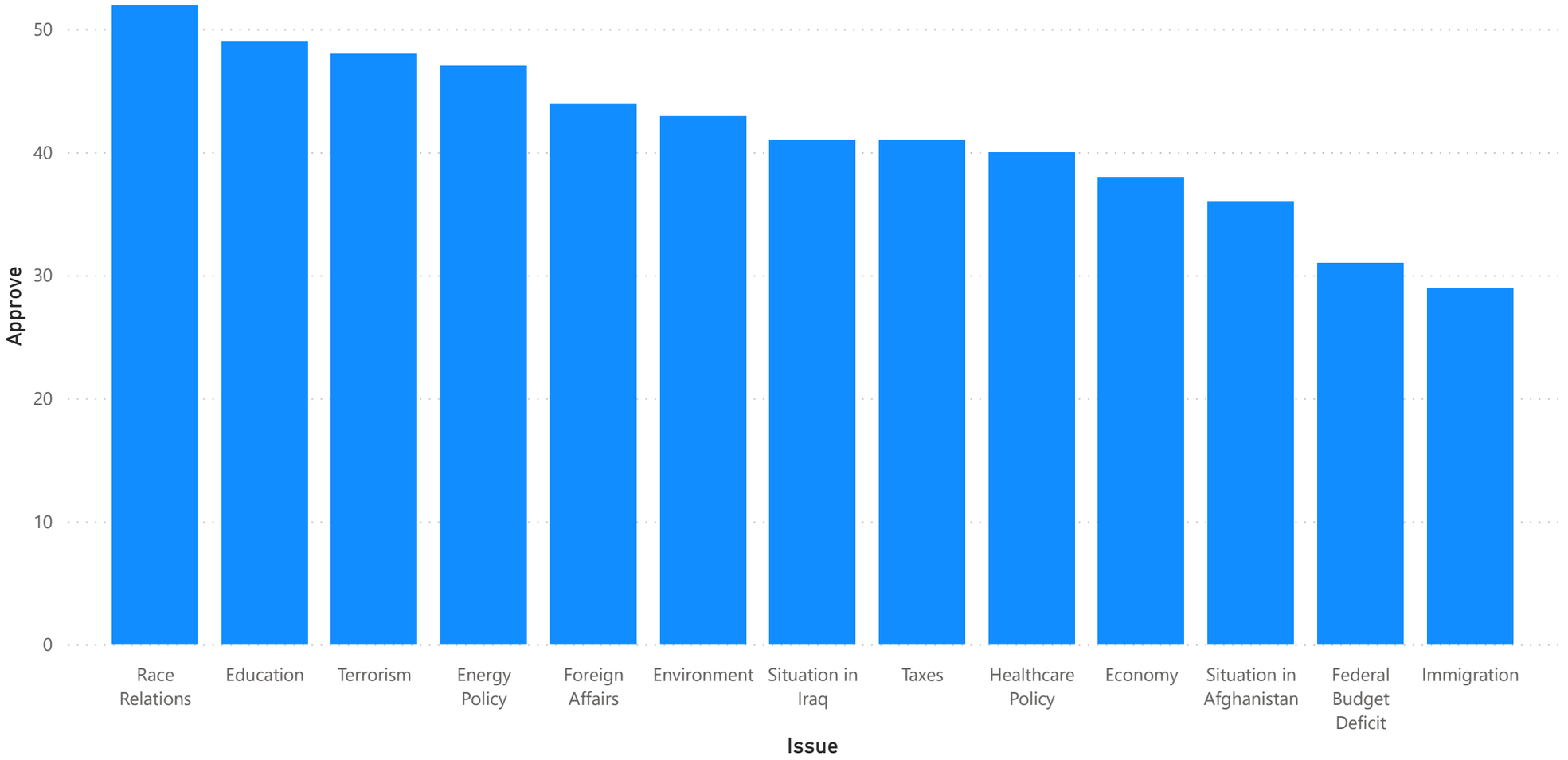
