

Assignment1.2 - Python

```
In [1]: import pandas as pd
from pandas import ExcelWriter
from pandas import ExcelFile
import matplotlib.pyplot as plt

# Import data to be used for visualization
obama = pd.read_excel('ex1-2/obama-approval-ratings.xls')

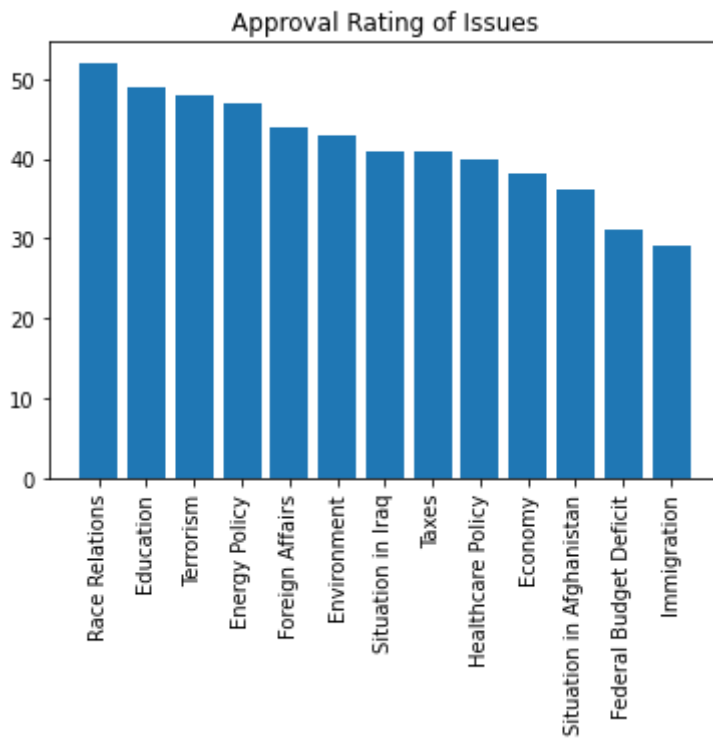
# Examine data
print(obama)
```

	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

Plot Bar Chart

Plot the issue in x-axis and any of the corresponding ratings in the y-axis with approval ratings as the measure.

```
In [2]: plt.bar(obama.Issue, obama.Approve)
plt.title('Approval Rating of Issues')
plt.xticks(rotation=90)
plt.show()
```

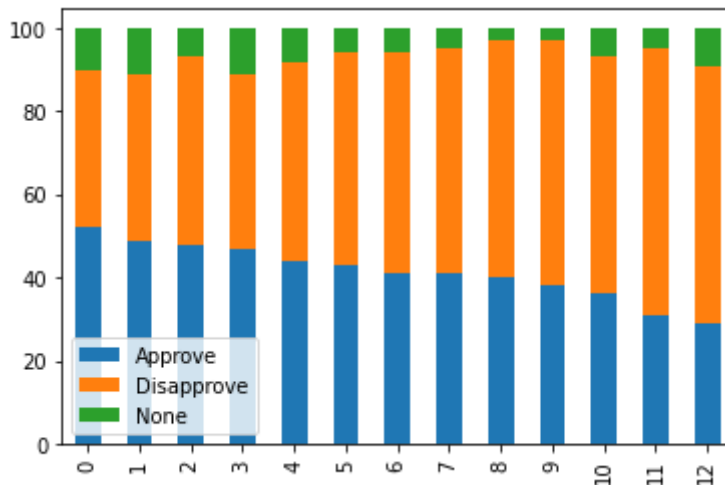


Plot Stacked Bar Chart

Plot each issue with their respective Approval, Disapproval and Neutral counts.

```
In [3]: obama.plot.bar(stacked=True)
```

```
Out[3]: <AxesSubplot:>
```



