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DSC 640 Week 1-2 Assignment

In [190]:
```
import matplotlib.pyplot as plt
plt.style.use('classic')
%matplotlib inline
import numpy as np
import pandas as pd
```

In [191]:
```
# Seaborn for plotting and styling
import seaborn as sns
```

Line Chart

In [192]:
```
worldpop_data =  pd.read_excel('world-population.xlsx', sheetname='wo
#worldpop_data.head()
```

```
C:\Installed\Anaconda3\lib\site-packages\pandas\util\_decorators.py:188: Fu
tureWarning: The `sheetname` keyword is deprecated, use `sheet_name` instea
d
  return func(*args, **kwargs)
```

In [193]:

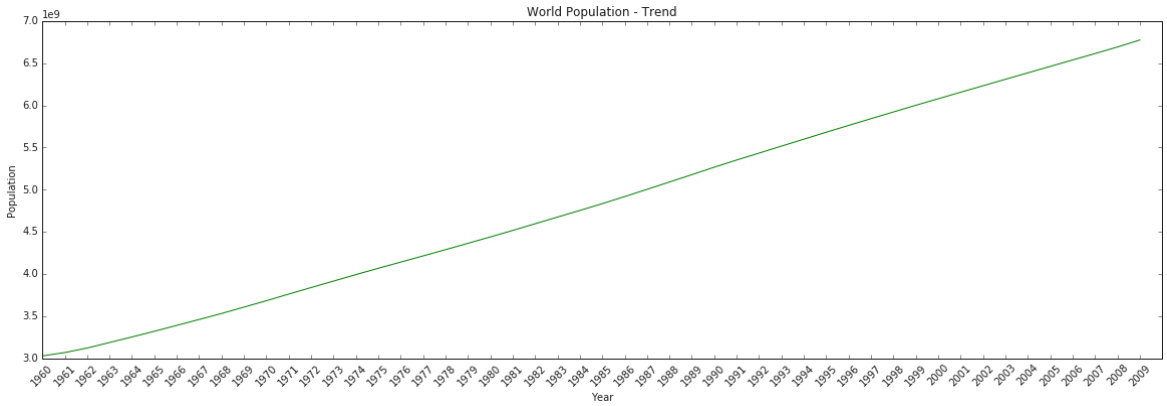
```
fig, ax = plt.subplots(figsize = (20,6))
plt.figure()

ax.plot(worldpop_data['Year'], worldpop_data['Population'], color = '
ax.set_title("World Population - Trend")
ax.set_xlabel('Year')
ax.set_ylabel('Population')

ax.set_xticks(worldpop_data['Year'])
ax.set_xticklabels(worldpop_data['Year'], rotation=45)

fig = plt.gcf()
ax.figure.savefig('LineChart_python.png')

plt.show()
```




```
<Figure size 432x288 with 0 Axes>
```