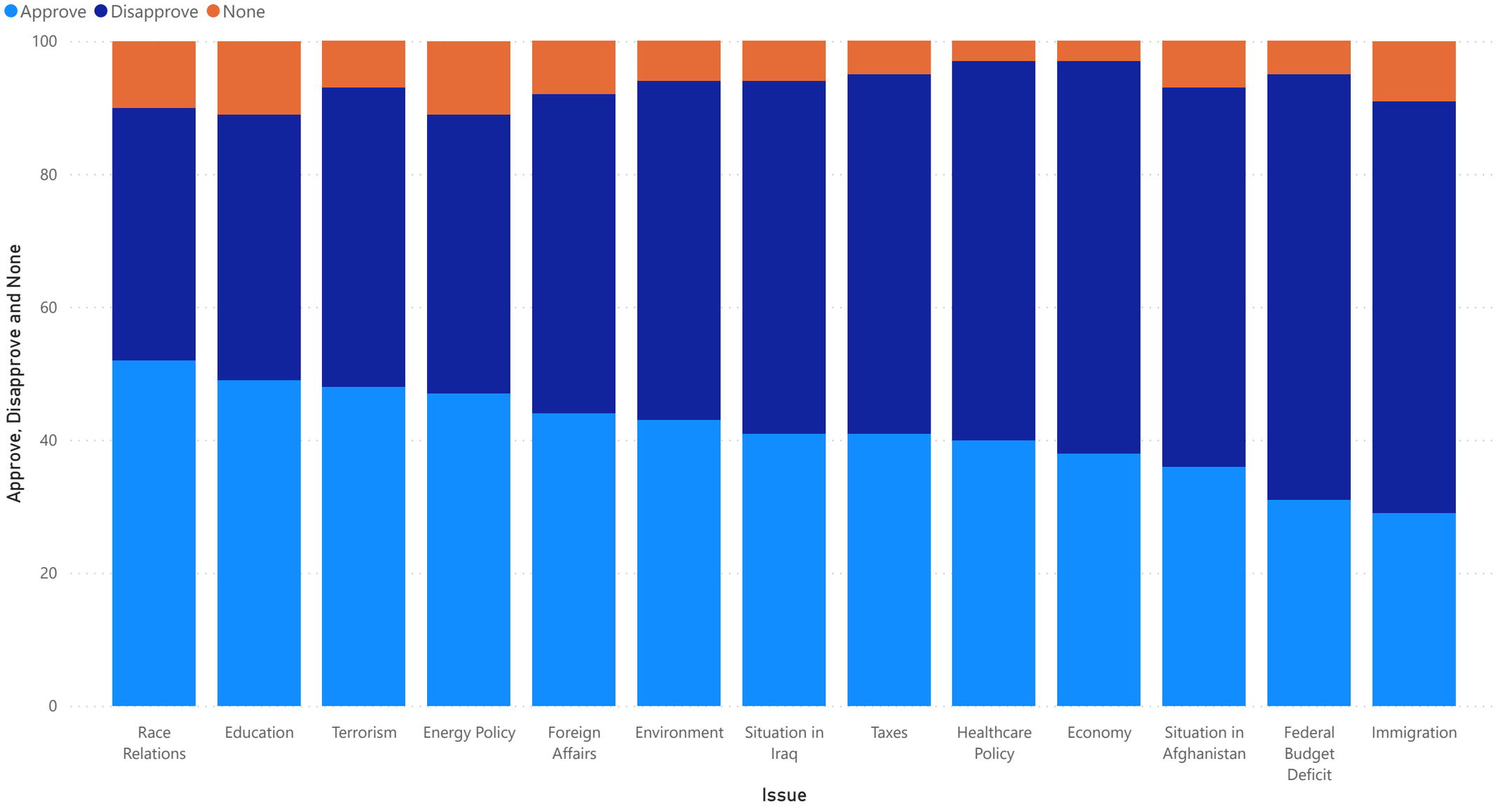
