f1d23	30.8592	29.4085	35.169	
#eff2f2	238.509	242.473	242.309	
#d93733	217.25	55.25	50.75	
#5a7389	90.2941	115.176	136.529	
#7caec5	124	174.375	196.875	
#3dd876	61	216	118	

count	
0	6
1	18
2	14
3	16
4	11
5	11
6	14
7	11
8	10
9	6
10	12

	count
count	482.000000
mean	10.948133
std	3.436294
min	1.000000
25%	9.000000
50%	11.000000
75%	13.000000
max	25.000000

	count
(the,)	144
(to,)	130
(a,)	122
(of,)	86
(in,)	85
(you,)	68
(is,)	68
(and,)	65
(that,)	43
(will,)	42
(for,)	41

	count
(pictures, that)	11
(that, will)	9
(dies, at)	8
(of, the)	8
(in, a)	8
(in, the)	8
(people, who)	8
(how, to)	7
(no, one)	7
(donald, trump)	7

	count
(donald, trump)	7
(community, post)	5
(year, old)	5
(cnn, com)	4
(things, you'll)	4
(white, people)	4
(19, things)	4
(fox, news)	4
(gay, marriage)	3
(you'll, understand)	3
(dies, 83)	3
(pictures, real)	3

	count
(that, will, make)	4
(for, people, who)	4
(24, pictures, that)	3
(that, are, too)	3
(with, down, syndrome)	3
(a, woman, is)	3
(you, need, to)	3
(pictures, that, will)	3
(too, real, for)	3
(the, ring, of)	3
(pictures, that, are)	3
(are, too, real)	3
(dies, at, 83)	3

	site
BuzzFeed	131
The Huffington Post	56
Nytimes	35
Upworthy	24
IFLScience	20
Washington Post	15
Mashable	13
Mic	11
Western Journalism	8
Business Insider	8
The Atlantic	6
CNN	6
the Guardian	6
Fox News	5
BuzzFeed Community	5
TODAY.com	4
Rolling Stone	4

	count
(islamic, state)	160
(united, states)	126
(year, old)	121
(new, york)	91
(social, media)	60
(years, ago)	57
(white, people)	51
(first, time)	49
(bernie, sanders)	45
(don't, want)	44
(last, year)	43
(every, day)	43
(black, people)	40
(don't, know)	39
(climate, change)	39
(many, people)	38
(two, years)	37
(high, school)	36
(islamic, state's)	36
(president, obama)	36

	count
(advertisement, story, continues)	32
(check, articles, buzzfeed)	27
(articles, buzzfeed, com)	27
(buzzfeed, com, tagged)	21
(new, york, times)	19
(pic, twitter, com)	17
(via, upward, spiral)	17
(new, york, city)	16
(every, single, day)	16
(follow, us, twitter)	15
(like, us, facebook)	14
(g, m, o)	13
(facebook, follow, us)	13
(us, facebook, follow)	13
(5, xbox, two)	12
(playstation, 5, xbox)	12

```
test length: 152
train length: 233
```

	ABC News	Asbury Park Press	BBC News	Bloomberg.com	Boredom Therapy	Breitbart	Business Insider	BuzzFeed	BuzzFeed Community	CNN
0	0	0	0	0	0	0	0	1	0	0
1	0	0	0	0	0	0	0	1	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	1	0	0
5	0	0	0	0	0	0	0	0	0	0

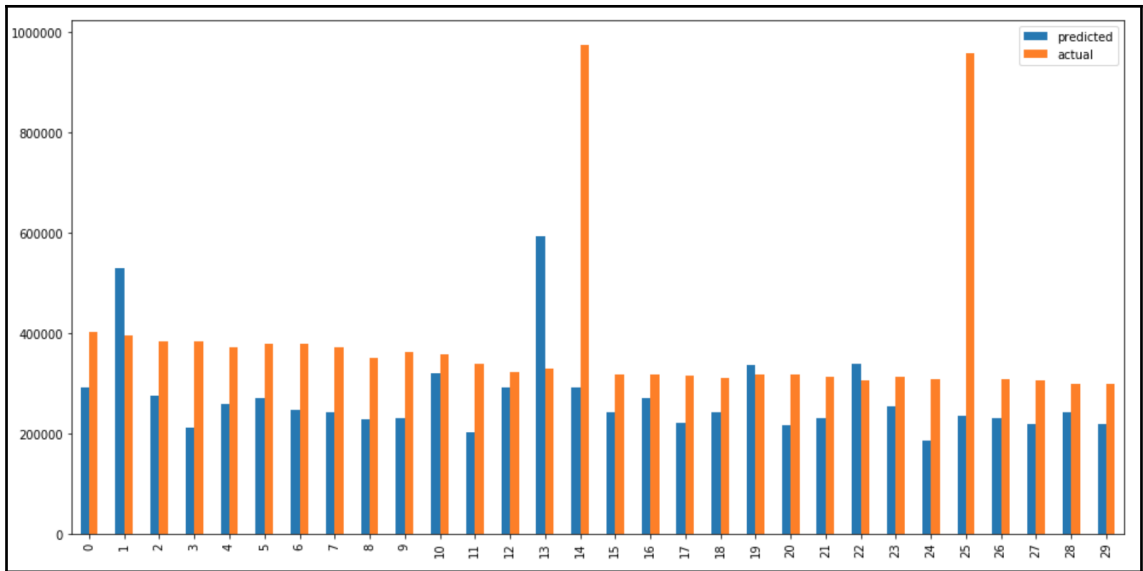
	predicted	actual	delta
0	292549.50	402000	-0.272265
1	530319.00	395000	0.342580
2	275994.00	383000	-0.279389
3	211309.00	383000	-0.448279
4	259235.00	373000	-0.305000
5	271205.00	378000	-0.282526
6	246440.00	378000	-0.348042
7	241459.00	371000	-0.349167
8	228334.00	352000	-0.351324
9	231523.00	362000	-0.360434
10	320281.00	358000	-0.105360

```
count      152.000000
mean       0.074475
std        0.525629
min        -0.841433
25%        -0.266933
50%        0.029722
75%        0.301447
max        2.688333
Name: delta, dtype: float64
```

0.2

0.0

0.7381440390029351



	title	fb
0	Churro Ice Cream Sandwiches Are The Most Delicious Thing You Need In Your Life	402000.0
1	One minute of fed-up celebrities talking about guns is actually worth your time.	395000.0
2	Donald Trump Just Stopped Being Funny	383000.0
3	This Billionaire Governor Taxed the Rich and Increased the Minimum Wage -- Now, His State's Economy Is One of the Best in the Country	383000.0
4	The girl who gets gifts from birds - BBC News	373000.0
5	This Jarring Photo Series Captures What PTSD Really Looks Like	378000.0
6	Being Too Nice Can Contribute to Depression	378000.0
7	For Julie Andrews and Christopher Plummer, The Sound of Music Was Never So Long, Farewell	371000.0
8	Drug Goes From 13.50aTabletto 750, Overnight	352000.0
9	Jeb Bush: Unwed Mothers Should Be Publicly Shamed	362000.0
10	He shows how the news talks about black people by talking about white people instead.	358000.0
11	The Norwegian Secret To Enjoying A Long Winter	340000.0
12	The World's Last Male Northern White Rhino Placed Under Armed Guard	323000.0
13	Listen to this organ in Croatia that uses the sea to make hauntingly beautiful music.	330000.0
14	16-Year-Old Malala Yousafzai Leaves Jon Stewart Speechless With Comment About Pacifism	975000.0
15	Dutch nursing home offers rent-free housing to students	319000.0
16	A Microbiologist Recreated 'Starry Night' With Bacteria In A Petri Dish	318000.0
17	Russian Man Will Become Subject Of First Human Head Transplant Ever Performed	316000.0
18	Kindergarten: While American Kids Read, Their Finnish Peers Play	311000.0
19	'We can't stop...': Watch couple's hilarious pregnancy announcement	318000.0
20	To My Daughter With Down Syndrome on Her Wedding Day	317000.0
21	I'm a veteran, and I hate 'Happy Memorial Day.' Here's why.	314000.0
22	The end of capitalism has begun	305000.0
23	War veterans proudly reveal their injuries in powerful naked pictures	313000.0
24	How to Raise a Creative Child. Step One: Back Off	308000.0
25	Husband Says He Can't Afford His Wife As A Stay-At-Home Mom And His Reasoning Adds Up. Big Time.	958000.0
26	Man's post about traffic stop goes viral	309000.0
27	Science Proves Bassists Are Actually the Most Important Members of the Band - Here's Why	306000.0
28	The Perseid Meteor Shower Peaks TONIGHT - Don't Miss It!	299000.0
29	OU professor: Youths' attraction to Sanders shows education failure	298000.0

	predicted	actual	delta
0	317559.0	402000	-0.210052
1	335695.0	395000	-0.150139
2	231530.0	383000	-0.395483
3	264364.0	383000	-0.309755
4	258683.0	373000	-0.306480
5	227973.0	378000	-0.396897
6	281266.0	378000	-0.255910
7	267251.8	371000	-0.279645
8	242438.0	352000	-0.311256
9	205556.0	362000	-0.432166
10	341792.0	358000	-0.045274

0.7142035714081069

0.710545088873634

Chapter 7: Use Machine Learning to Forecast the Stock Market

Date	High	Low	Open	Close	Volume	Adj Close
2010-01-04	113.389999	111.510002	112.370003	113.330002	118944600.0	94.545494
2010-01-05	113.680000	112.849998	113.260002	113.629997	111579900.0	94.795784
2010-01-06	113.989998	113.430000	113.519997	113.709999	116074400.0	94.862526
2010-01-07	114.330002	113.180000	113.500000	114.190002	131091100.0	95.262955
2010-01-08	114.620003	113.660004	113.889999	114.570000	126402800.0	95.579971
2010-01-11	115.129997	114.239998	115.080002	114.730003	106375700.0	95.713455
2010-01-12	114.209999	113.220001	113.970001	113.660004	163333500.0	94.820801
2010-01-13	114.940002	113.370003	113.949997	114.620003	161822000.0	95.621696
2010-01-14	115.139999	114.419998	114.489998	114.930000	115718800.0	95.880295



112.37000274658203

275.6499938964844

163.27999114990234

Date	
2010-01-04	0.959999
2010-01-05	0.369995
2010-01-06	0.190002
2010-01-07	0.690002
2010-01-08	0.680000
2010-01-11	-0.349998
2010-01-12	-0.309998
2010-01-13	0.670006
2010-01-14	0.440002
2010-01-15	-1.090004
2010-01-19	1.439995
2010-01-20	-0.389999
2010-01-21	-2.220001
2010-01-22	-1.989998
2010-01-25	-0.440002
2010-01-26	-0.029999
2010-01-27	0.660004
2010-01-28	-1.620003

53.36994934082031

1.3077717572417953

0.9355729837546058

-0.9635857357921829

-0.6729057274054532

Date	
2010-01-04	NaN
2010-01-05	0.264710
2010-01-06	0.070406
2010-01-07	0.422129
2010-01-08	0.332776
2010-01-11	0.139656
2010-01-12	-0.932624
2010-01-13	0.844623
2010-01-14	0.270457
2010-01-15	-1.122423
2010-01-19	1.249558
2010-01-20	-1.016859
2010-01-21	-1.922910
2010-01-22	-2.229183
2010-01-25	0.512771
2010-01-26	-0.419057
2010-01-27	0.475715
2010-01-28	-1.147229

