DSC640 Week 1 & 2 Assignment

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You need to submit 3 bar charts, 3 stacked bar charts, 3 pie charts, and 3 donut charts using Tableau or PowerBI, Python and R using the data from the link below (the link will download a zipped folder containing three data files.) You may also use your own datasets if you wish. You can also submit using D3 if you choose – but it is not required.

```
In [2]:  import os
         import pandas as pd
         from pandas import ExcelWriter
         from pandas import ExcelFile
         import matplotlib as mpl
         import matplotlib.pyplot as plt
         %matplotlib inline
```

```
In [3]:  os.getcwd()
```

```
Out[3]:  '/Users/Cindy/Desktop/00 data640/Week 1-2'
```

Load data into dataframe

```
In [8]:  obama = pd.read_excel('/Users/Cindy/Desktop/00 data640/Week 1-2/obama-
         approval-ratings.xls')
```

Check the dimension of table and view data

```
In [10]:  print("The dimension of the table is: ", obama.shape)

          # Examine data
          print(obama)
```

```
The dimension of the table is:  (13, 4)
                          Issue  Approve  Disapprove  None
0               Race Relations       52          38    10
1                    Education       49          40    11
2                     Terrorism       48          45     7
3                 Energy Policy       47          42    11
4                Foreign Affairs       44          48     8
5                   Environment       43          51     6
6             Situation in Iraq       41          53     6
7                         Taxes       41          54     5
8             Healthcare Policy       40          57     3
9                       Economy       38          59     3
10      Situation in Afghanistan       36          57     7
11        Federal Budget Deficit       31          64     5
12                   Immigration       29          62     9
```
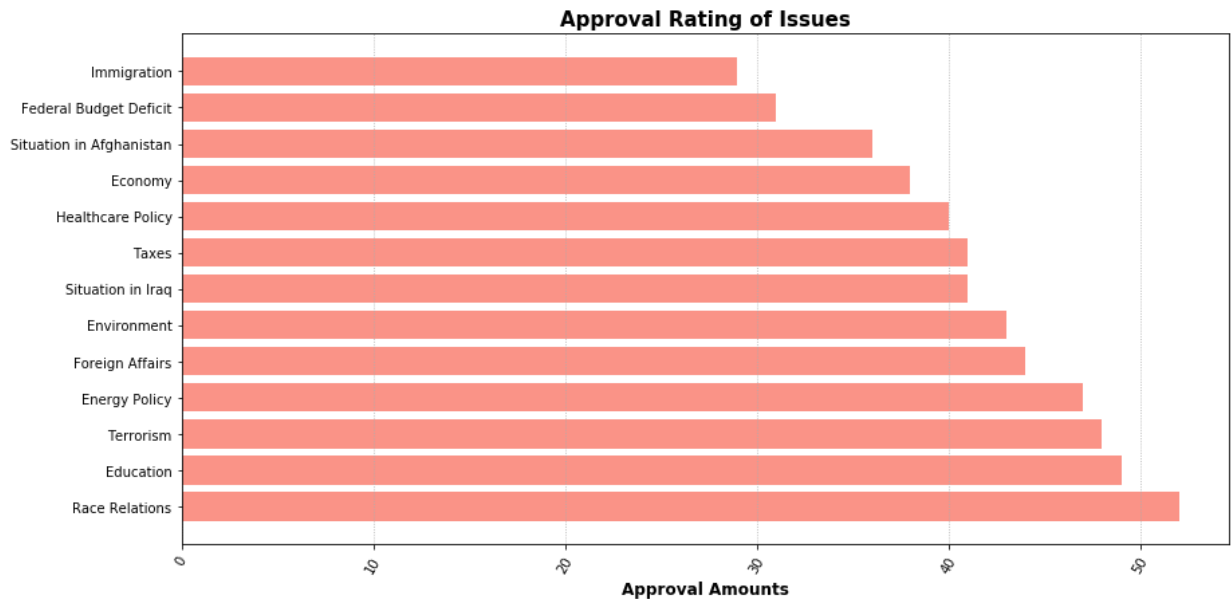
```
In [11]:  obama.head()
```

Out[11]:

	Issue	Approve	Disapprove	None
0	Race Relations	52	38	10
1	Education	49	40	11
2	Terrorism	48	45	7
3	Energy Policy	47	42	11
4	Foreign Affairs	44	48	8