Plot Pie Chart

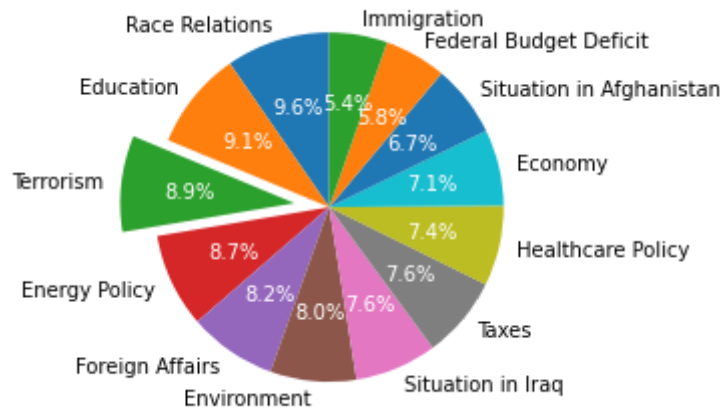
For pie chart demonstration, I would like to plot percentages for each issue of Obama dataset. I would also like to explode the third issue, i.e. Terrorism.

```
In [4]: # Create custom theme for graph
csfont = {'fontname': 'Century Gothic MS'}
plt.rcParams['font.size'] = 10
```

```
plt.rcParams['font.weight'] = 'normal'

# Create pie chart with custom explode
_, _ , autotexts = plt.pie(obama.Approve, labels = obama.Issue,
                           startangle=90, explode=(0,0,0.2,0,0,0,0,0,0,0,0,0,0,0),
                           autopct = '%1.1f%%')

for autotext in autotexts:
    autotext.set_color('white')
```

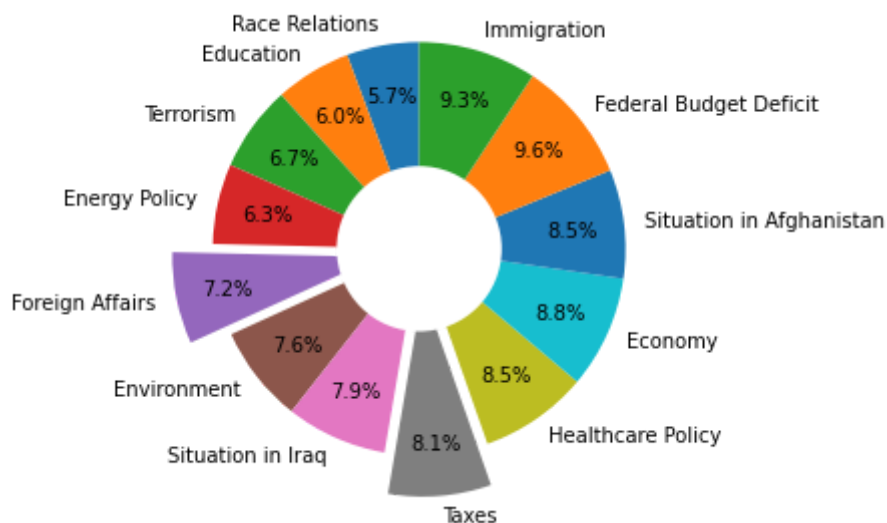


Plot Donut Chart

Plot the disapproval percentages for each issue and explode the Foreign Affairs and Taxes issue.

```
In [5]: # Create donut chart
plt.pie(obama.Disapprove, labels = obama.Issue, startangle=90,
        explode=(0,0,0,0,0,0.2,0,0,0,0.2,0,0,0,0,0), autopct = '%1.1f%%', pctdistar
centre_circle = plt.Circle((0,0), 0.40, fc = 'white')
fig = plt.gcf()
fig.gca().add_artist(centre_circle)

# Show compact plot
plt.tight_layout()
plt.show()
```



In []:

Assignment 1.2

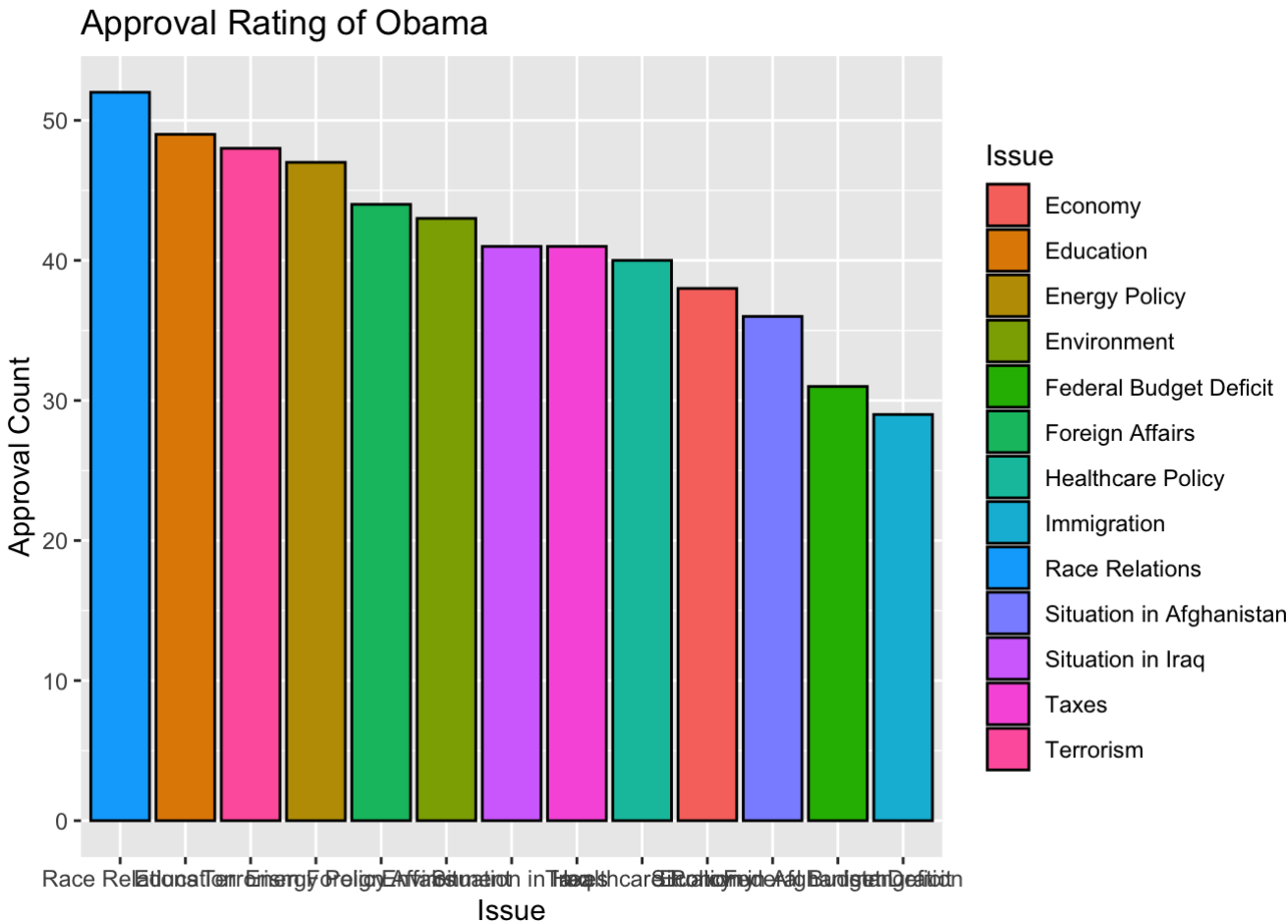
Anjani Bonda

12/10/2022

##	Issue	Approve	Disapprove	None
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## 5	Foreign Affairs	44	48	8
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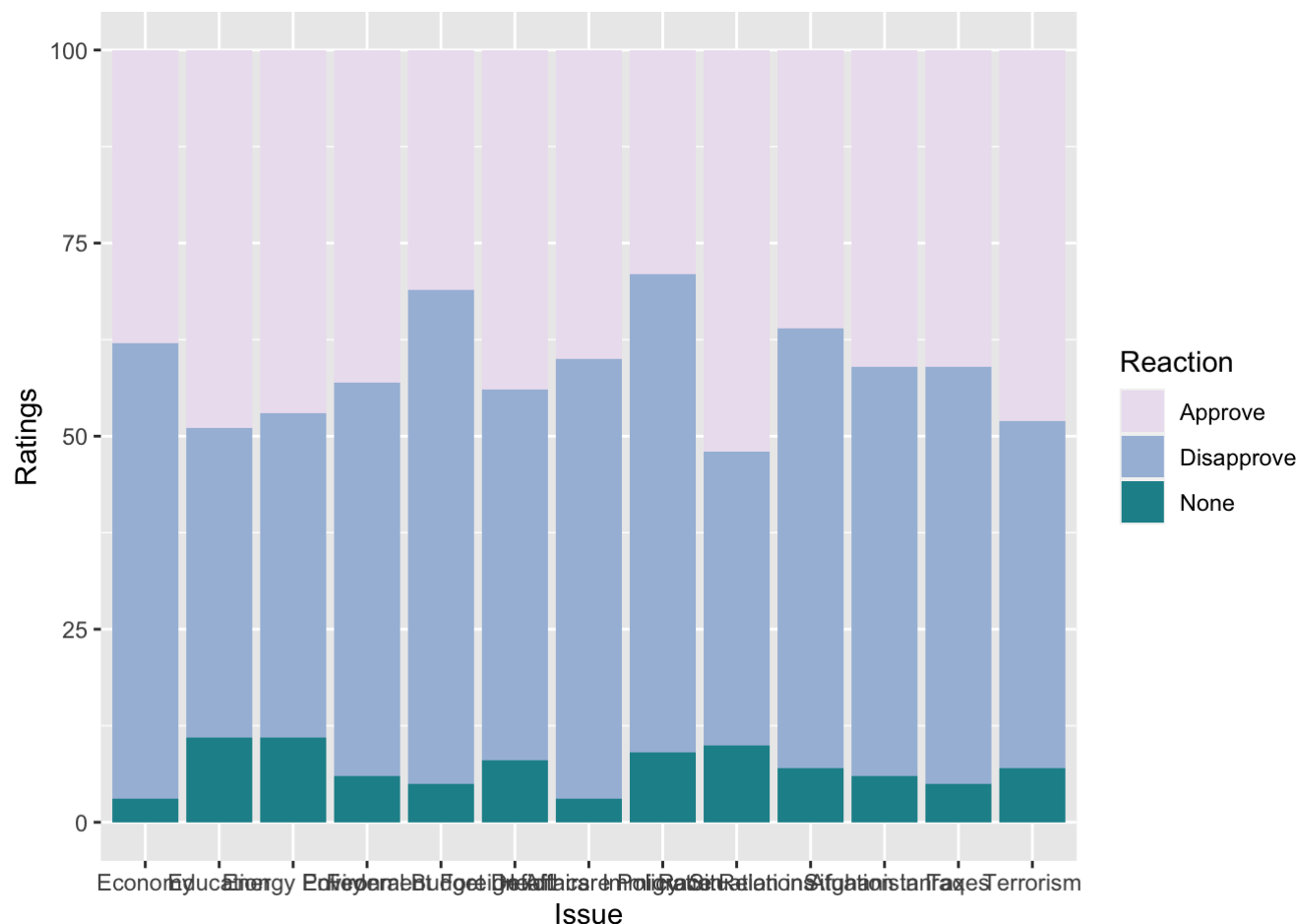
Bar chart

Plot the issue in x-axis and any of the corresponding ratings in y-axis with approval ratings as the measure.



Stacked Bar Chart

Plot each issue with their respective Approval, Disapproval and Neutral counts.