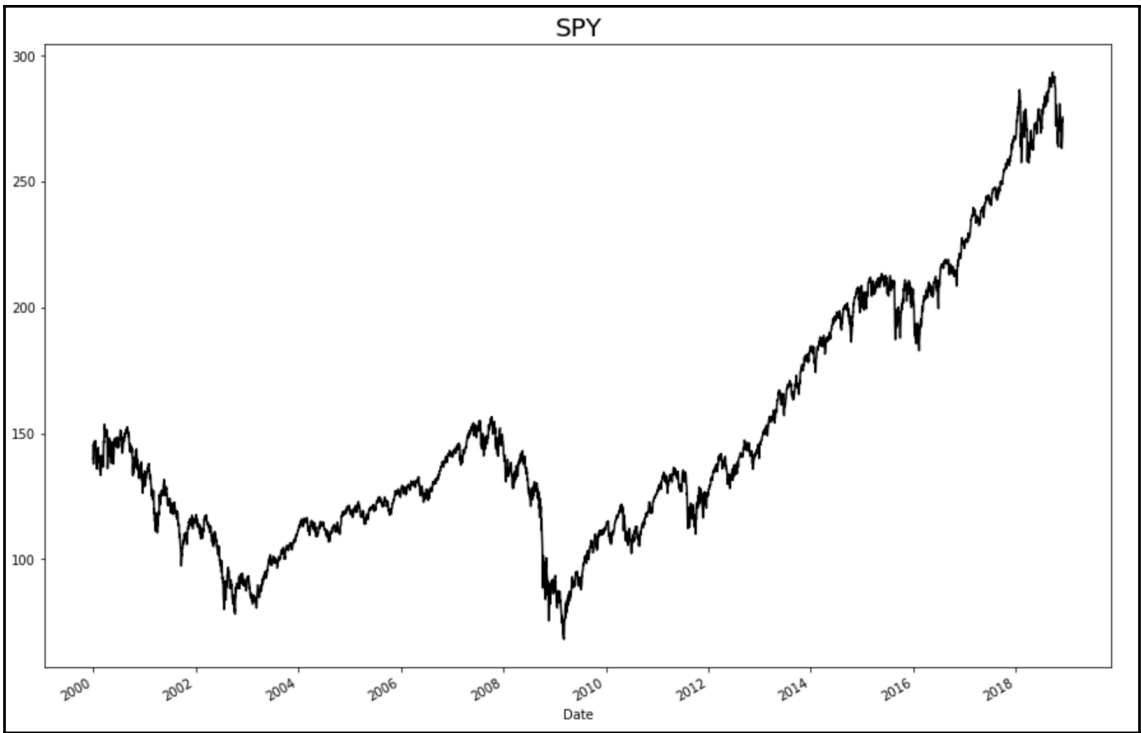
```
Trades: 2244
Wins: 1228
Losses: 1006
Breakeven: 10
Win/Loss Ratio 1.221
Mean Win: 0.628
Mean Loss: -0.668
Mean 0.044
Std Dev: 0.93
Max Loss: -6.512
Max Win: 4.65
Sharpe Ratio: 0.7503
```

```
Trades: 2245
Wins: 1223
Losses: 1004
Breakeven: 18
Win/Loss Ratio 1.218
Mean Win: 0.477
Mean Loss: -0.541
Mean 0.018
Std Dev: 0.723
Max Loss: -4.196
Max Win: 3.683
Sharpe Ratio: 0.3965
```

```
Trades: 2244
Wins: 1202
Losses: 1005
Breakeven: 37
Win/Loss Ratio 1.196
Mean Win: 0.376
Mean Loss: -0.392
Mean 0.026
Std Dev: 0.556
Max Loss: -3.406
Max Win: 4.09
Sharpe Ratio: 0.745
```



```
Trades: 2244  
Wins: 627  
Losses: 454  
Breakeven: 1163  
Win/Loss Ratio 1.381  
Mean Win: 0.679  
Mean Loss: -0.639  
Mean 0.061  
Std Dev: 0.643  
Max Loss: -3.99  
Max Win: 5.88  
Sharpe Ratio: 1.4947
```



130.21249389648438

-26.9024658203125

154.30245971679688

```
Trades: 4759
Wins: 2552
Losses: 2188
Breakeven: 19
Win/Loss Ratio 1.166
Mean Win: 0.769
Mean Loss: -0.852
Mean 0.021
Std Dev: 1.211
Max Loss: -9.845
Max Win: 14.52
Sharpe Ratio: 0.2722
```

```
Trades: 4760
Wins: 2500
Losses: 2223
Breakeven: 37
Win/Loss Ratio 1.125
Mean Win: 0.642
Mean Loss: -0.719
Mean 0.001
Std Dev: 1.002
Max Loss: -8.991
Max Win: 8.435
Sharpe Ratio: 0.0191
```

```

Trades: 4759
Wins: 2533
Losses: 2163
Breakeven: 63
Win/Loss Ratio 1.171
Mean Win: 0.413
Mean Loss: -0.442
Mean 0.019
Std Dev: 0.656
Max Loss: -8.322
Max Win: 6.068
Sharpe Ratio: 0.4601

```

Date	Close	Close Minus 1	Close Minus 2	Close Minus 3	Close Minus 4	Close Minus 5	Close Minus 6	Close Minus 7	Close Minus 8	Close Minus 9
2000-02-01	140.937500	139.562500	135.875000	140.250000	140.812500	141.937500	140.343704	144.437500	144.750000	147.000000
2000-02-02	141.062500	140.937500	139.562500	135.875000	140.250000	140.812500	141.937500	140.343704	144.437500	144.750000
2000-02-03	143.187500	141.062500	140.937500	139.562500	135.875000	140.250000	140.812500	141.937500	140.343704	144.437500
2000-02-04	142.593704	143.187500	141.062500	140.937500	139.562500	135.875000	140.250000	140.812500	141.937500	140.343704
2000-02-07	142.375000	142.593704	143.187500	141.062500	140.937500	139.562500	135.875000	140.250000	140.812500	141.937500

Date	Close Minus 20	Close Minus 19	Close Minus 18	Close Minus 17	Close Minus 16	Close Minus 15	Close Minus 14	Close Minus 13	Close Minus 12	Close Minus 11
2000-02-01	145.437500	139.750000	140.000000	137.750000	145.750000	146.250000	144.500000	143.062500	145.000000	146.968704
2000-02-02	139.750000	140.000000	137.750000	145.750000	146.250000	144.500000	143.062500	145.000000	146.968704	145.812500
2000-02-03	140.000000	137.750000	145.750000	146.250000	144.500000	143.062500	145.000000	146.968704	145.812500	147.000000
2000-02-04	137.750000	145.750000	146.250000	144.500000	143.062500	145.000000	146.968704	145.812500	147.000000	144.750000
2000-02-07	145.750000	146.250000	144.500000	143.062500	145.000000	146.968704	145.812500	147.000000	144.750000	144.437500

Date	Next Day Close	Predicted Next Close
2010-12-22	125.599998	125.836080
2010-12-23	125.650002	125.883611
2010-12-27	125.830002	125.706853
2010-12-28	125.919998	125.839451
2010-12-29	125.720001	125.849771
2010-12-30	125.750000	125.750927
2010-12-31	127.050003	125.800584
2011-01-03	126.980003	127.002578
2011-01-04	127.639999	126.998705

Date	Next Day Close	Predicted Next Close	Current Day Close	Next Day Open
2010-12-22	125.599998	125.836080	125.779999	125.639999
2010-12-23	125.650002	125.883611	125.599998	125.129997
2010-12-27	125.830002	125.706853	125.650002	125.900002
2010-12-28	125.919998	125.839451	125.830002	125.980003
2010-12-29	125.720001	125.849771	125.919998	125.800003
2010-12-30	125.750000	125.750927	125.720001	125.529999
2010-12-31	127.050003	125.800584	125.750000	126.709999
2011-01-03	126.980003	127.002578	127.050003	127.330002
2011-01-04	127.639999	126.998705	126.980003	126.580002

Date	Next Day Close	Predicted Next Close	Current Day Close	Next Day Open	Signal	PnL
2010-12-22	125.599998	125.836080	125.779999	125.639999	1	-0.031838
2010-12-23	125.650002	125.883611	125.599998	125.129997	1	0.415571
2010-12-27	125.830002	125.706853	125.650002	125.900002	0	0.000000
2010-12-28	125.919998	125.839451	125.830002	125.980003	0	0.000000
2010-12-29	125.720001	125.849771	125.919998	125.800003	1	-0.063594
2010-12-30	125.750000	125.750927	125.720001	125.529999	1	0.175258
2010-12-31	127.050003	125.800584	125.750000	126.709999	0	0.000000
2011-01-03	126.980003	127.002578	127.050003	127.330002	0	0.000000
2011-01-04	127.639999	126.998705	126.980003	126.580002	1	0.837413

-7.410148620605469

45.95988464355469

Trades: 2000
Wins: 1084
Losses: 900
Breakeven: 16
Win/Loss Ratio 1.204
Mean Win: 0.461
Mean Loss: -0.518
Mean 0.017
Std Dev: 0.702
Max Loss: -4.196
Max Win: 3.683
Sharpe Ratio: 0.3789

```
Trades: 2000
Wins: 485
Losses: 407
Breakeven: 1108
Win/Loss Ratio 1.192
Mean Win: 0.481
Mean Loss: -0.579
Mean -0.001
Std Dev: 0.507
Max Loss: -4.088
Max Win: 3.683
Sharpe Ratio: -0.0401
```

```
-8.640205383300781
```

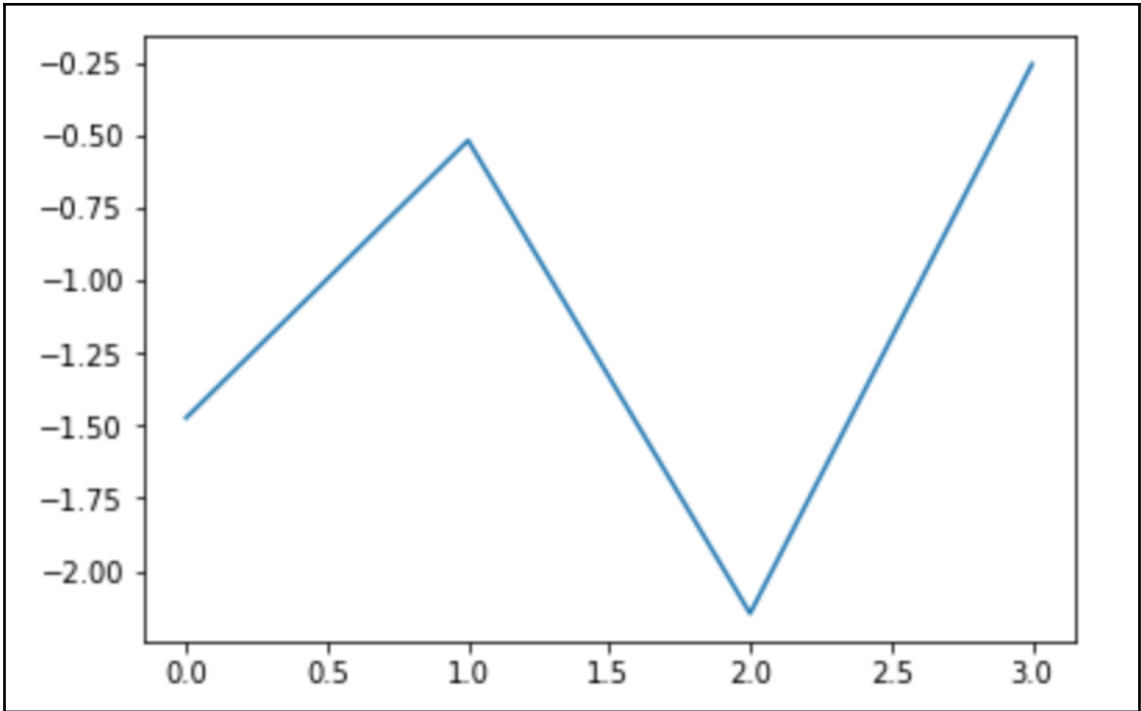
Trades: 2000
Wins: 98
Losses: 101
Breakeven: 1801
Win/Loss Ratio 0.97
Mean Win: 0.746
Mean Loss: -0.807
Mean -0.004
Std Dev: 0.338
Max Loss: -3.977
Max Win: 3.683
Sharpe Ratio: -0.1987

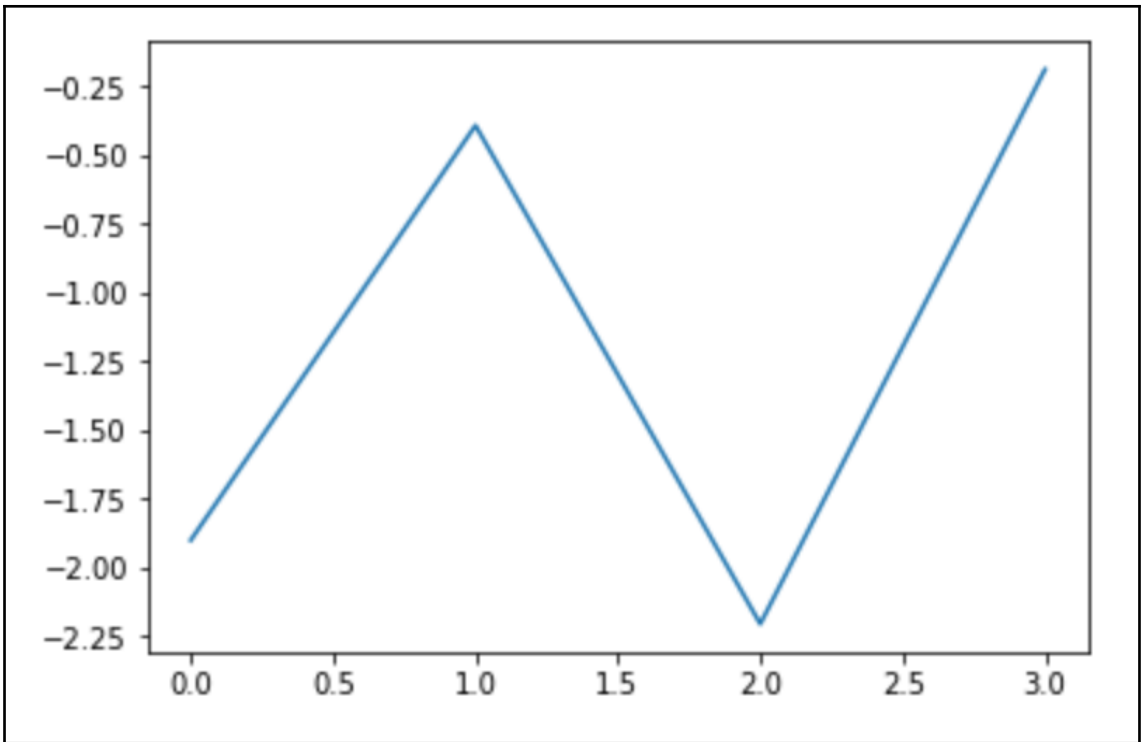
45.95988464355469

```
Trades: 1999
Wins: 985
Losses: 799
Breakeven: 215
Win/Loss Ratio 1.233
Mean Win: 0.433
Mean Loss: -0.481
Mean 0.021
Std Dev: 0.615
Max Loss: -4.196
Max Win: 3.594
Sharpe Ratio: 0.5387
```

```
(array([-3.91061453,  0.17889088, -1.60714286,  5.8076225 ]),
 0.34305317324185847)
```