Bar Chart

In [12]:
```python
fig = plt.figure(figsize=(14,7))

plt.barh(obama.Issue, obama.Approve, color = 'salmon', alpha = 0.85)
plt.title('Approval Rating of Issues', fontsize = 15, weight = 'bold')
plt.xticks(rotation=60)
plt.xlabel('Approval Amounts', fontsize = 12, weight = 'bold')
plt.gca().xaxis.grid(linestyle=':')
plt.show()
```
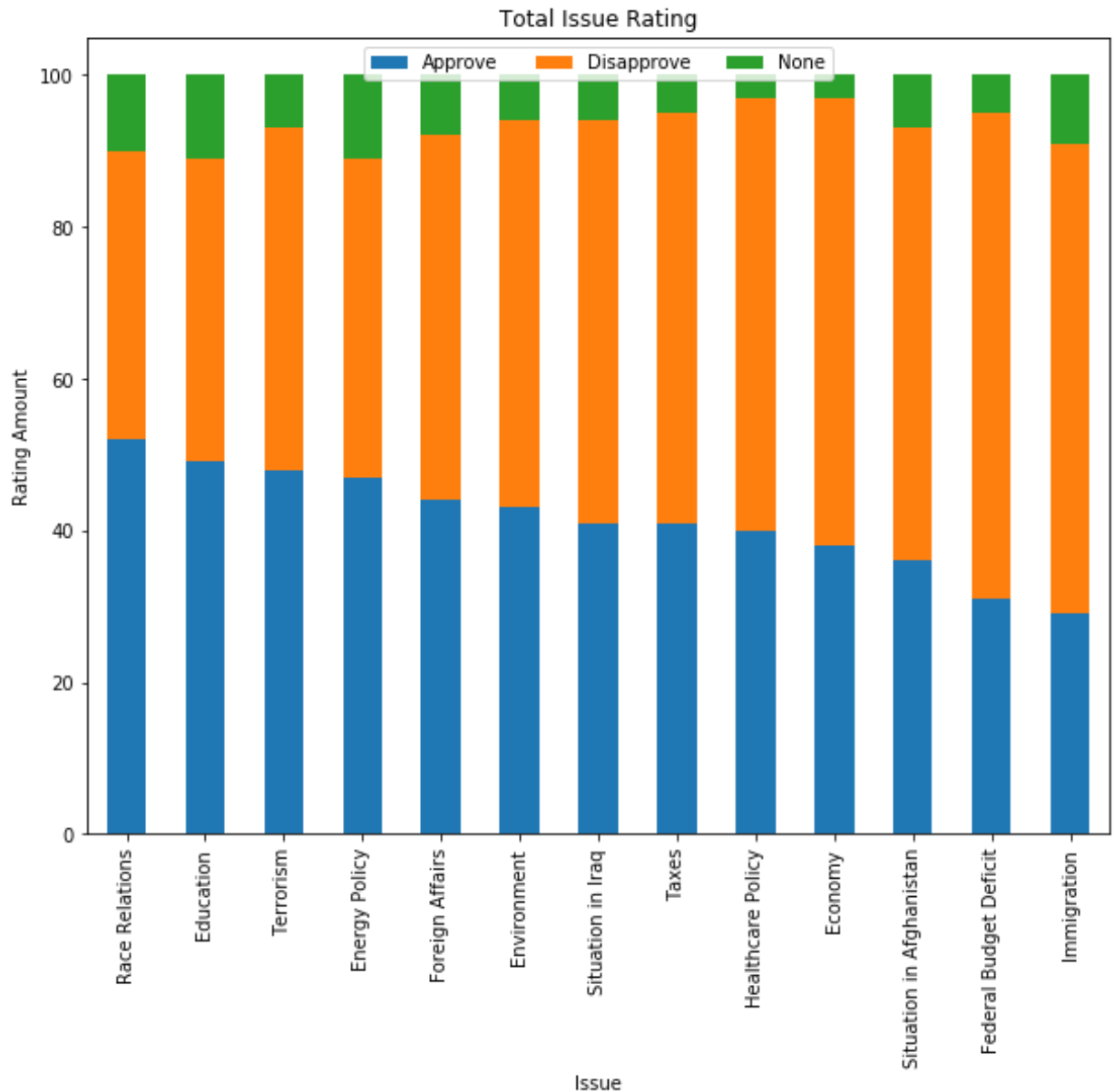

Stacked Bar Chart

```
In [16]: obama2 = pd.read_excel('/Users/Cindy/Desktop/00 data640/Week 1-2/obama
         -approval-ratings.xls', index_col=0)
         obama2
```

Out[16]:

	Approve	Disapprove	None
Issue			
Race Relations	52	38	10
Education	49	40	11
Terrorism	48	45	7
Energy Policy	47	42	11
Foreign Affairs	44	48	8
Environment	43	51	6
Situation in Iraq	41	53	6
Taxes	41	54	5
Healthcare Policy	40	57	3
Economy	38	59	3
Situation in Afghanistan	36	57	7
Federal Budget Deficit	31	64	5
Immigration	29	62	9

```
In [17]: my_plot = obama2.plot.bar(stacked=True, title="Total Issue Rating", fi
         gsize=(10,8))
         my_plot.set_xlabel("Issue")
         my_plot.set_ylabel("Rating Amount")
         my_plot.legend(["Approve", "Disapprove", "None"], loc=9,ncol=4)
```