In [ ]:

```
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```

Bar Chart

In [194]:
```
obama_data =  pd.read_excel('obama-approval-ratings.xlsx', sheetname=
obama_data
```

Out[194]:

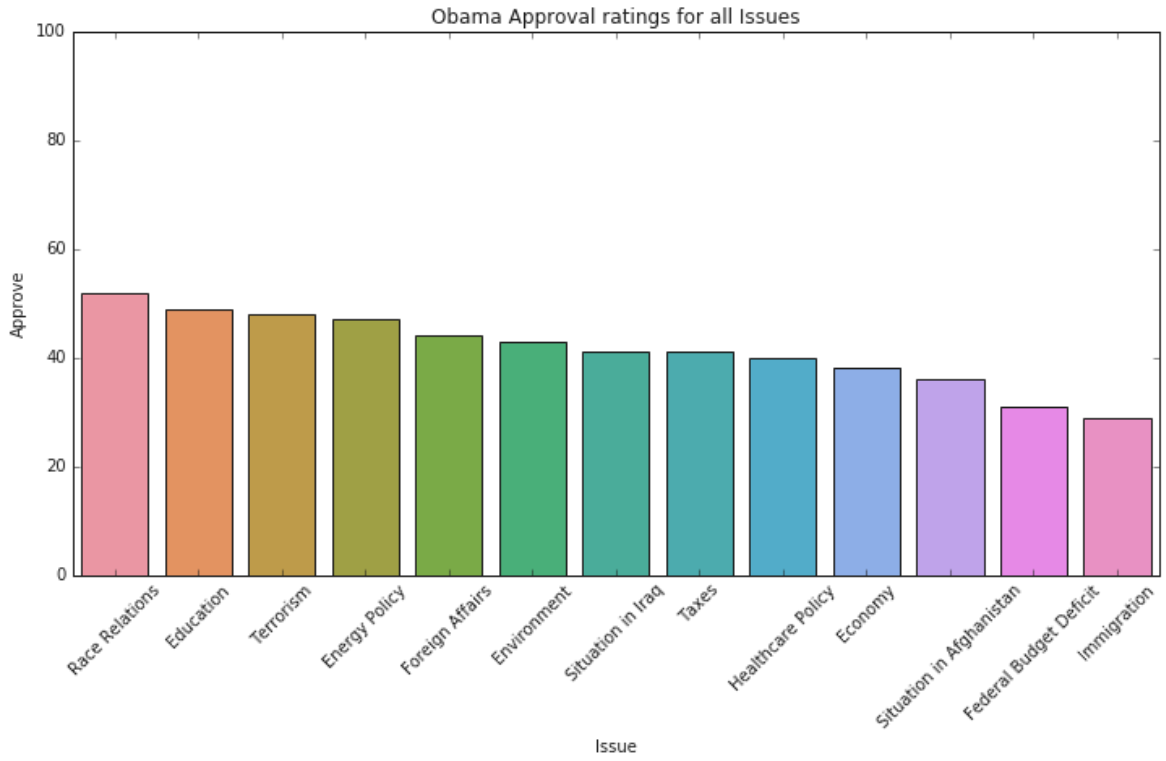
	Issue	Approve	Disapprove	None
0	Race Relations	52	38	10
1	Education	49	40	11
2	Terrorism	48	45	7
3	Energy Policy	47	42	11
4	Foreign Affairs	44	48	8
5	Environment	43	51	6
6	Situation in Iraq	41	53	6
7	Taxes	41	54	5
8	Healthcare Policy	40	57	3
9	Economy	38	59	3
10	Situation in Afghanistan	36	57	7
11	Federal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

In [195]:

```
fig, ax = plt.subplots(figsize = (12,6))
plt.figure("python_barchart.png")
python_barchart = sns.barplot(x=obama_data['Issue'], y = obama_data['A
                        data = obama_data,
                        ax=ax, ci=None)

ax.set_title("Obama Approval ratings for all Issues")
ax.set_ylim(0,100)
ax.set_xticklabels(list(obama_data['Issue']), rotation=45)