	A	B	Dist	A Ret	B Ret
3868	4	69	0.778629	1.360843	-1.696072
3995	4	196	0.608376	1.360843	0.410596
4165	4	366	0.973192	1.360843	0.040522
4346	4	547	0.832545	1.360843	-1.447712
4447	4	648	0.548912	1.360843	-0.510458
4591	4	792	0.740197	1.360843	0.819056
4613	4	814	0.411795	1.360843	0.578720
4686	4	887	0.606986	1.360843	0.233613
6297	6	598	0.678315	1.180863	2.896685
6323	6	624	0.897109	1.180863	0.757222





```
Trades: 722
Wins: 435
Losses: 284
Breakeven: 3
Win/Loss Ratio 1.532
Mean Win: 0.564
Mean Loss: -0.603
Mean 0.103
Std Dev: 0.792
Max Loss: -3.591
Max Win: 3.454
Sharpe Ratio: 2.0628
```


Chapter 8: Classifying Images with Convolutional Neural Networks



```
array([[173, 176, 179, ..., 227, 229, 231],  
       [173, 174, 176, ..., 227, 228, 229],  
       [168, 173, 173, ..., 228, 228, 228],  
       ...,  
       [ 24,  26,  26, ...,  55,  52,  51],  
       [ 27,  25,  17, ...,  56,  53,  51],  
       [ 25,  26,  19, ...,  58,  55,  53]], dtype=uint8)
```

(1150, 1150)

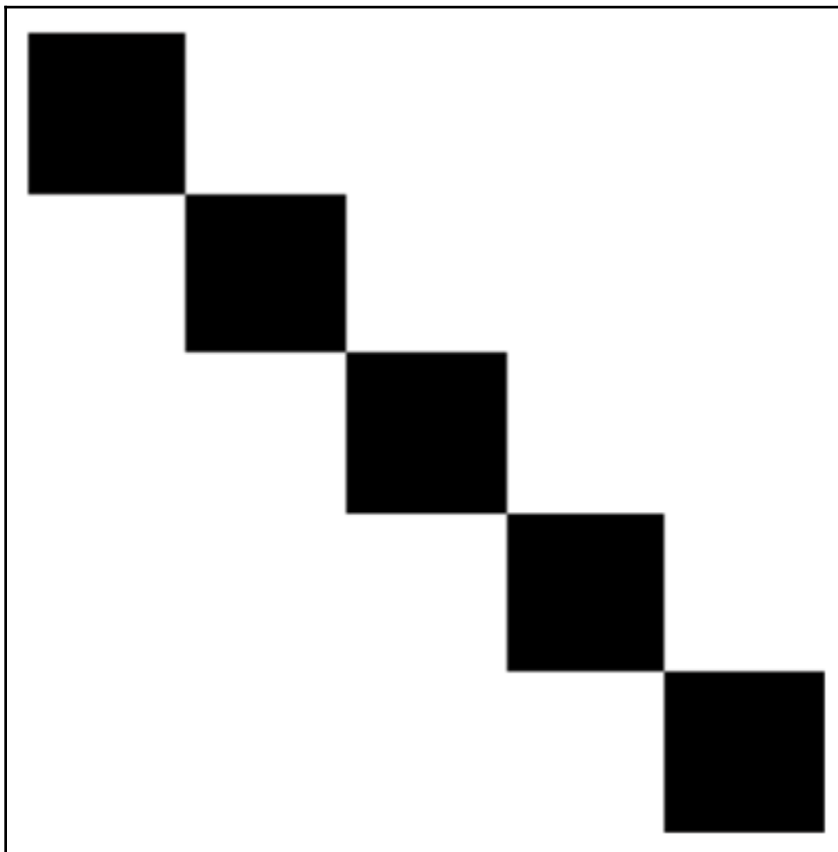
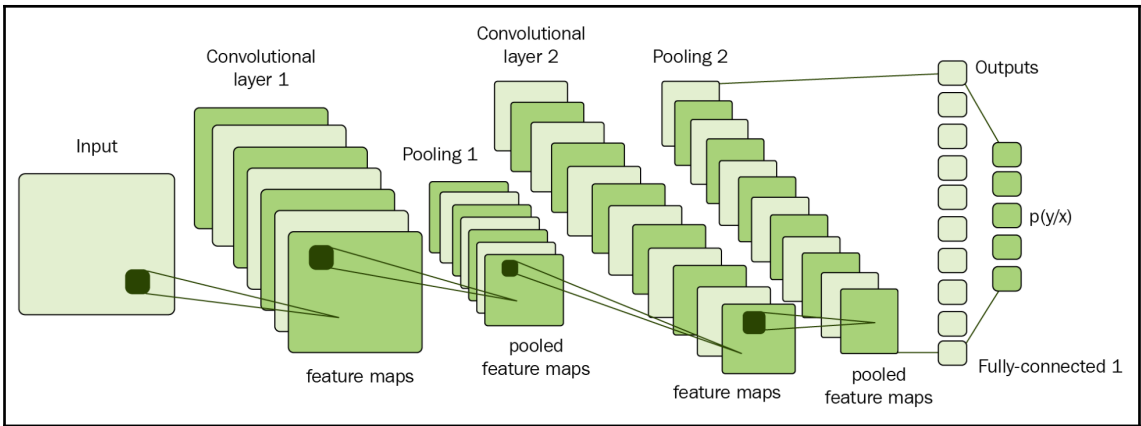
239
0



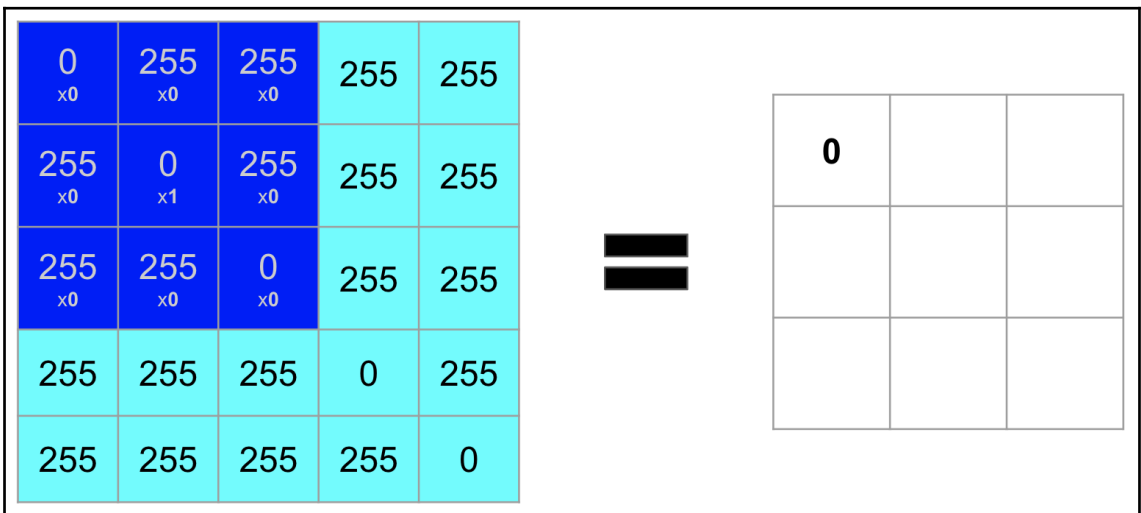
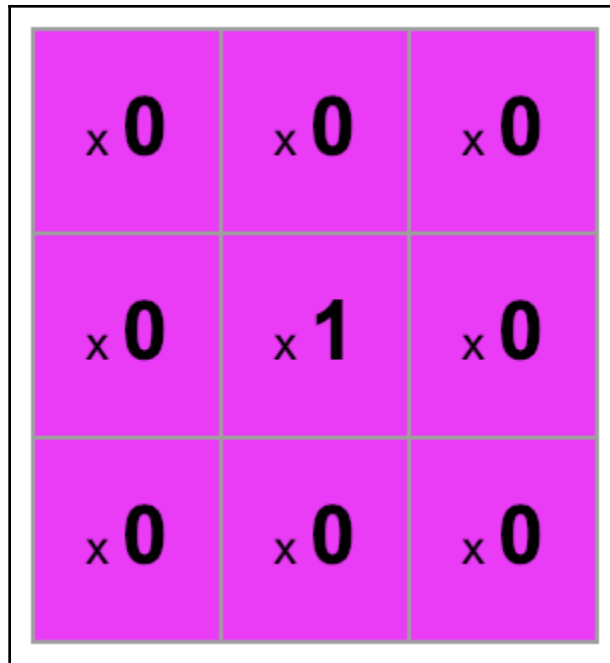


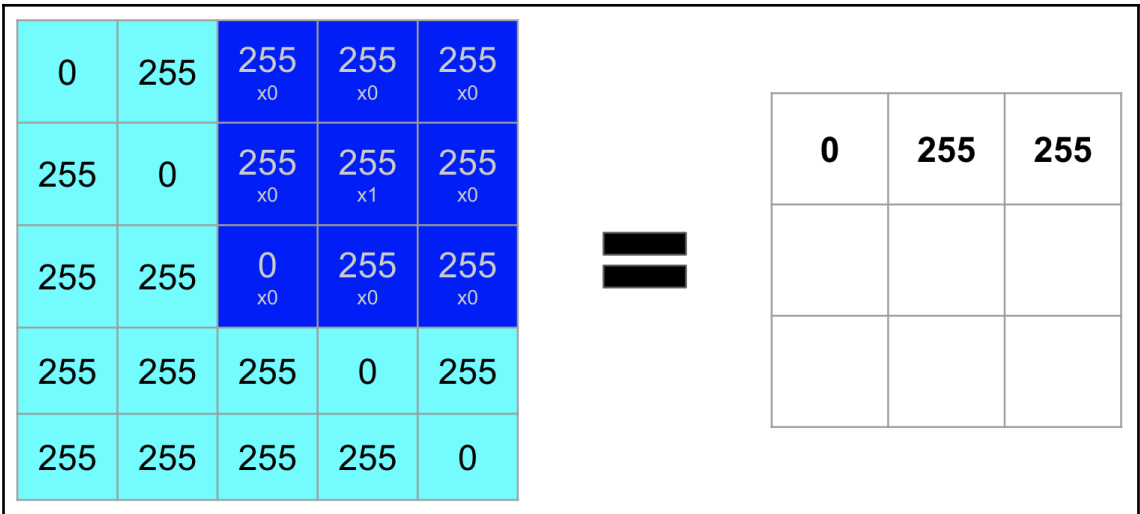
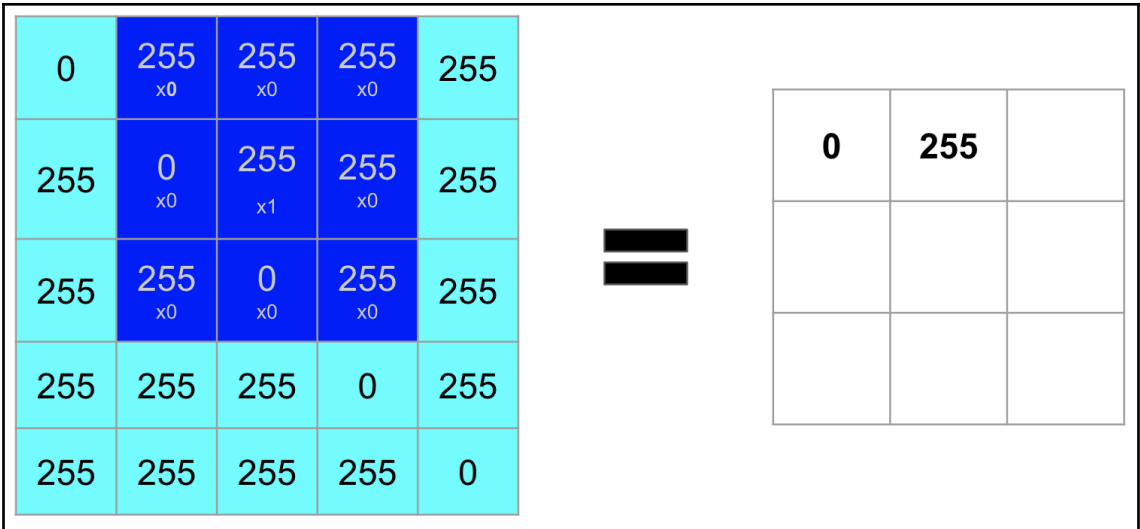
(1150, 1150, 3)