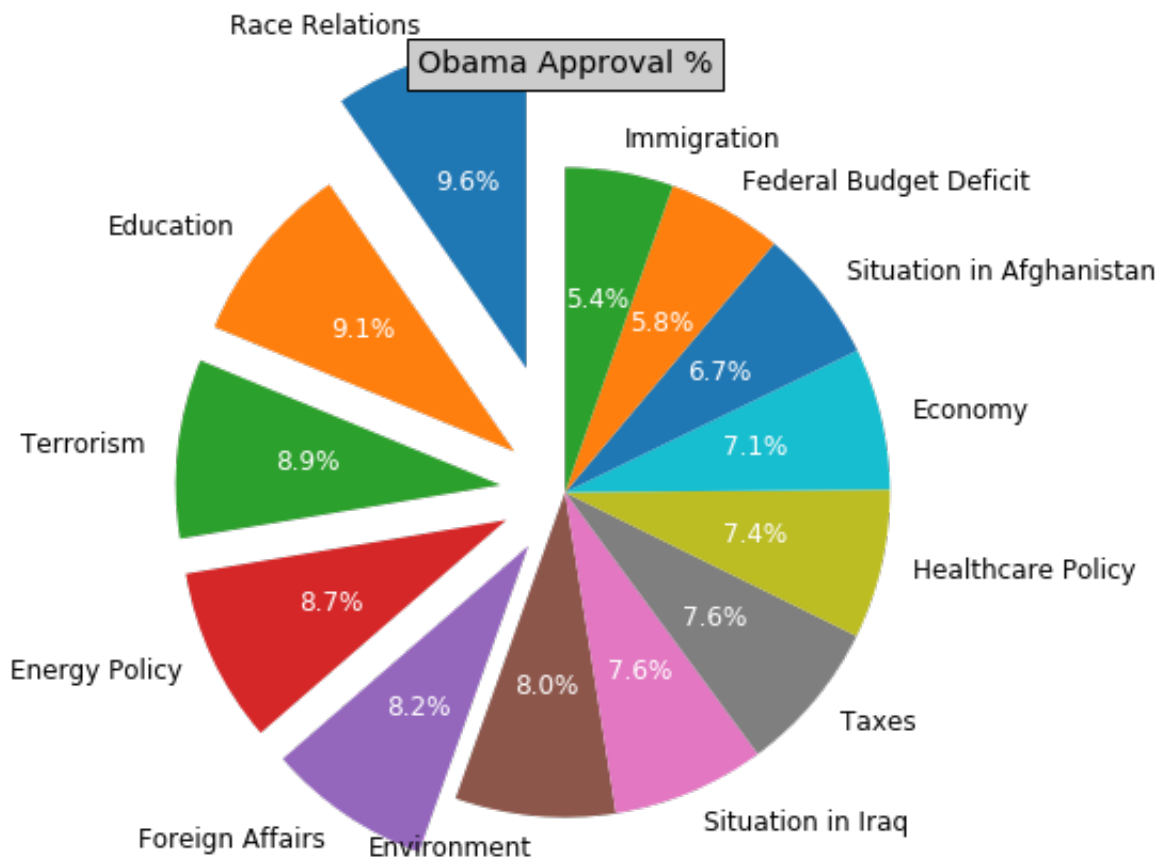Out[17]: <matplotlib.legend.Legend at 0x12013c250>

Pie Chart

The top five "Approval" issues are exploded out

```
In [111]:  fig = plt.figure(figsize=(14,7))
           csfont = {'fontname':'Arial'}
           plt.rcParams['font.size'] = 12
           plt.rcParams['font.weight'] = 'normal'
           plt.title("Obama Approval %", bbox={'facecolor':'0.8', 'pad':5})

           _, _, autotexts = plt.pie(obama.Approve, labels = obama.Issue,
                                     startangle=90, explode=(0.4,0.2,0.2,0.2,0.2,
           0,0,0,0,0,0,0,0),
                                     autopct = '%1.1f%%')
           for autotext in autotexts:
               autotext.set_color('white')
```


Donut Chart

The top five "Disapproval" issues are exploded out

In [117]:
```python
fig = plt.figure(figsize=(14,7))

plt.pie(obama.Disapprove, labels = obama.Issue, startangle=90,
        explode=(0,0,0,0,0,0,0,0,0.2,0.2,0.2,0.2,0.4), autopct = '%1.1
f%%', pctdistance = 0.75)
centre_circle = plt.Circle((0,0), 0.40, fc = 'lightgray')
fig = plt.gcf()
fig.gca().add_artist(centre_circle)

# Show compact plot
plt.title("Obama Dispproval %", bbox={'facecolor':'0.94', 'pad':5})
plt.tight_layout()
plt.show()
```