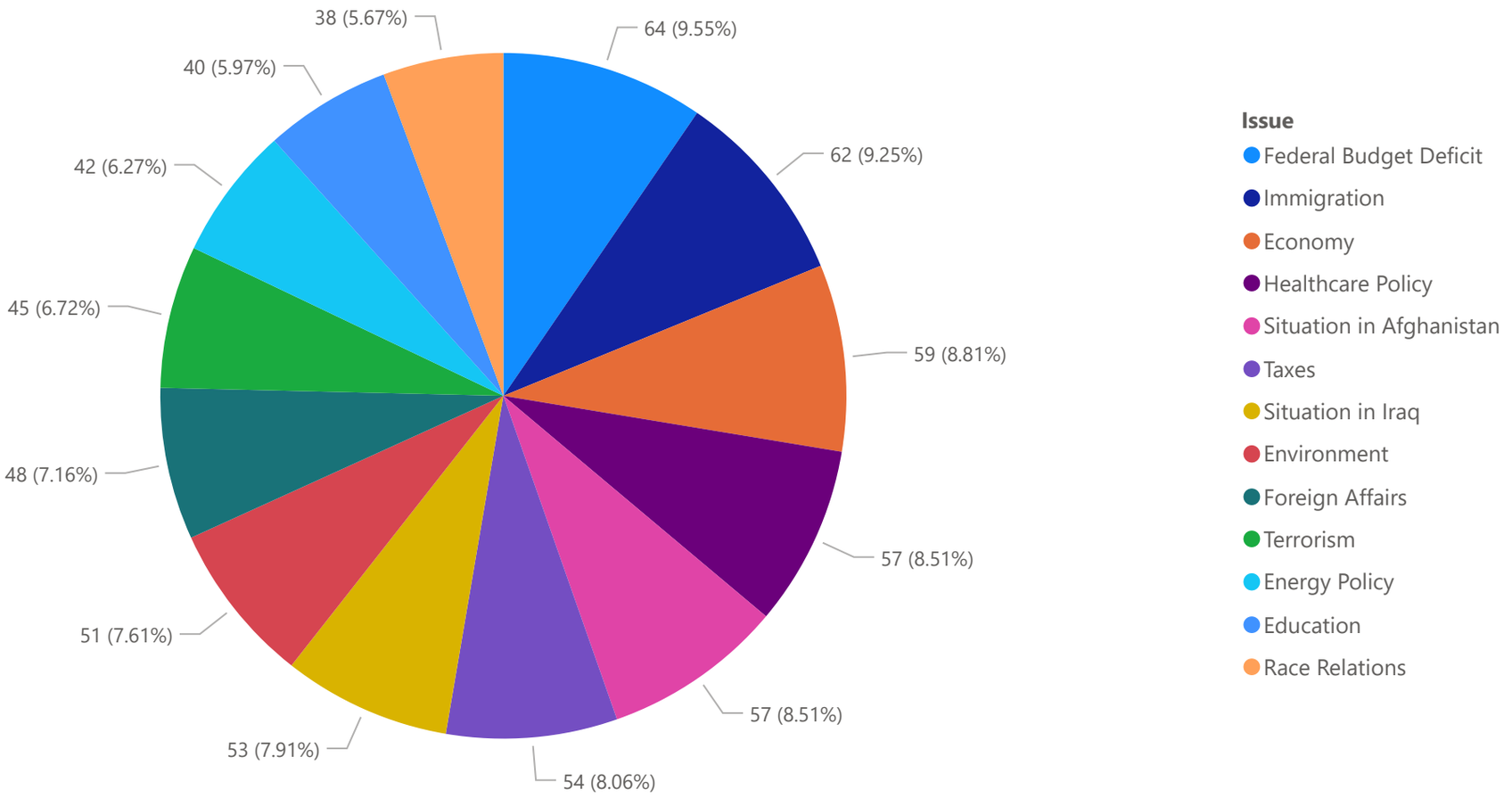
Bar chart_PowerBI