fig = plt.gcf()
ax.figure.savefig('BarChart_python.png')
```




```
<Figure size 432x288 with 0 Axes>
```

Stacked Bar Chart

In [198]:
```
1 obama_data.head()
```

Out[198]:

	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

In [199]:
```
1 Issue = obama_data['Issue']
2 approve = obama_data['Approve']
3 disapprove = obama_data['Disapprove']
4 none = obama_data['None']
5 index = np.arange(len(obama_data))
```

In [200]:
```
1 np.asarray(list(obama_data['Issue']))
```

Out[200]:
```
array(['Race Relations', 'Education', 'Terrorism', 'Energy Policy',
       'Foreign Affairs', 'Environment', 'Situation in Iraq', 'Taxes',
       'Healthcare Policy', 'Economy', 'Situation in Afghanistan',
       'Federal Budget Deficit', 'Immigration'], dtype='<U24')
```

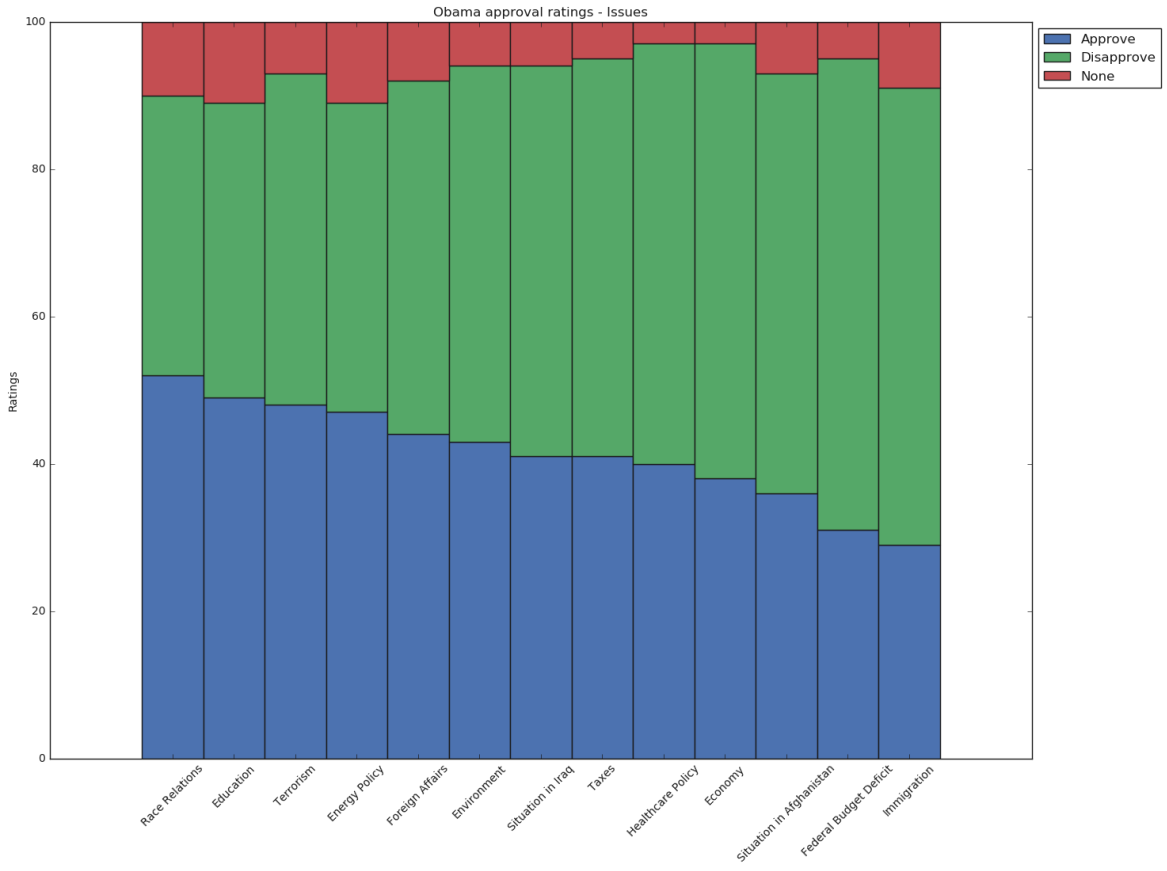
In [201]:

```
plt.figure(figsize = (16,12), dpi=100)
approvebar = plt.bar(x= index, height = obama_data['Approve'], width=1
disapprovebar = plt.bar(x= index, height = obama_data['Disapprove'], w
nonebar = plt.bar(x= index, height = obama_data['None'], width=1,
                  bottom =  obama_data['Approve']+obama_data['Disappro

plt.ylabel('Ratings')
plt.title('Obama approval ratings - Issues')
plt.xticks(index, Issue, rotation=45)
plt.legend((approvebar[0], disapprovebar[0], nonebar[0]), ('Approve',
           bbox_to_anchor=(1, 1),loc=2)  # to save legend on the right

# saving the chart
plt.savefig('stacked_barchart_python.png')

# Show graphic
plt.show()
```



In [ ]:

```
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```

Pie Chart

In [202]:
```
obama_data2 =  pd.read_excel('obama-approval-ratings-pie.xlsx', sheetn
obama_data2.head()
```

Out[202]:

	Issue	Percentage	Status	Labelpos
0	Race Relations	52	Approve	75
1	Education	49	Approve	75
2	Terrorism	48	Approve	75
3	Energy Policy	47	Approve	75
4	Foreign Affairs	44	Approve	75

In [203]:
```
obama_data_pie = obama_data2[obama_data2['Issue'] == 'Foreign Affairs
obama_data_pie
```

Out[203]:

	Issue	Percentage	Status	Labelpos
4	Foreign Affairs	44	Approve	75
17	Foreign Affairs	48	Disapprove	40
30	Foreign Affairs	8	None	5

In [204]:

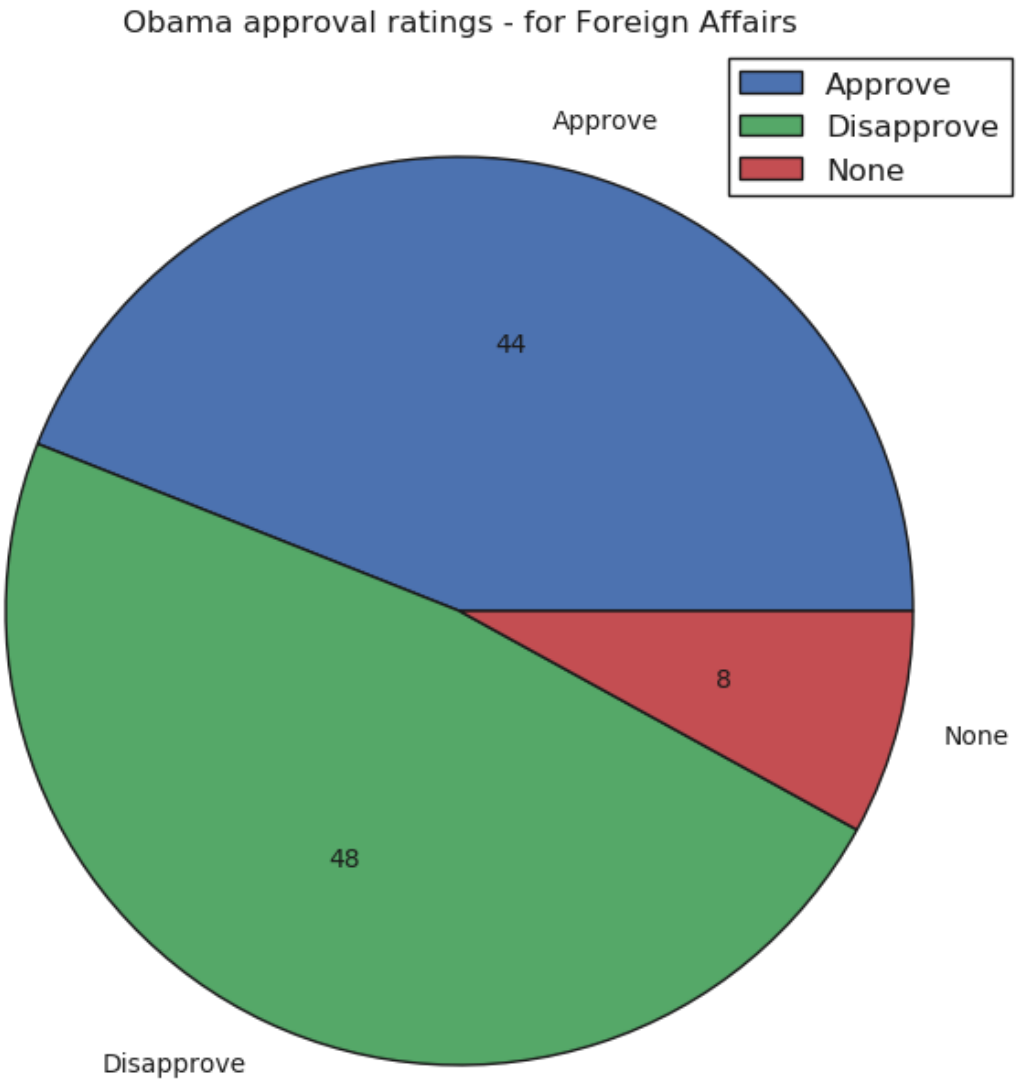
```
plt.figure(figsize = (12,8), dpi=100)

plt.pie(obama_data_pie['Percentage'], labels = obama_data_pie['Status

#plt.ylabel('Ratings')
plt.title('Obama approval ratings - for Foreign Affairs')
#plt.xticks(index, Issue, rotation=45)
plt.legend()

# saving the chart
plt.savefig('piechart_python.png')

# Show graphic
plt.show()
```



In [ ]:

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```

Donut Charts

In [206]:

```
plt.figure(figsize = (12,8), dpi=100)

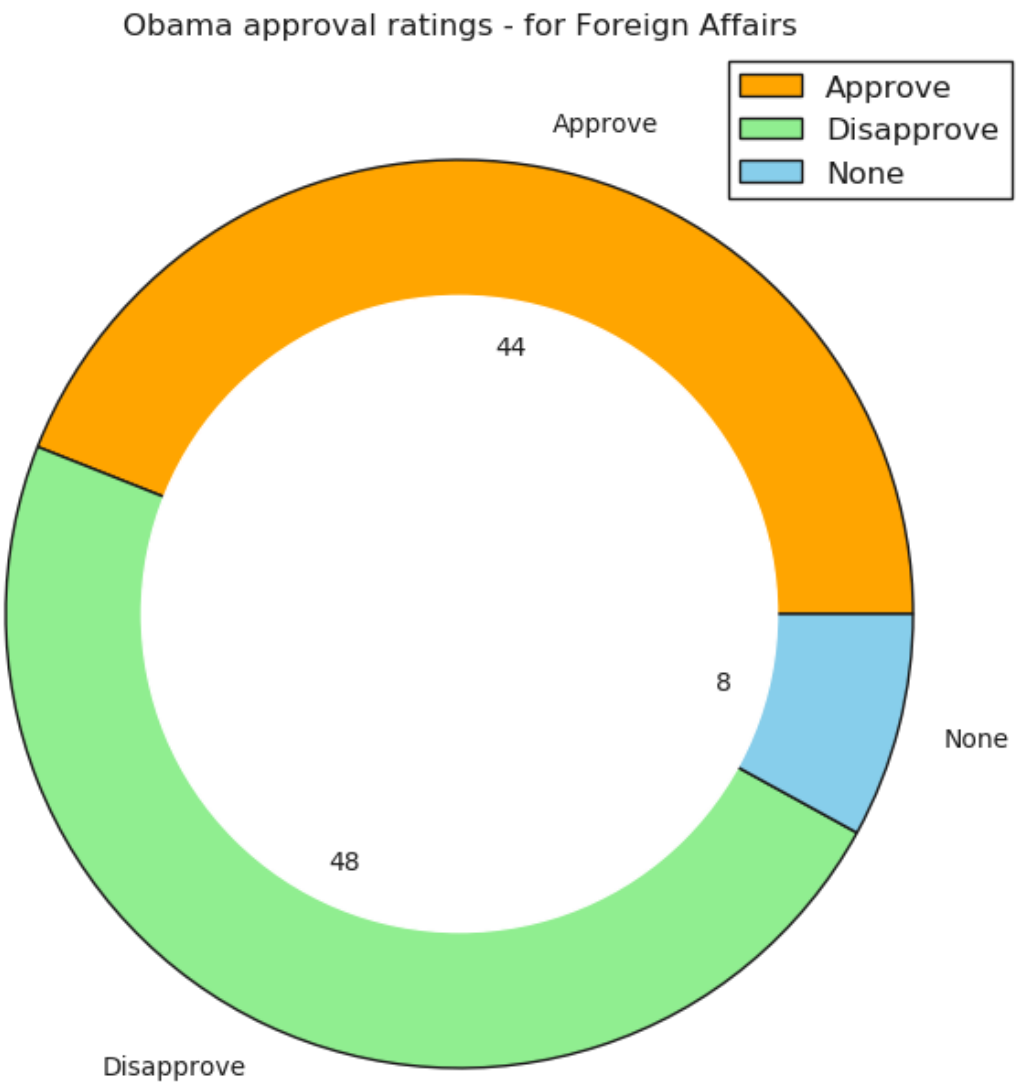

# Create a circle for the center of the plot
my_circle=plt.Circle( (0,0), 0.7, color='white')


# Give color names
plt.pie(obama_data_pie['Percentage'], labels = obama_data_pie['Status
        colors=['orange','lightgreen','skyblue'], autopct = '%.f')
p=plt.gcf()
plt.title('Obama approval ratings - for Foreign Affairs')
plt.legend()
p.gca().add_artist(my_circle)

# saving the chart
plt.savefig('donutchart_python.png')

# Show graphic
plt.show()

```


Obama approval ratings - for Foreign Affairs
Approve
Disapprove
None
Approve
44
8
None
48
Disapprove

In [ ]:
```
1
```

In [ ]:
```
1
```