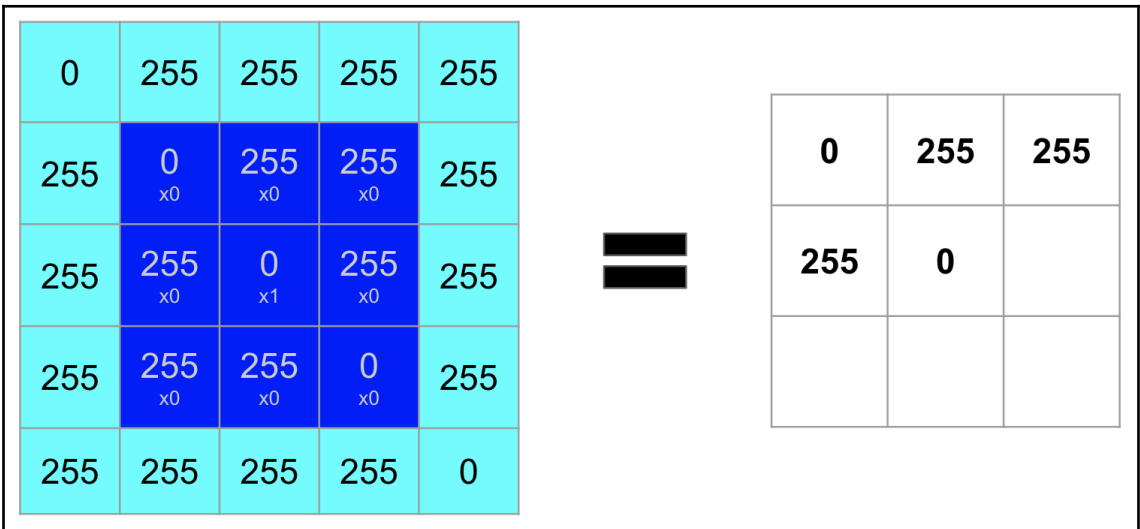
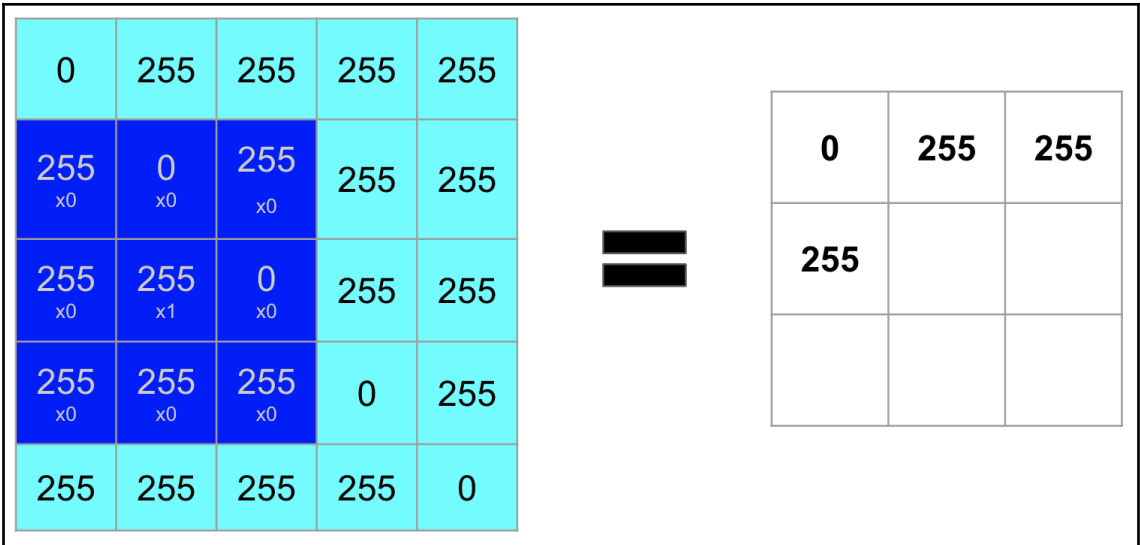


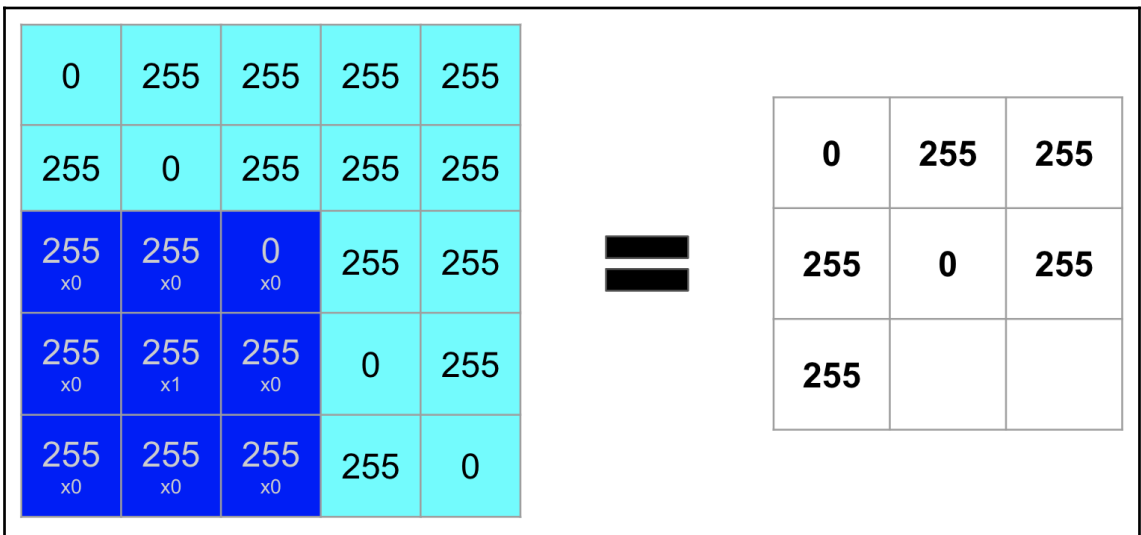
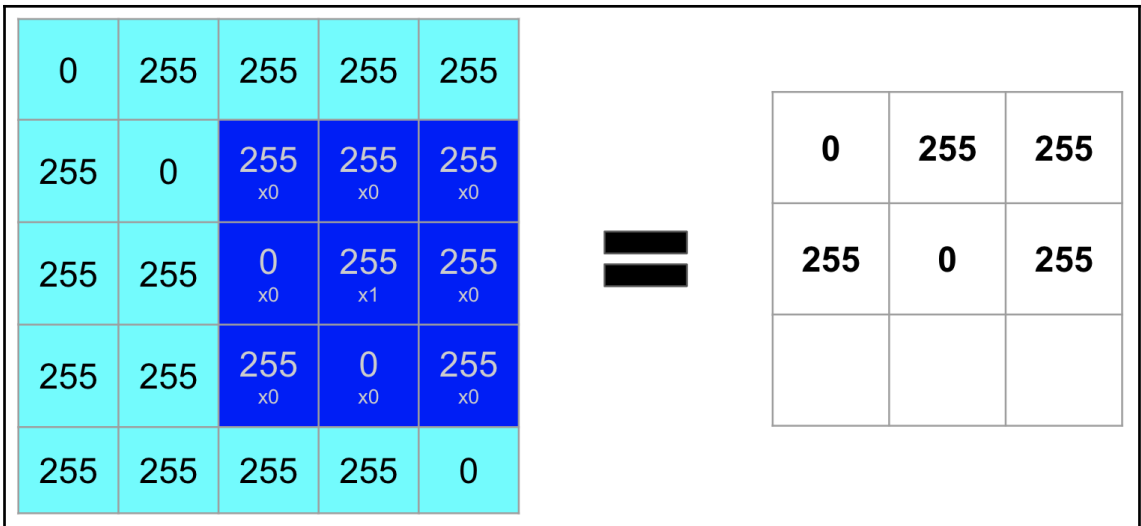


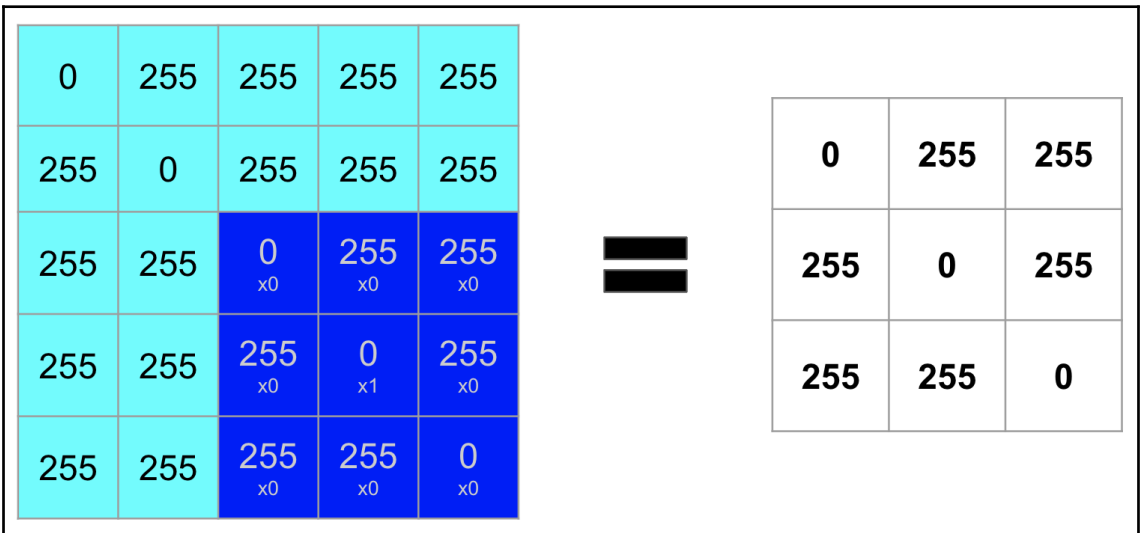
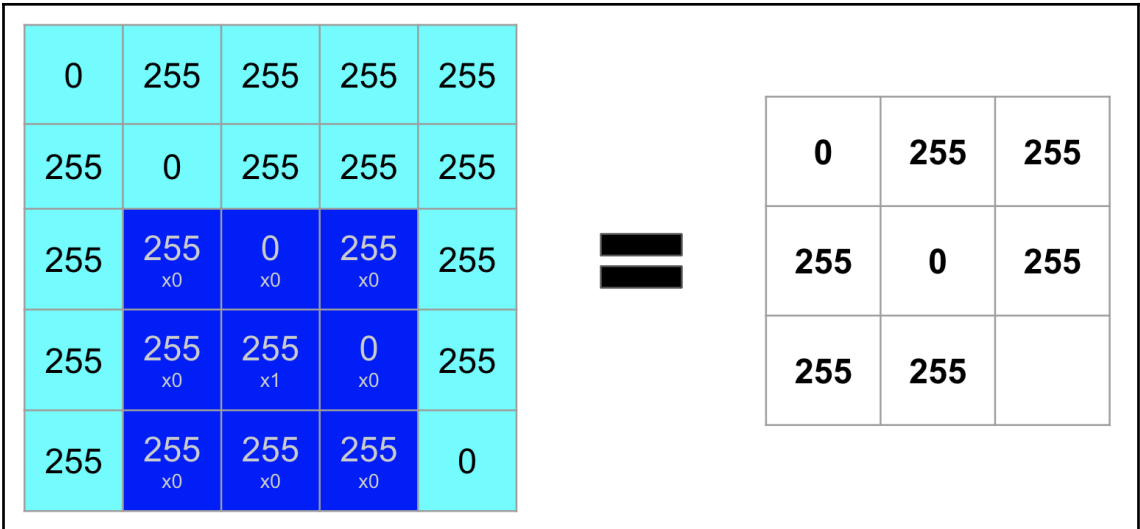
0	255	255	255	255
255	0	255	255	255
255	255	0	255	255
255	255	255	0	255
255	255	255	255	0