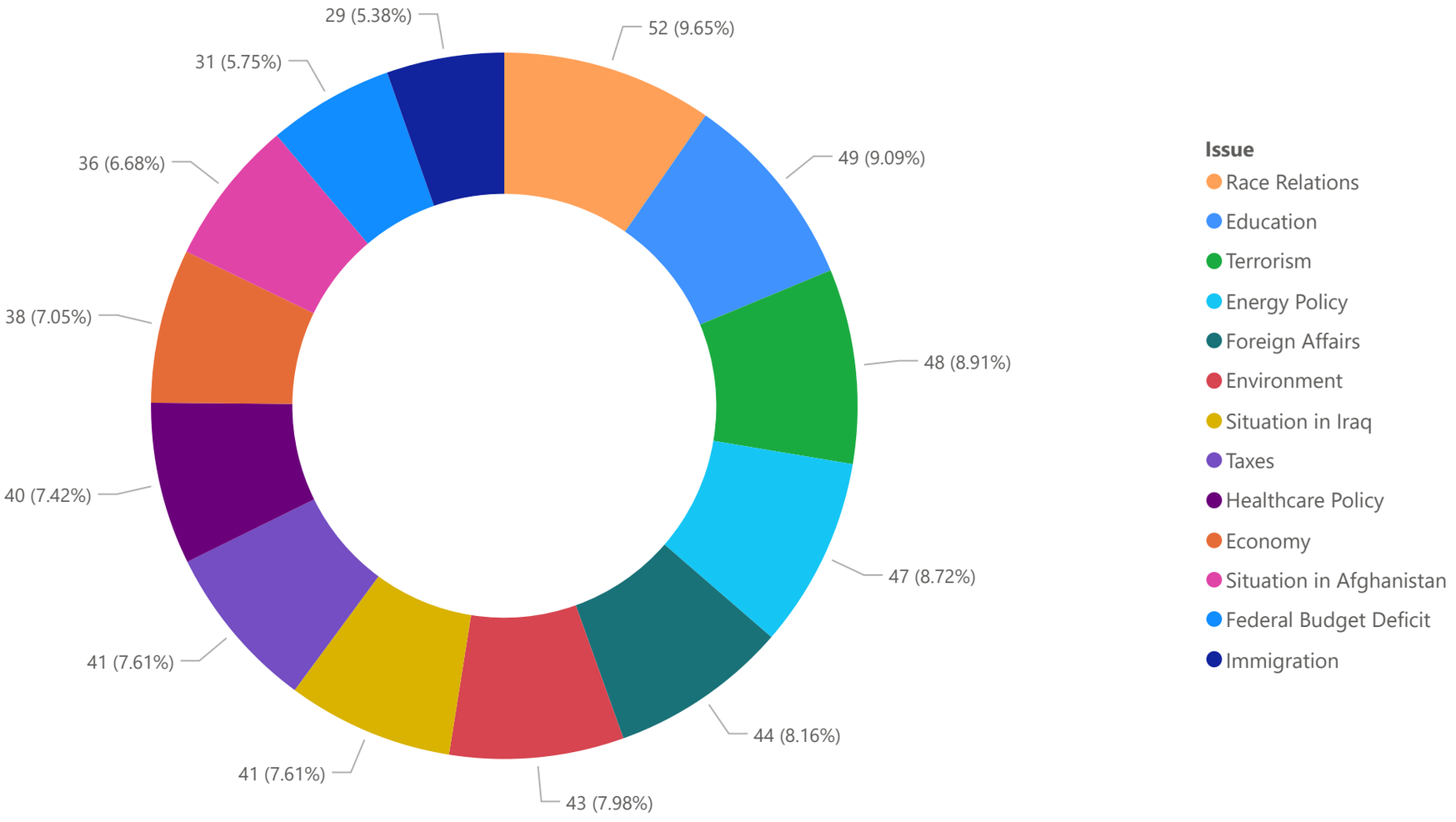
Stacked Bar Chart_PowerBI



Pie Chart_PowerBI



Donut Chart_PowerBI



Excercise in Python

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

In [5]:
```
#Read Excel file obama-approval-ratings.xls
approval = pd.read_excel('obama-approval-ratings.xls')
```

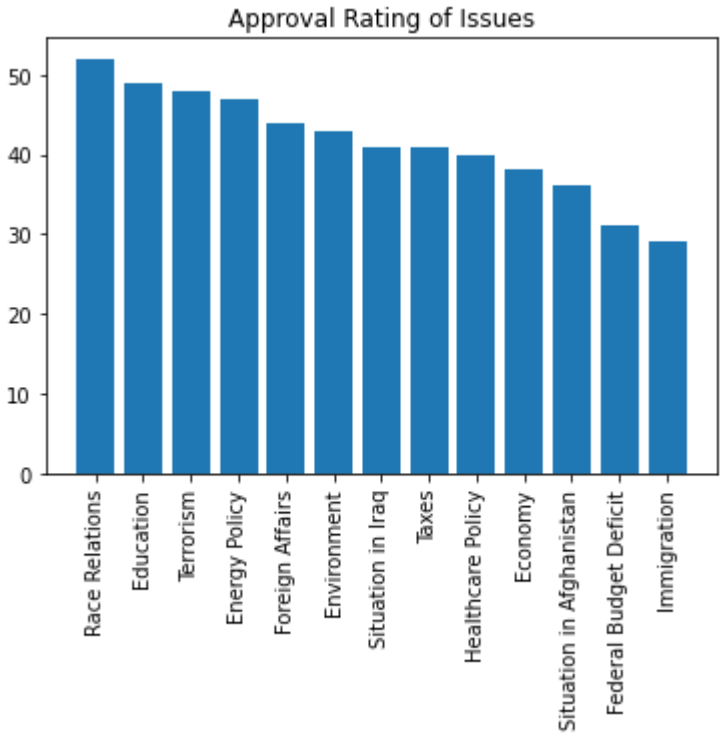
In [6]:
```
approval
```

Out[6]:

	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

Bar chart - Python

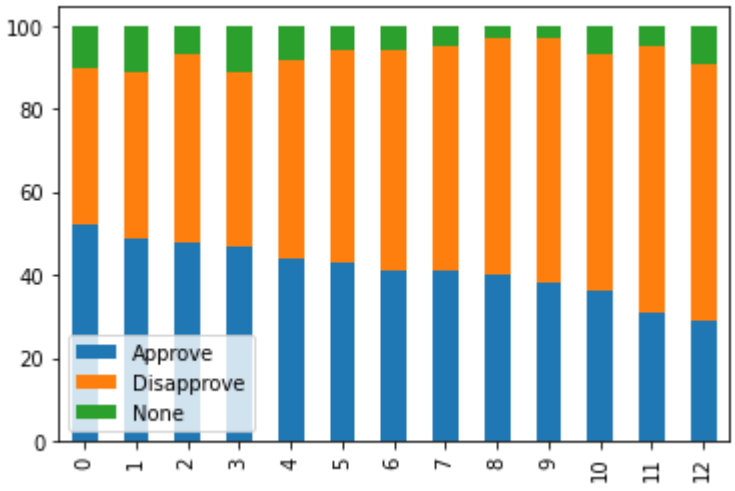
In [9]:
```
plt.bar(approval.Issue, approval.Approve)
plt.title('Approval Rating of Issues')
plt.xticks(rotation=90)
plt.show()
```



Stacked Bar Chart - Python

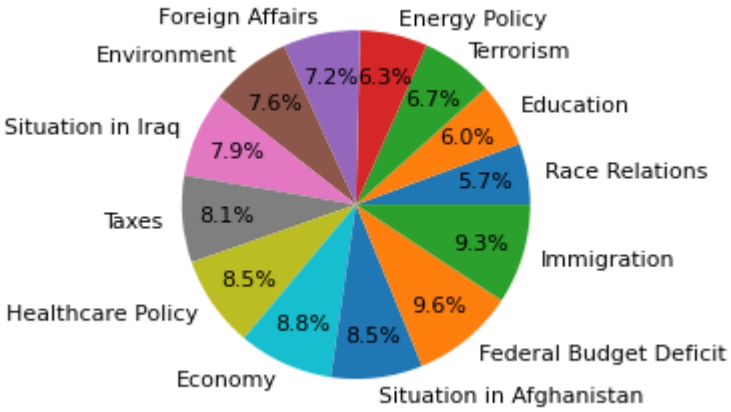
In [10]:
```
approval.plot.bar(stacked=True)
```

Out[10]: <AxesSubplot:>



Pie chart - Python

In [36]:
```
# plot the pie chart for disapproval percentage of each issue
_, _, autotexts = plt.pie(approval.Disapprove, labels = approval.Issue, autopct = '%1.1
for autotext in autotexts:
    autotext.set_color('Black')
```