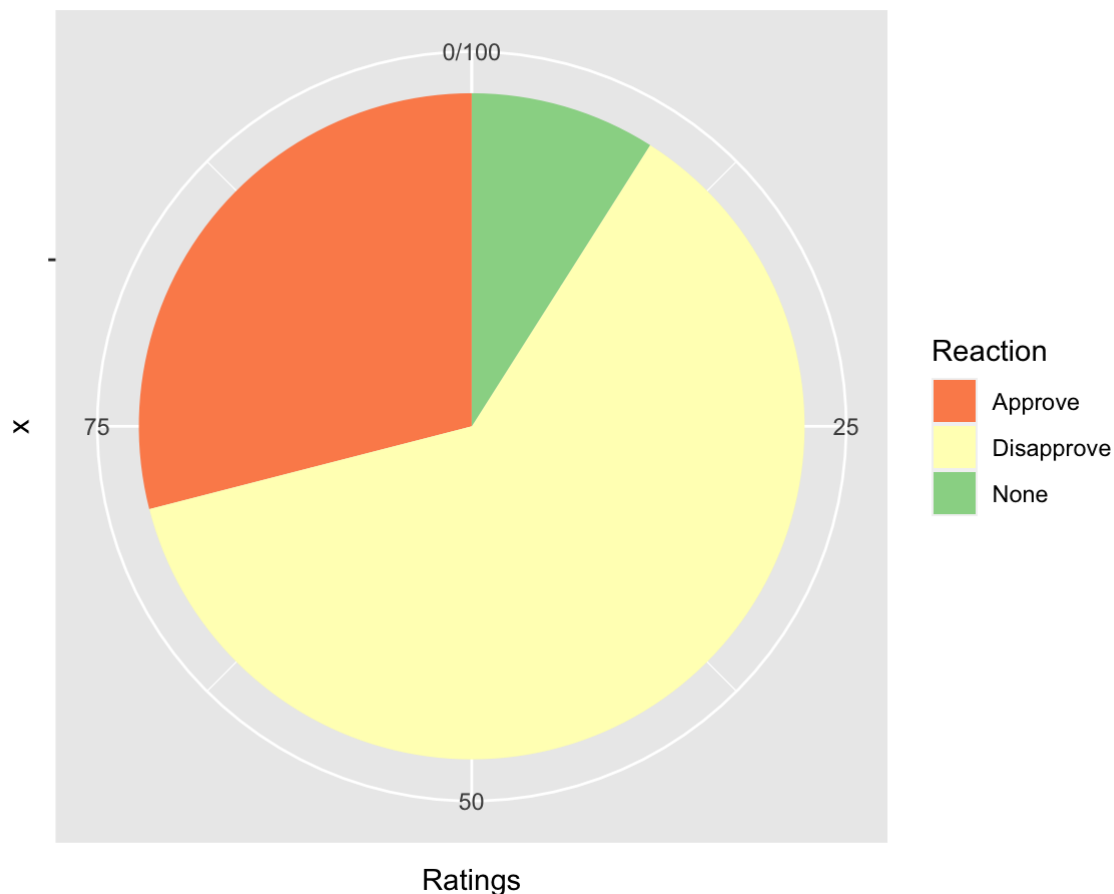


Pie Chart

For pie chart, Plot Immigration issue and plot the different ratings in a pie.

```
obama_long %>%
  dplyr::filter(Issue=='Immigration') %>%
  ggplot2::ggplot(ggplot2::aes(x="", y=Ratings, fill=Reaction))+
    ggplot2::geom_bar(width = 1, stat = 'identity') +
    ggplot2::coord_polar('y', start=0) +
    ggplot2::ggtitle(label = 'Reaction on Immigration Issue in Obama Era') +
    ggplot2::scale_fill_brewer(palette='Spectral')
```

Reaction on Immigration Issue in Obama Era



Donut Chart

For donut chart, Plot Education issue and plot different ratings in the shape of a donut.

```
obama_long %>%
  dplyr::filter(Issue=='Education') %>%
  dplyr::mutate(ymax=cumsum(Ratings),
               ymin=c(0,ymax[1:length(ymax)-1])) %>%
  ggplot2::ggplot(ggplot2::aes(fill=Reaction, ymax=ymax, ymin=ymin, xmax=4, xmin=3)) +
    ggplot2::geom_rect() +
    ggplot2::coord_polar(theta='y') +
    ggplot2::xlim(c(0, 4)) +
    ggplot2::annotate('text', x = 0, y = 0, label = 'Reaction on Education') +
    ggplot2::labs(title='')
```