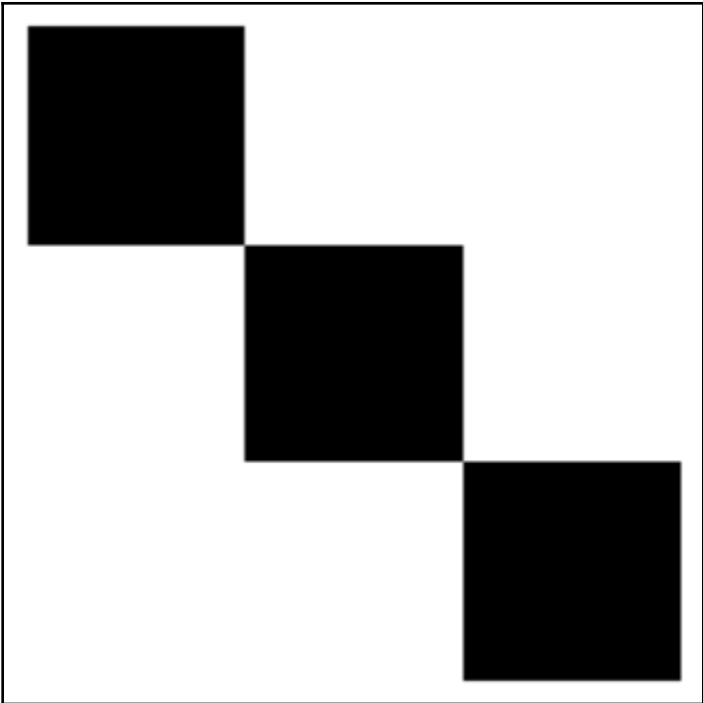


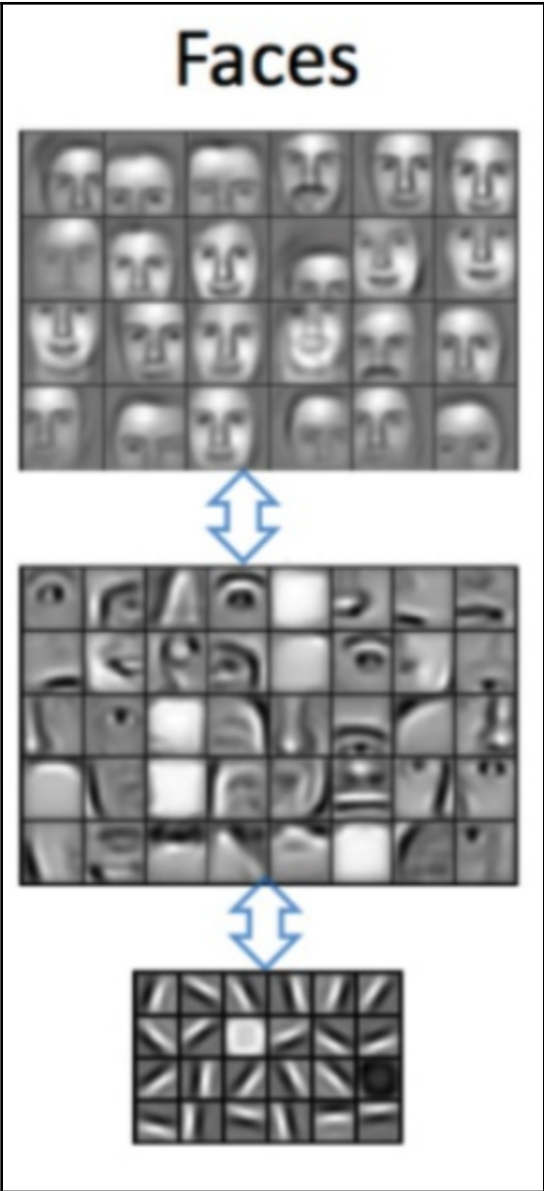




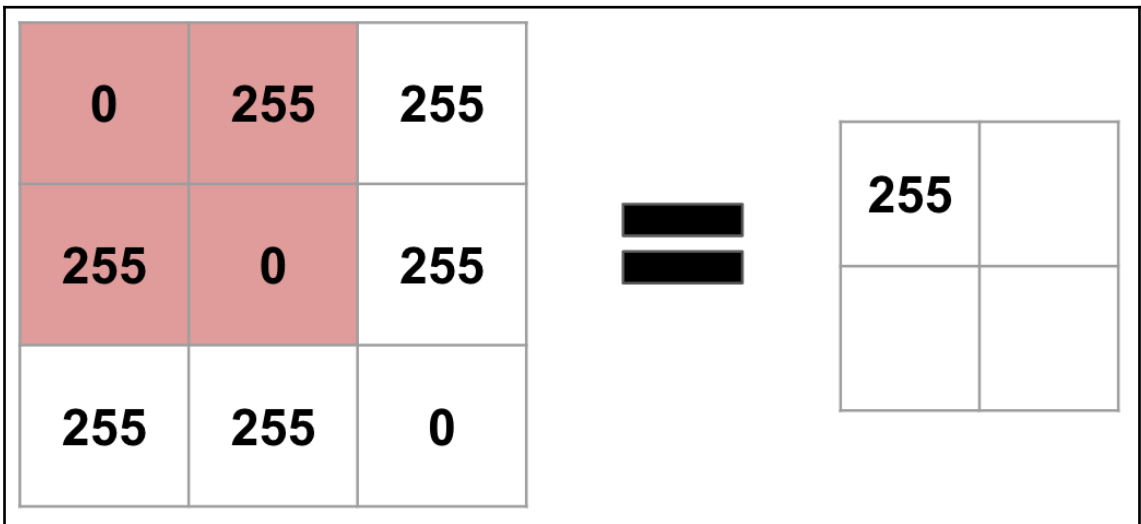


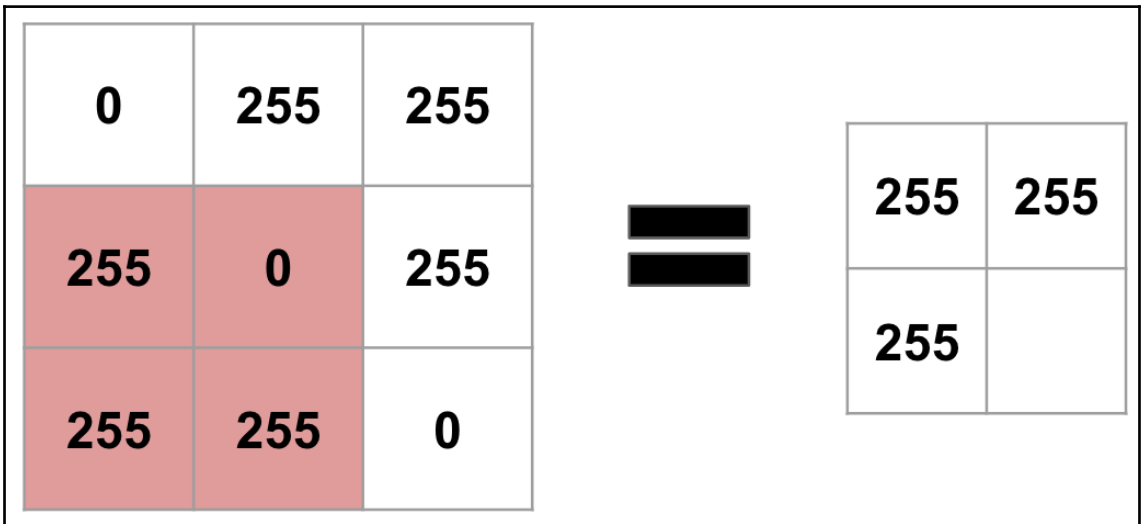
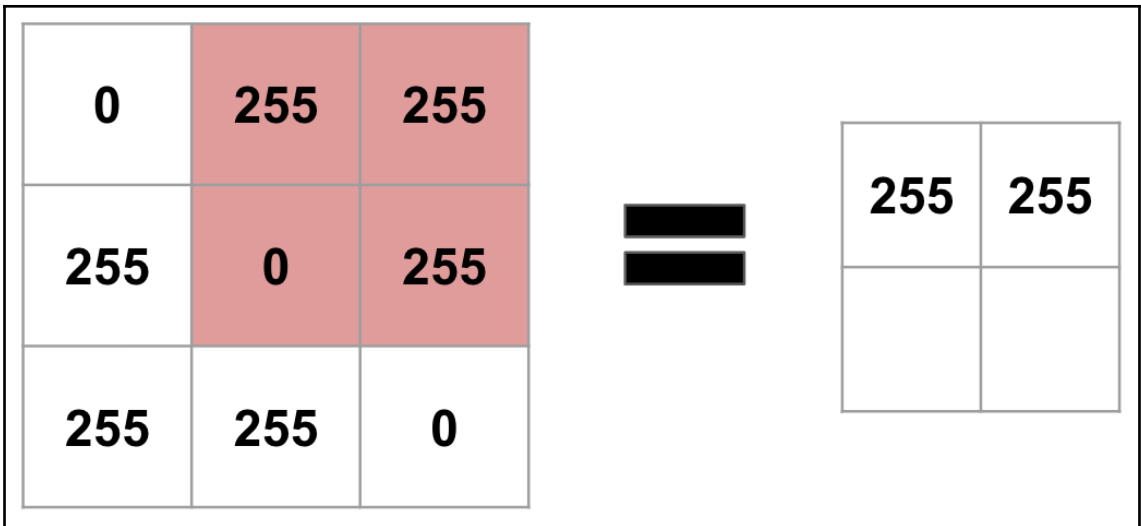


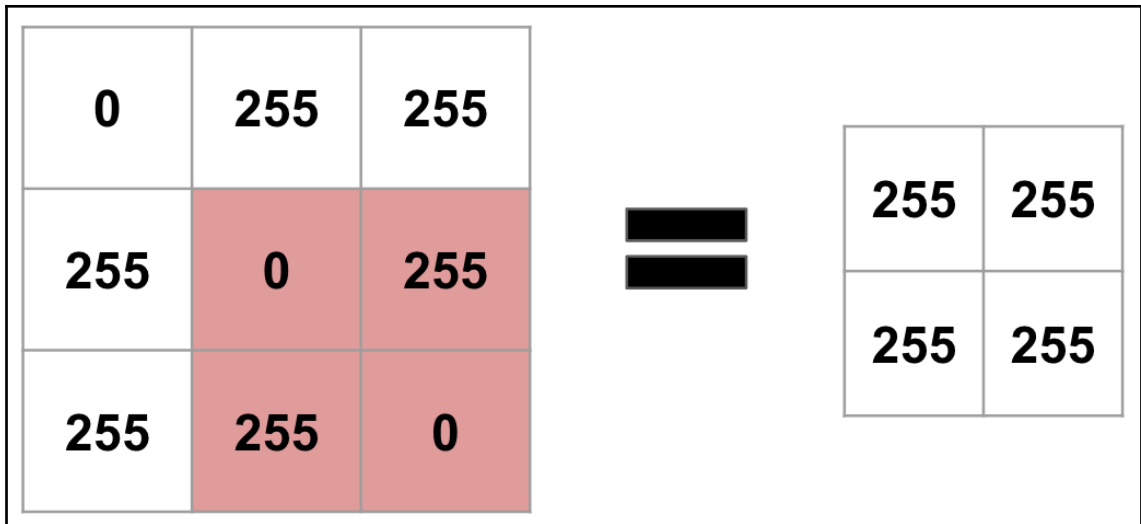




0	255	255
255	0	255
255	255	0







```
array([[255, 255],
       [255, 255]])
```

```
(2, 2)
```

```
(4, )
```

```
(60000, 784) (60000, )
(10000, 784) (10000, )
```

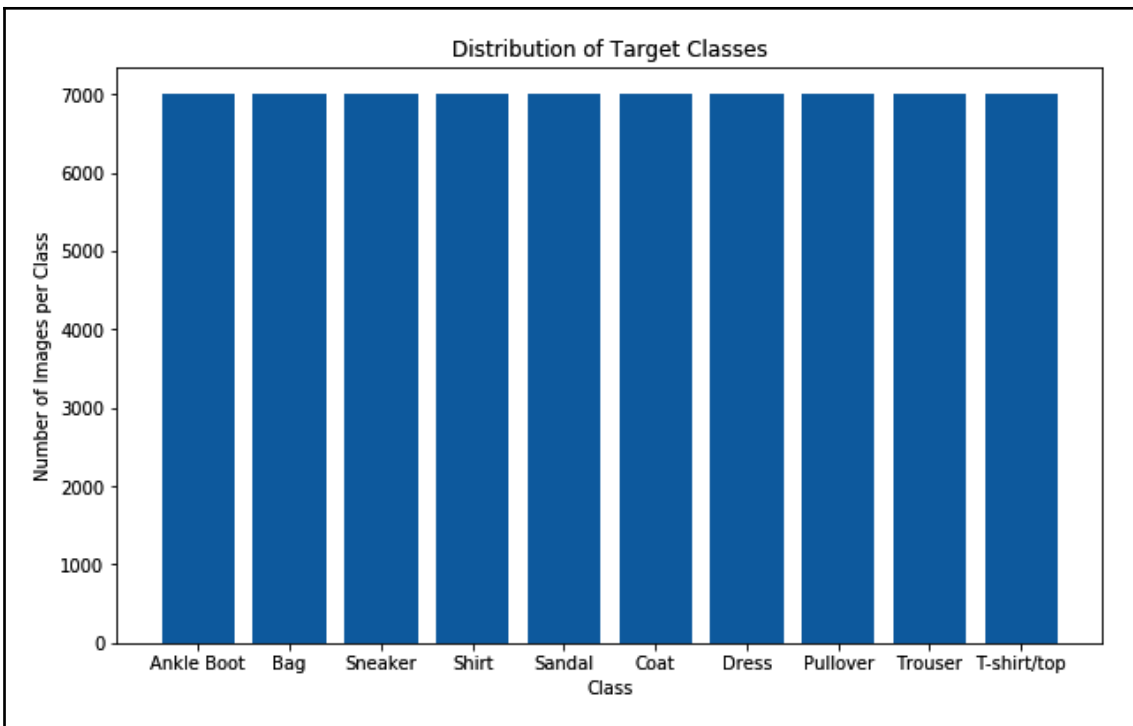
```
<class 'numpy.ndarray'>  
<class 'numpy.ndarray'>  
<class 'numpy.ndarray'>  
<class 'numpy.ndarray'>
```