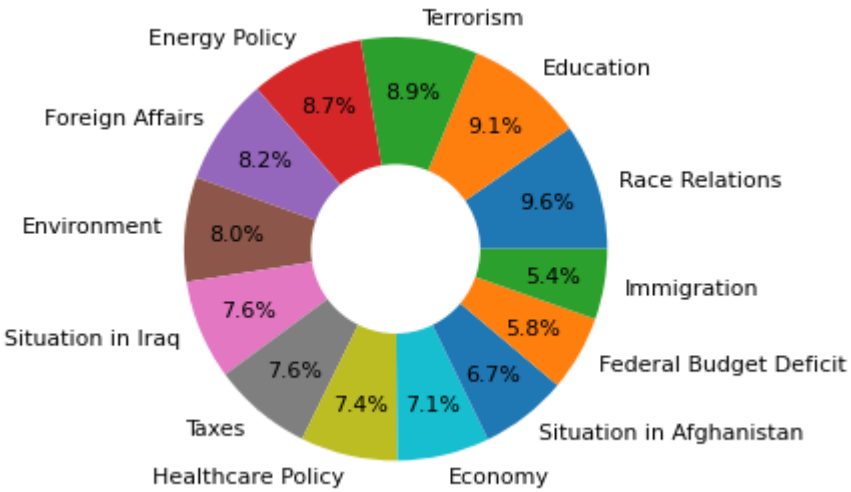


Donut chart - Python

In [34]:

```
#plot the donut chart approval percentage for each issue
plt.pie(approval.Approve, labels = approval.Issue, autopct = '%1.1f%%', pctdistance = 0
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()
```



Excercises in R

In [1]:
```
# Import required packages
library('magrittr')
library("ggplot2")
library("dplyr")
library("xlsx")
```

```
Attaching package: 'dplyr'


The following objects are masked from 'package:stats':

    filter, lag


The following objects are masked from 'package:base':

    intersect, setdiff, setequal, union


java.home option:

JAVA_HOME environment variable: C:\Users\meena\anaconda3\Library\lib\jvm

Warning message in fun(libname, pkgname):
"Java home setting is INVALID, it will be ignored.
Please do NOT set it unless you want to override system settings."
```

In [2]:
```
# Reading Excel file
file = paste(getwd(), '/obama-approval-ratings.xls', sep = '')
approval = xlsx::read.xlsx(file, sheetIndex = 1, stringsAsFactors = FALSE)

approval
```

A data.frame: 13 × 4

Issue	Approve	Disapprove	None
<chr>	<dbl>	<dbl>	<dbl>
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

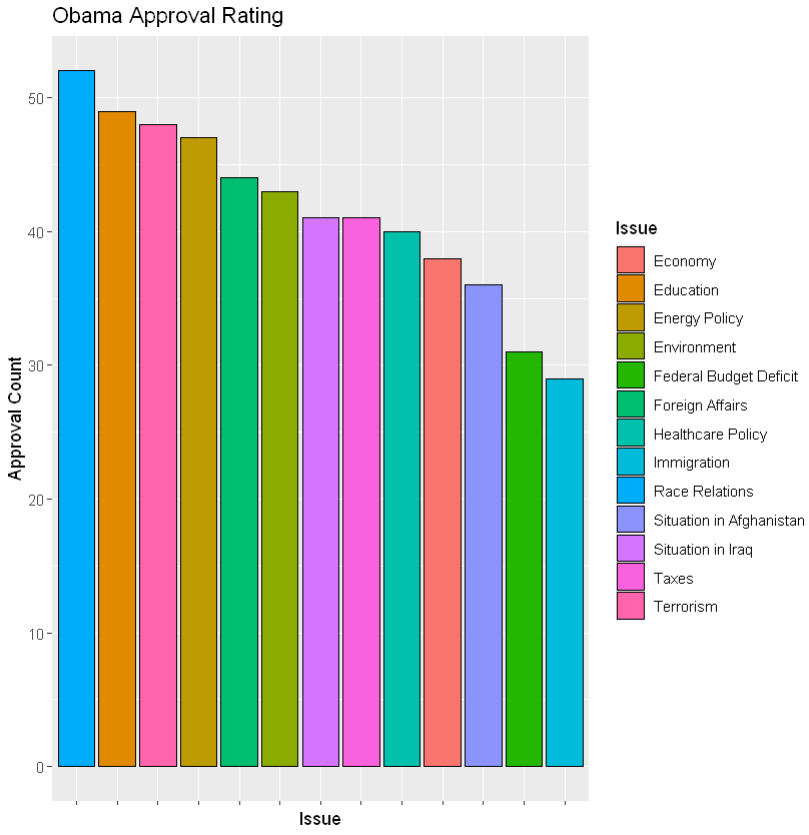
Issue	Approve	Disapprove	None
<chr>	<dbl>	<dbl>	<dbl>
Economy	38	59	3
Situation in Afghanistan	36	57	7
Federal Budget Deficit	31	64	5
Immigration	29	62	9

Bar chart - R

In [3]:

```
# I have plotted the Issue on the x-axis and use approval ratings as my Y-axis

approval %>%
    dplyr::select(Issue, Approve) %>%
    dplyr::arrange(-Approve) %>%
    dplyr::mutate(SortOrder = factor(Issue, Issue)) %>%
    ggplot2::ggplot(ggplot2::aes(x=SortOrder, y=Approve, fill=Issue)) +
        ggplot2::geom_bar(stat='identity', color='black') +
        ggplot2::xlab('Issue') + ggplot2::ylab('Approval Count') +
        ggplot2::theme(axis.text.x=element_blank()) +
        ggplot2::ggtitle('Obama Approval Rating')
```

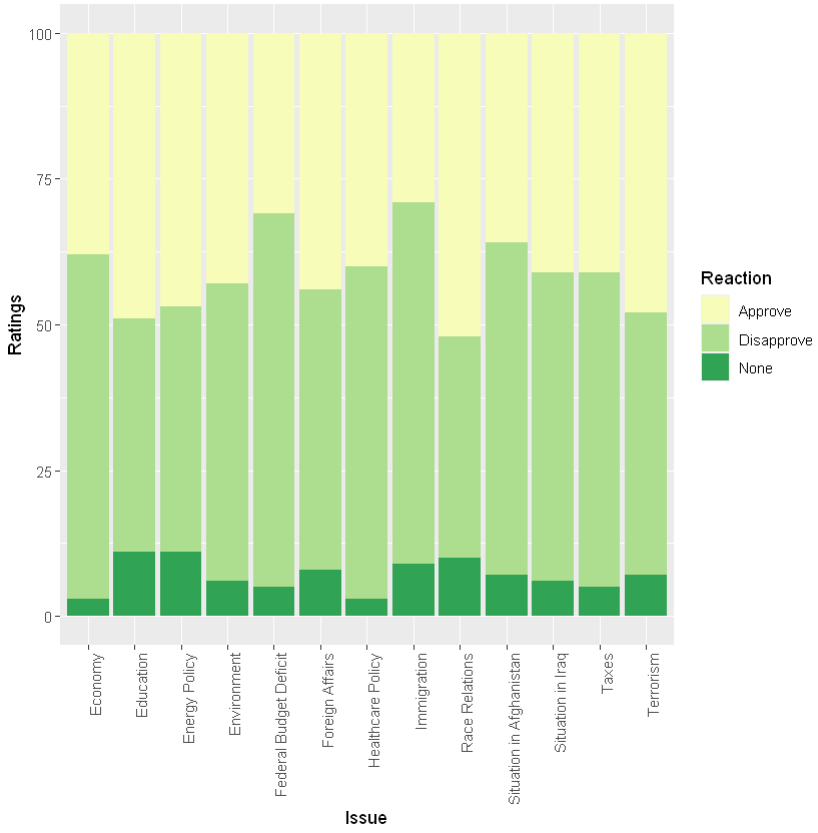


Stacked Bar Chart - R

In [4]:

```
# I will chart each issue with its corresponding Approval, Disapproval, and Neutral cou
#For each topic, a 100% stacked bar chart will be produced in order to accurately depic
obama_long = approval %>%
    tidyr::gather('Reaction','Ratings', Approve, Disapprove, None)
```

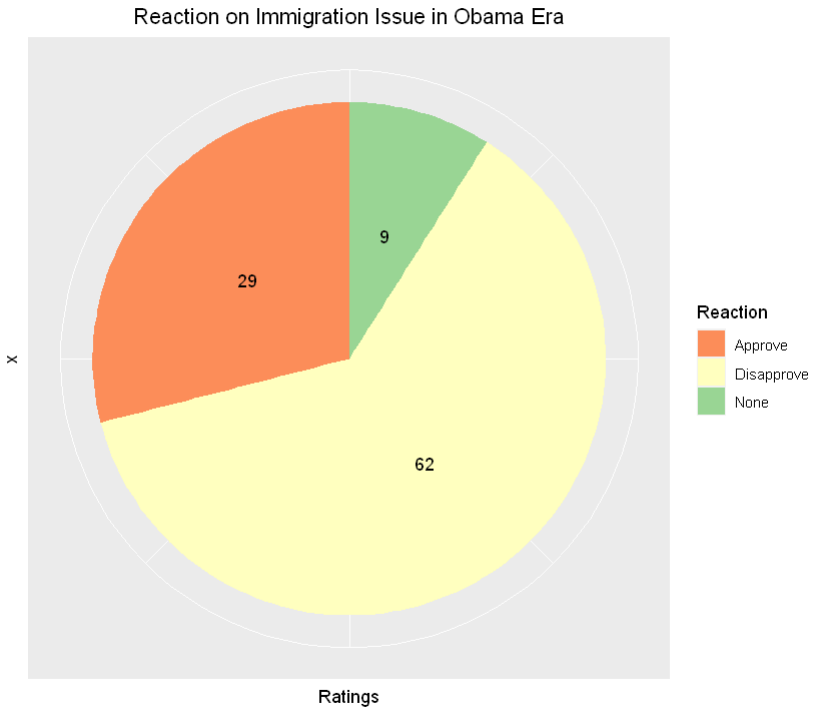
```
# Plot stacked
ggplot2::ggplot(data = obama_long, ggplot2::aes(x = Issue, y = Ratings, fill = Reaction
    ggplot2:: geom_bar(stat='identity') +
    ggplot2::theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
    ggplot2::scale_fill_brewer(palette = 15)
```