9

Label	Description
0	T-shirt/top
1	Trouser
2	Pullover
3	Dress
4	Coat
5	Sandal
6	Shirt
7	Sneaker
8	Bag
9	Ankle boot

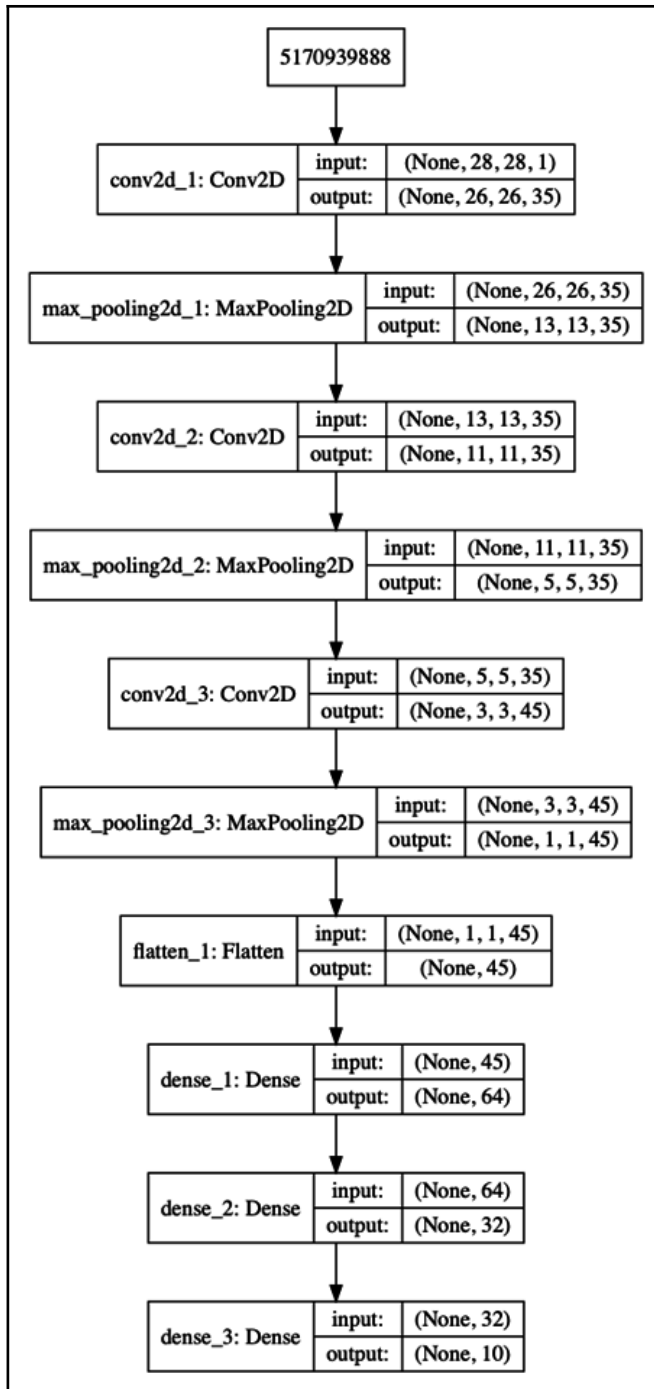


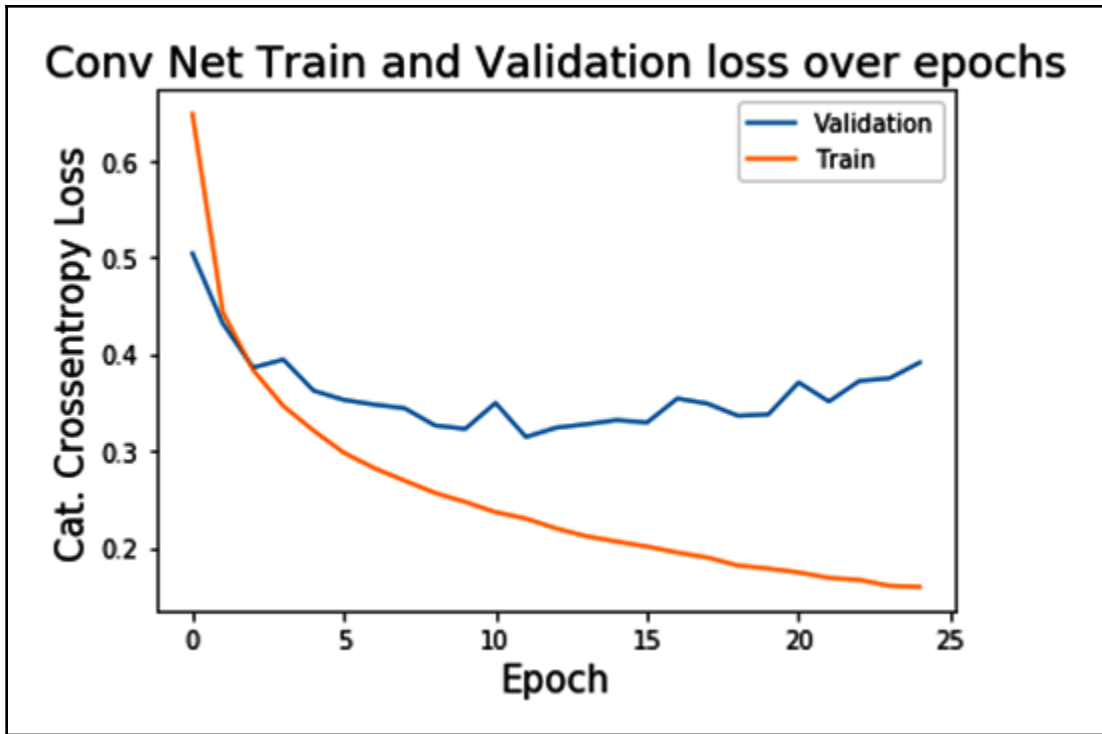


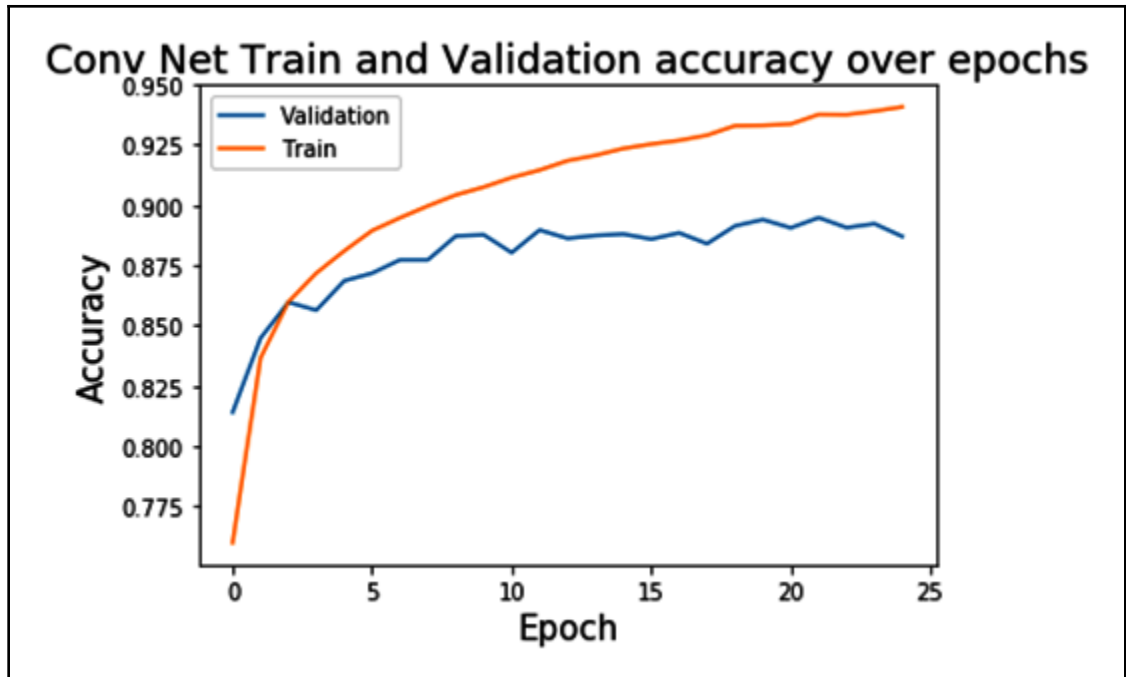
255
0
255
0

1.0
0.0
1.0
0.0

Layer (type)	Output Shape	Param #
conv2d_1 (Conv2D)	(None, 26, 26, 35)	350
max_pooling2d_1 (MaxPooling2)	(None, 13, 13, 35)	0
conv2d_2 (Conv2D)	(None, 11, 11, 35)	11060
max_pooling2d_2 (MaxPooling2)	(None, 5, 5, 35)	0
conv2d_3 (Conv2D)	(None, 3, 3, 45)	14220
max_pooling2d_3 (MaxPooling2)	(None, 1, 1, 45)	0
flatten_1 (Flatten)	(None, 45)	0
dense_1 (Dense)	(None, 64)	2944
dense_2 (Dense)	(None, 32)	2080
dense_3 (Dense)	(None, 10)	330
=====		
Total params: 30,984		
Trainable params: 30,984		
Non-trainable params: 0		



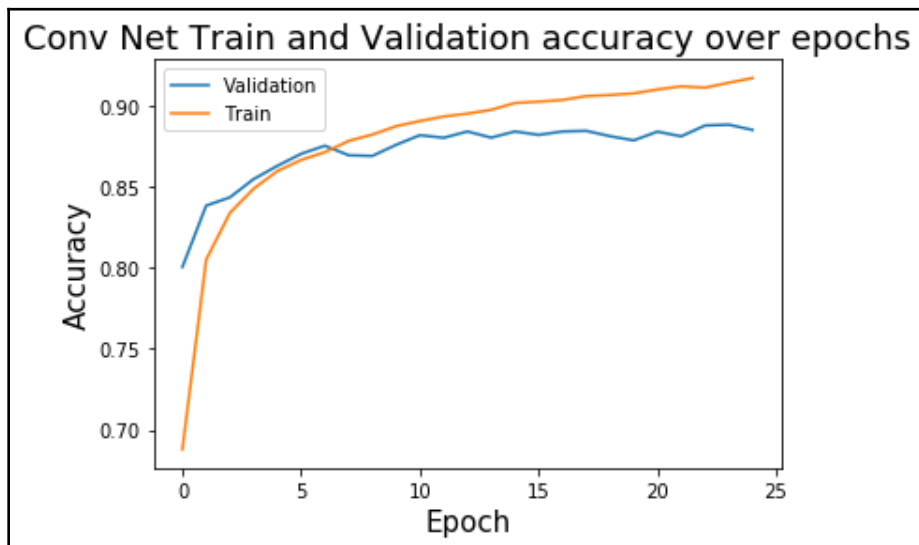
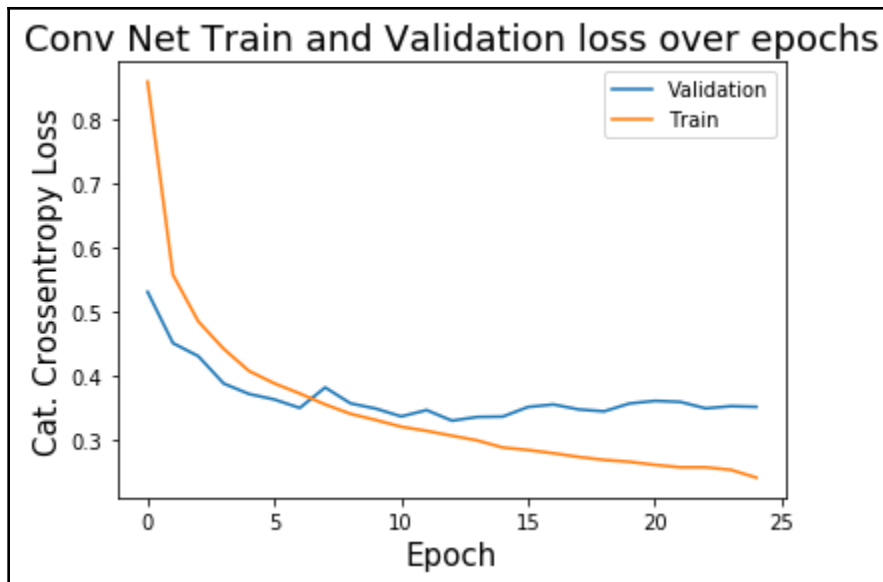




0.8948

21

Layer (type)	Output Shape	Param #
conv2d_1 (Conv2D)	(None, 26, 26, 35)	350
max_pooling2d_1 (MaxPooling2)	(None, 13, 13, 35)	0
conv2d_2 (Conv2D)	(None, 11, 11, 35)	11060
max_pooling2d_2 (MaxPooling2)	(None, 5, 5, 35)	0
conv2d_3 (Conv2D)	(None, 3, 3, 45)	14220
max_pooling2d_3 (MaxPooling2)	(None, 1, 1, 45)	0
flatten_1 (Flatten)	(None, 45)	0
dense_1 (Dense)	(None, 64)	2944
dropout_1 (Dropout)	(None, 64)	0
dense_2 (Dense)	(None, 32)	2080
dropout_2 (Dropout)	(None, 32)	0
dense_3 (Dense)	(None, 10)	330
=====		
Total params: 30,984		
Trainable params: 30,984		
Non-trainable params: 0		



0.8885
23

Chapter 9: Building a Chatbot



Cleverbot

17992 people talking

Nascar.