Pie chart - R

In [5]:

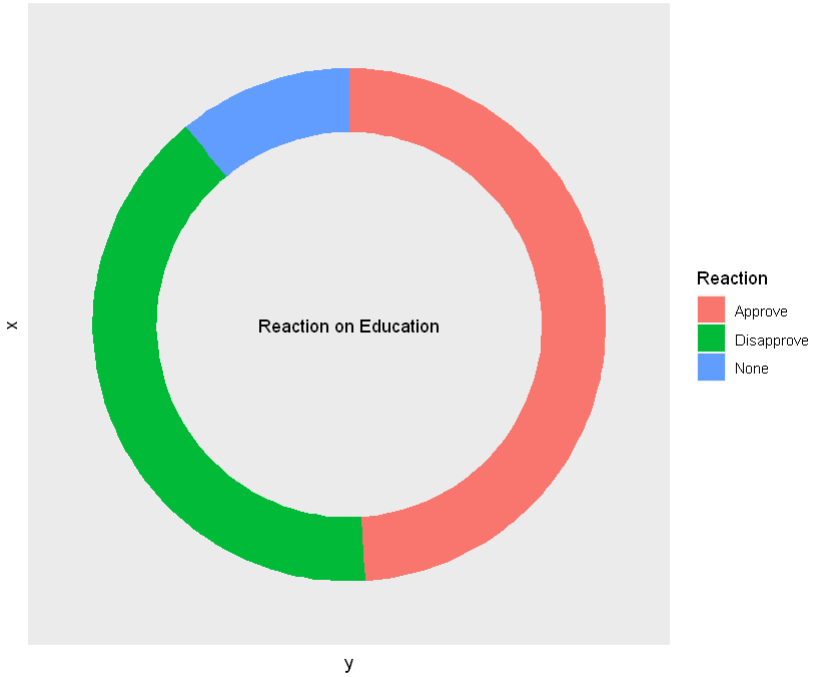
```
# I'd like to choose the immigration topic to illustrate a pie chart and plot the vario
#For this purpose, I would need the long data set. Because we need the stacked chart be
# Since pie chart is not easy to digest, I would NOT use the same color family for the
obama_long %>%
    dplyr::filter(Issue=='Immigration') %>%
    ggplot2::ggplot(ggplot2::aes(x="", y=Ratings, fill=Reaction))+
        ggplot2::geom_bar(width = 1, stat = 'identity') +
        ggplot2::coord_polar('y', start=0) +
        ggplot2::geom_text(aes(label = Ratings), position = position_stack(vjust = 0.5)
        ggplot2::ggtitle(label = 'Reaction on Immigration Issue in Obama Era') +
        ggplot2::scale_fill_brewer(palette='Spectral') +
        ggplot2::theme(axis.line = element_blank(),
          axis.text = element_blank(),
          axis.ticks = element_blank(),
          plot.title = element_text(hjust = 0.5))
```



Donut Chart - R

In [6]:

```
#I want to choose the Education topic for the donut chart demonstration and plot the va
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::theme(panel.grid=element_blank()) +
         ggplot2::theme(axis.text=element_blank()) +
         ggplot2::theme(axis.ticks=element_blank()) +
         ggplot2::annotate('text', x = 0, y = 0, label = 'Reaction on Education') +
         ggplot2::labs(title='')
```


Reaction on Education
Reaction
Approve
Disapprove
None
x
y