Do you like Nascar?

No.

Why not?

I like nashnash.

What are nawks?  share!


  

think about it


think for me


thoughts so far


Today


 **tacobot** BOT 2:44 PM
Order set for launch! ✨🍌🚀

Please confirm the final total: \$2.39 which includes all applicable taxes. You will pickup the goods at 12105 W Pico Blvd. If that sounds right, tell me to place the order!!!

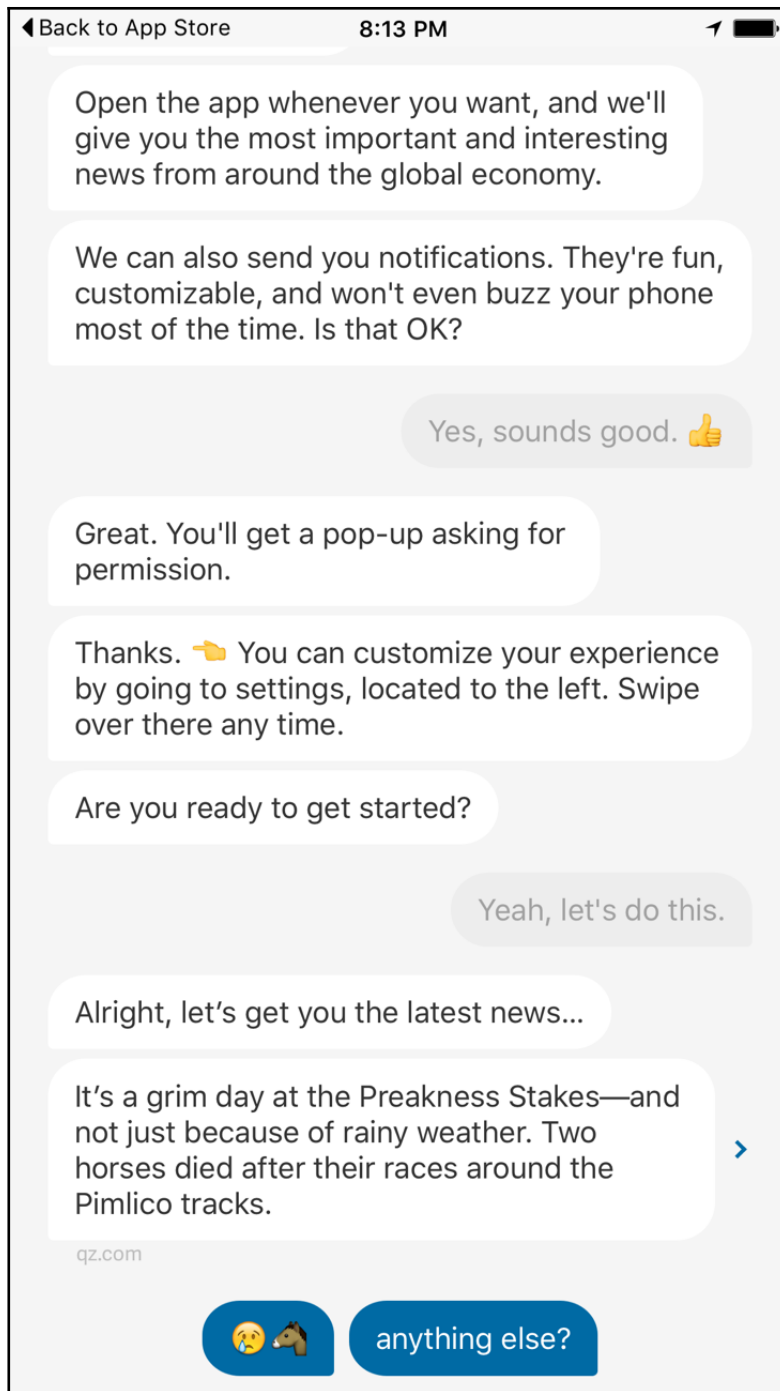
 **human** 2:44 PM
I like you

 **tacobot** BOT 2:44 PM
I don't have emotions but... I like you too I guess.

 **human** 2:44 PM
What came first, the chicken or the egg?

 **tacobot** BOT 2:44 PM
That's easy. You can't have a chicken unless it hatches from and egg so... But wait, hang on a sec... you can't have an egg unless it's laid by a.... ERROR ERROR LOGICAL PARADOX... REBOOTING....
Woah, sorry about that. All I know for sure is that both of them taste good when you wrap 'em in a tortilla.

+ 😊




```
# Natural Language Toolkit: Eliza
#
# Copyright (C) 2001-2019 NLTK Project
# Authors: Steven Bird <stevenbird1@gmail.com>
#         Edward Loper <edloper@gmail.com>
# URL: <http://nltk.org/>
# For license information, see LICENSE.TXT

# Based on an Eliza implementation by Joe Strout <joe@strout.net>,
# Jeff Epler <jepler@inetnebr.com> and Jez Higgins <mailto:jez@jezuk.co.uk>.

# a translation table used to convert things you say into things the
# computer says back, e.g. "I am" --> "you are"

from __future__ import print_function
from nltk.chat.util import Chat, reflections

# a table of response pairs, where each pair consists of a
# regular expression, and a list of possible responses,
# with group-macros labelled as %1, %2.
pairs = (
    (
        r'I need (.*)',
        (
            "Why do you need %1?",
            "Would it really help you to get %1?",
            "Are you sure you need %1?",
        ),
    ),
    (
        r'Why don\'t you (.*)',
        (
            "Do you really think I don't %1?",
            "Perhaps eventually I will %1.",
            "Do you really want me to %1?",
        ),
    ),
)
```

Human: *who is skywalker ?*

Machine: *he is a hero .*

Human: *who is bill clinton ?*

Machine: *he 's a billionaire .*

Human: *is sky blue or black ?*

Machine: *blue .*

Human: *does a cat have a tail ?*

Machine: *yes .*

Human: *does a cat have a wing ?*

Machine: *no*

Human: *can a cat fly ?*

Machine: *no .*

Human: *how many legs does a cat have ?*

Machine: *four , i think .*

Human: *what do you think about tesla ?*

Machine: *he 's a good conductor .*

Human: *what do you think about bill gates ?*

Machine: *he 's a good man .*

Human: *What do you think about messi ?*

Machine: *he 's a great player .*

Human: *what do you think about cleopatra ?*

Machine: *oh , she 's very regal .*

Human: *what do you think about england during the reign of elizabeth ?*

Machine: *it was a great place .*

Human: *what is the purpose of life ?*

Machine: *to serve the greater good .*

Human: *what is the purpose of living ?*

Machine: *to live forever .*

Human: *okay , i need to know how should i behave morally ...*

Machine: *i don 't know how to tell you .*

Human: *is morality and ethics the same ?*

Machine: *yes , sir .*

Human: *what are the things that i do to be immoral ?*

Machine: *i don 't know .*

Human: *give me some examples of moral actions ...*

Machine: *i 'm not a moralist .*

Human: *alright , morality ?*

Machine: *integrity .*

User: *lightsaber battle*.
Cleverbot: Luke I am your father.
User: *swings with lightsaber*.
Cleverbot: *Blocks* *Swings lightsaber*.
User: *blocks stabs with lightsaber*.
Cleverbot: *pushes back with the force*.
User: *pulls out gun*.
Cleverbot: *Pulls out nuke*.
User: *pulls out chuck norris*.
Cleverbot: *pulls out God*.
User: *pulls out universe*.
Cleverbot: *pulls out his mom*.
User: Mommy... *sobs*.
Cleverbot: *curls up and cries*.
User: *cuddles and cries*.
Cleverbot: *kisses neck softly*.
User: *cries more*.
Cleverbot: *kisses tears more*.
User: *cries even more*.
Cleverbot: *Whispers* It's ok.
User: *still sobs*.
Cleverbot: *snaps neck*.
User: WTF?!

	Posttinner link	Posttinner link_link	Time value	Up number	Image 1	Down number
0	User: *walking*\nCleverbot: *looks at you and winks* ;)\nUser: O.O *walks faster*\nCleverbot: *catches up with you and pins you against a wall*\nUser: *eyes widen* W-What do you want?\n\nCleverbot: ...	http://www.entsocleverbot.com/index.php?i=48277	Posted: 2016-04-18 04:30:53	21	http://www.entsocleverbot.com/images/thumbs_up.png	10
1	User: *Facepalm* You are so stupid, you know that, right?\n\nCleverbot: I cannot argue with you.\nUser: So you admit your idiocy.\n\nCleverbot: You're all and I am nothing.\nUser: Yess!!!\n\nCleverbot: ...	http://www.entsocleverbot.com/index.php?i=48275	Posted: 2016-04-16 22:39:34	32	http://www.entsocleverbot.com/images/thumbs_up.png	5
2	Cleverbot: Well, my wife left me today.\nUser: Feels bad for you.\n\nCleverbot: Not really, I have an amazing boyfriend :).	http://www.entsocleverbot.com/index.php?i=48256	Posted: 2016-04-09 04:49:46	13	http://www.entsocleverbot.com/images/thumbs_up.png	5

```

0      User: *walking*\nCleverbot: *looks at you and winks* ;)\nUser: O.O *walks faster*\nCleverbot: *catches up
with you and pins you against a wall*\nUser: *eyes widen* W-What do you want?\n\nCleverbot: ...
1      User: *Facepalm* You are so stupid, you know that, right?\n\nCleverbot: I cannot argue with you.\nUser: So y
ou admit your idiocy.\n\nCleverbot: You're all and I am nothing.\nUser: Yess!!!\n\nCleverbot: ...
2      Cleverbot: Well, my wife left
me today.\nUser: Feels bad for you.\n\nCleverbot: Not really, I have an amazing boyfriend :).
3      Cleverbot: *my dragongirl chest fills with dragon milk*.\nUser: WHAT THE ACTUAL FUC
K?!?!?\n\nCleverbot: *gives birth to dragon baby*\nUser: WHAT. THE. FUCK. HAPPENED. TO. CLEVERBOT.
4      Cleverbot: He'll have to sit and watch them al
1.\nUser: What the frick are you talking about.\n\nCleverbot: Something more pleasant than you!
5      Cleverbot: Give me a riddle.\nUser: What has a head but no body . has a bed but never sleeps . runs but ne
ver walks.\n\nCleverbot: What? I don't know.\nUser: A river.\n\nCleverbot: A river is not a fl...
6      User: I'm commander shepard.\n\nCleverbot: Really?\nUser: Yupp.\n\nCleverbot: That's nice. Can I meet your fri
end?\nUser: Garrus or Tali.\n\nCleverbot: Garrus because he is more impressive.\nUser: Okay ...
7      Cleverbot: Never gonna give you up.\nUser: No, please no.\n\nCleverbot: Never gonna tell a lie and hurt yo

```

	q	a
0	*walking*	*looks at you and winks* ;)
1	*looks at you and winks* ;)	O.O *walks faster*
2	O.O *walks faster*	*catches up with you and pins you against a wall*
3	*catches up with you and pins you against a wall*	*eyes widen* W-What do you want?
4	*eyes widen* W-What do you want?	Your mom.
5	*Facepalm* You are so stupid, you know that, right?	I cannot argue with you.
6	I cannot argue with you.	So you admit your idiocy.
7	So you admit your idiocy.	You're all and I am nothing.

```

19522      0.638891
70033      0.537884
51408      0.531098
20291      0.528135
62947      0.460475
dtype: float64

```

```

19522      Hi my name is Cleverbot.
70033      Okay your name is Alex.
51408              Hi my name is pat
20291              Hi my name is lune.
62947              My name is P.J.
Name: q, dtype: object

```

'Are you clever or something.'

'No you are not.'

'Right you are.'

'No, I had nachos'

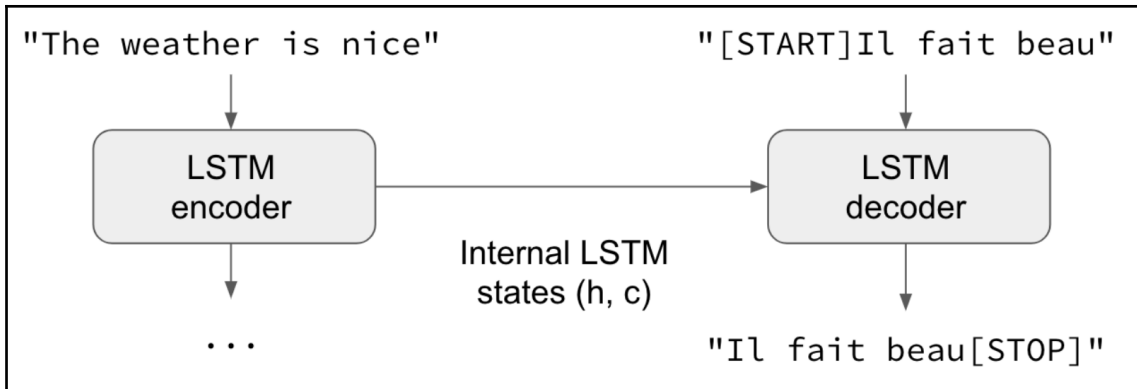
'Apples.'

'I also like talking to you.'

'I like your randomness.'

'Yes your random.'

'DONT CORRECT ME!'



```
[ '*walking*',
  '*looks at you and winks* ;)',
  'O.O *walks faster*',
  '*catches up with you and pins you against a wall*',
  '*eyes widen* W-What do you want?',
  '*Facepalm* You are so stupid, you know that, right?',
  'I cannot argue with you.',
  'So you admit your idiocy.',
  "You're all and I am nothing.",
  'Yess!!!',
```

```
[\t*looks at you and winks* ;)\n',
  \tO.O *walks faster*\n',
  \t*catches up with you and pins you against a wall*\n',
  \t*eyes widen* W-What do you want?\n',
  \tYour mom.\n',
  \tI cannot argue with you.\n',
  \tSo you admit your idiocy.\n',
  \tYou're all and I am nothing.\n",
  \tYess!!!\n',
  \tYes.\n',
  \tFeels bad for you.\n',
```

{ ' ' ,
' ! ' ,
' " ' ,
' # ' ,
' \$ ' ,
' % ' ,
' & ' ,
" " ,
' (' ,
') ' ,
' * ' ,
' + ' ,
' , ' ,
' - ' ,
' . ' ,
' / ' ,

```
{ '\t',  
  '\n',  
  ' ',  
  '!',  
  '"',  
  '#',  
  '$',  
  '%',  
  '&',  
  '"',  
  '(',  
  ')',  
  '*',  
  '+',  
  ',',  
  '-',  
  '.'
```

```
Number of samples: 1000
Number of unique input tokens: 383
Number of unique output tokens: 362
Max sequence length for inputs: 49
Max sequence length for outputs: 51
```

```
array([[ [1., 0., 0., ..., 0., 0., 0.],
         [0., 0., 0., ..., 0., 0., 0.],
         [0., 0., 0., ..., 0., 0., 0.],
         ...,
         [0., 0., 0., ..., 0., 0., 0.],
         [0., 0., 0., ..., 0., 0., 0.],
         [0., 0., 0., ..., 0., 0., 0.] ],
       [ [1., 0., 0., ..., 0., 0., 0.],
         [0., 0., 0., ..., 0., 0., 0.],
         [0., 0., 0., ..., 0., 0., 0.] ],
```

```
Train on 800 samples, validate on 200 samples
Epoch 1/100
800/800 [=====] - 12s 16ms/step - loss: 1.7601 - val_loss: 1.4434
Epoch 2/100
800/800 [=====] - 11s 13ms/step - loss: 1.4279 - val_loss: 1.4251
Epoch 3/100
800/800 [=====] - 10s 13ms/step - loss: 1.4096 - val_loss: 1.4195
Epoch 4/100
800/800 [=====] - 10s 13ms/step - loss: 1.3994 - val_loss: 1.4078
Epoch 5/100
800/800 [=====] - 10s 13ms/step - loss: 1.3914 - val_loss: 1.4038
Epoch 6/100
800/800 [=====] - 10s 13ms/step - loss: 1.3841 - val_loss: 1.3981
Epoch 7/100
800/800 [=====] - 11s 14ms/step - loss: 1.3784 - val_loss: 1.3855
Epoch 8/100
800/800 [=====] - 11s 14ms/step - loss: 1.3752 - val_loss: 1.3921
```

Input sentence: *eyes widen* W-What do you want?

Decoded sentence: *sings at you and bont*.

-

Input sentence: I cannot argue with you.

Decoded sentence: I don't know.

-

Input sentence: So you admit your idiocy.

Decoded sentence: I don't know.

-

Input sentence: You're all and I am nothing.

Decoded sentence: I don't know.

-

Input sentence: Yess!!!

Decoded sentence: *sings at you and bors*.

Input sentence: * Summon Soul Eater eat your soul *
Decoded sentence: You are a wasting you.

Input sentence: *hugs*
Decoded sentence: *stops crying*.

Input sentence: *catches up with you and pins you against a wall*
Decoded sentence: *eyes widen* W-What do you want?

Input sentence: So you admit your idiocy.
Decoded sentence: I didn't say that. You are being difficult again.

Input sentence: *knocks you out*
Decoded sentence: You are weird.

Input sentence: I'm a potato.
Decoded sentence: Yes you are.

Chapter 10: Build a Recommendation Engine

```
array([[ 0.18353259]])
```

```
array([[ 0.88527041]])
```

```
array([[ 0.30772873]])
```

```
array([[ -0.24618298]])
```

```
array([[ 0.42447212]])
```

```
array([[ 0.46571861]])
```

Settings / Developer settings

OAuth Apps	Personal access tokens Generate new token
GitHub Apps	
Personal access tokens	

Need an API token for scripts or testing? [Generate a personal access token](#) for quick access to the [GitHub API](#).

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

```
[ 'https://github.com/alash3al/sqler',  
  'https://github.com/ecthros/uncaptcha2',  
  'https://github.com/yyx990803/build-your-own-mint',  
  'https://github.com/trekhleb/homemade-machine-learning',  
  'https://github.com/soumith/dcgan.torch',  
  'https://github.com/minimaxir/textgenrnn',  
  'https://github.com/kingkool68/generate-ssl-certs-for-local-development',  
  'https://github.com/enochtangg/quick-SQL-cheatsheet',  
  'https://github.com/remicnrd/ml_cheatsheet',  
  'https://github.com/mwouts/jupytertext',  
  'https://github.com/seandavi/SRAdb',  
  'https://github.com/chubin/cheat.sh',  
  'https://github.com/madchops1/Dutchess.ai',  
  'https://github.com/alopresto/slides',  
  'https://github.com/Azure/mmlspark',  
  'https://github.com/zotroneneis/machine_learning_basics',  
  'https://github.com/ipython-contrib/jupyter_contrib_nbextensions',  
  'https://github.com/Esri/spatial-framework-for-hadoop',
```



```
[ 'alash3al',  
  'ecthros',  
  'yyx990803',  
  'trekhleb',  
  'soumith',  
  'minimaxir',  
  'kingkool68',  
  'enochtangg',  
  'remicnrd',  
  'mwouts',  
  'seandavi',  
  'chubin',  
  'madchops1',  
  'alopresto',  
  'Azure',  
  'zotroneneis',  
  'ipython-contrib',  
  'Esri',
```

```
Charging-Atot  
amontalenti  
kingkool68  
jorisvandenbossche  
alexgreene  
tweepy  
cchi  
kilimchoi  
prompt-toolkit  
jostmey  
matplotlib  
d3  
rhiever  
elastic  
mahmoudparsian  
ecthros  
linkedin  
mit-nlp
```

```
27098
```

	https://github.com/sebpiq/rhizome	https://github.com/googleapis/google-cloud-python	https://github.com/taichino/croniter
Charging-Alot	0	0	0
amontalenti	0	0	0
kingkool68	0	0	0
jorisvandenbossche	0	0	0
alexgreene	0	0	0
tweepy	0	0	0
cchi	0	0	0
kilimchoi	0	0	0
prompt-toolkit	0	0	0
jostmey	0	0	0

	0	1	2	3	4	5	6	7	8	9	...	27088	27089	27090	27091	27092	27093	27094	27095	27096	27097	
acombs	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0	0	0	0	0

JohnSnowLabs	0	0	0
ipython-contrib	0	0	0
sandialabs	0	0	0
sqlitebrowser	0	0	0
jundongl	0	0	0
learnbyexample	0	0	0
altair-viz	0	0	0
hortonworks-gallery	0	0	0
Azure	0	0	0
acombs	0	0	0

similarity	
0	NaN
1	0.045831
2	-0.002590
3	0.089009
4	0.018741
5	NaN
6	0.154673
7	0.010973
8	NaN
9	0.024107

similarity	
159	1.000000
6	0.154673
42	0.133273
116	0.119926
118	0.113706
103	0.105356
37	0.094806
3	0.089009
12	0.086880
145	0.085535

'cchi'



Charles Chi
cchi

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The profile picture is a stylized black and white graphic. It features two interlocking gears. The larger gear on the right contains the word 'Chi' in a serif font. The smaller gear on the left contains the letter 'C'. Above the gears is a silhouette of a bird with a long, curved beak, and a single drop is falling from the top gear.

```

https://github.com/hangtwenty/dive-into-machine-learning 1
https://github.com/doximity/vital 1
https://github.com/numenta/nupic 1
https://github.com/chaconnewu/free-data-science-books 1
https://github.com/johnmyleswhite/ML_for_Hackers 1
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```

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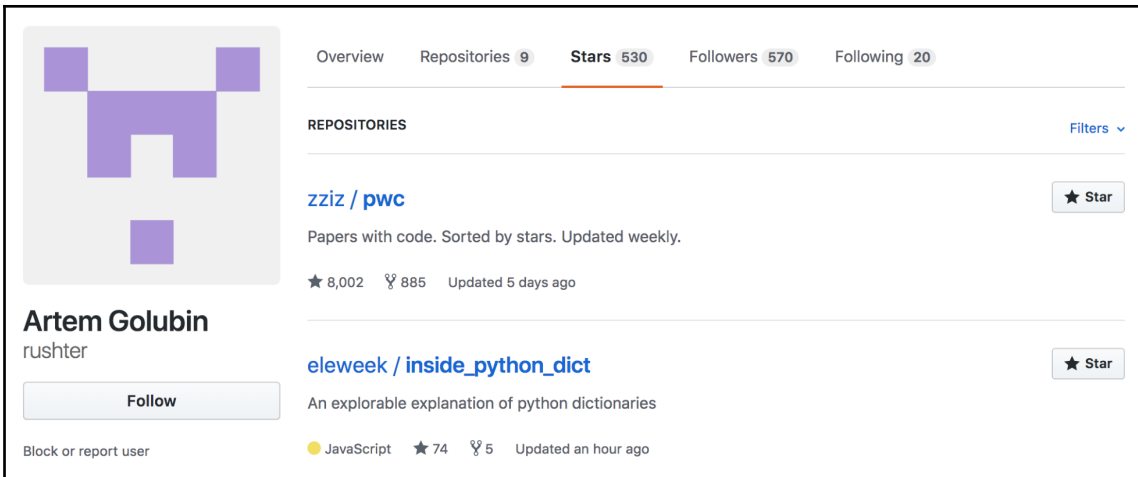


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https://github.com/taichino/croniter	0	0	0	0
https://github.com/PhrozenByte/rmtrash	0	0	0	0
https://github.com/LeCoupa/awesome-cheatsheets	0	0	0	0
https://github.com/chrischoy/3D-R2N2	0	0	0	0
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https://github.com/mickelindahl/progress-barjs	0	0	0	0

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https://github.com/hangtwenty/dive-into-machine-learning	1.0	1.0	1.0	1.0
https://github.com/scikit-learn/scikit-learn	1.0	1.0	1.0	1.0
https://github.com/josephmisiti/awesome-machine-learning	1.0	1.0	1.0	1.0

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	total
https://github.com/kjw0612/awesome-rnn	2.0
https://github.com/airbnb/aerosolve	2.0
https://github.com/apache/predictionio	2.0
https://github.com/seatgeek/fuzzywuzzy	2.0
https://github.com/blue-yonder/tsfresh	2.0
https://github.com/DataScienceSpecialization/courses	2.0
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https://github.com/numenta/nupic	2.0
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