Exercises in R

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

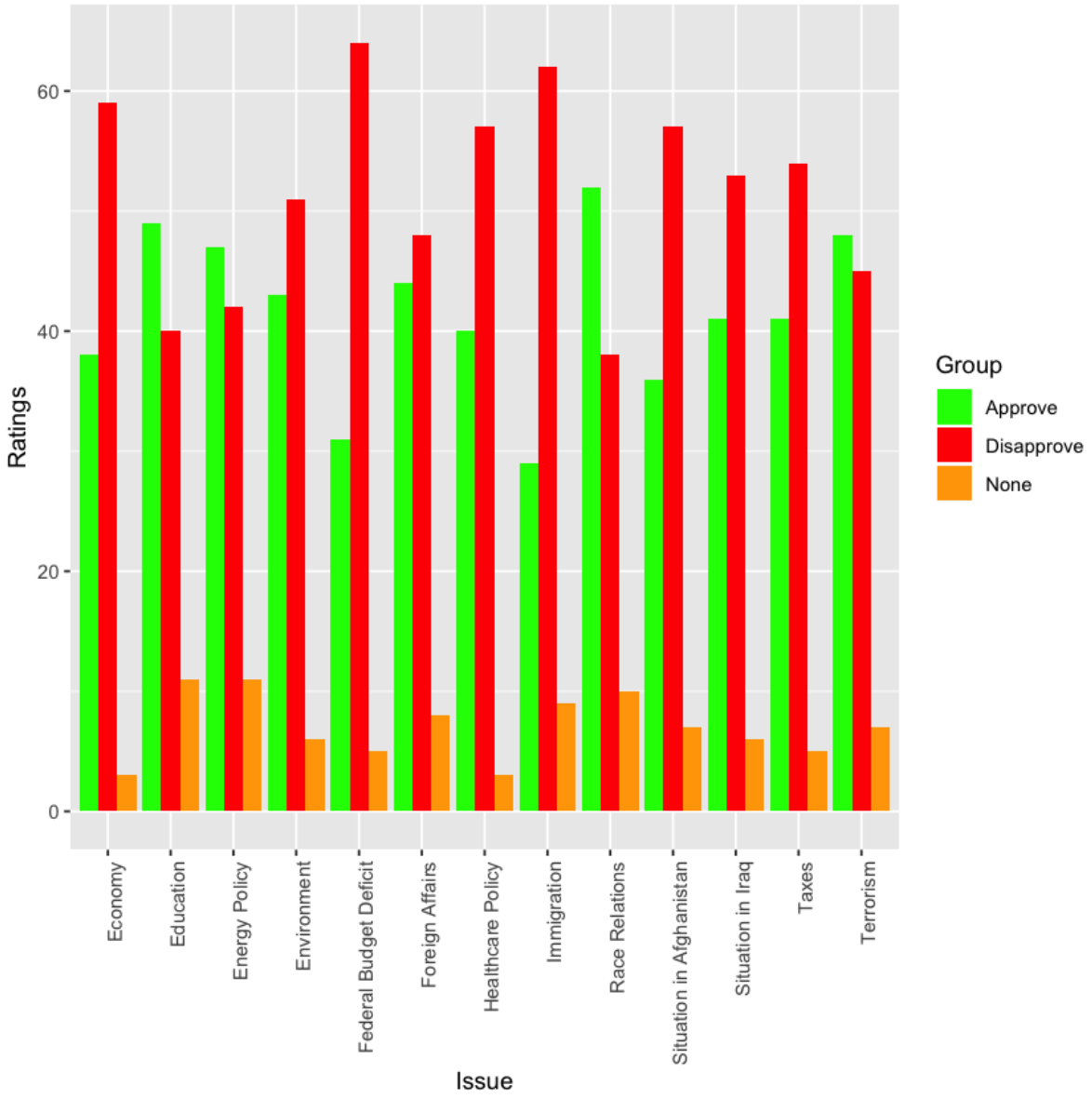
```
Registered S3 methods overwritten by 'ggplot2':
  method         from
  [.quosures     rlang
  c.quosures     rlang
  print.quosures rlang

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
```

In [2]:
```
# Read the excel data
df = xlsx::read.xlsx('obama-approval-ratings.xls', sheetIndex = 1, stringsAs
```

Bar chart - R

In [3]:
```
library(data.table)
library(ggplot2)
res <- as.data.frame(df)

data = df %>%
    tidyr::gather('Reaction','Ratings', Approve, Disapprove, None)

colors <- c("green", "red", "orange")
color_scale <- scale_fill_manual(name = "Group", values = colors)

# Plot stacked
ggplot2::ggplot(data = data, ggplot2::aes(x = Issue, y = Ratings, fill = Rea
    ggplot2:: geom_bar(stat='identity', position="dodge") +
    ggplot2::theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
    ggplot2::scale_fill_manual(name = "Group", values = colors)
```

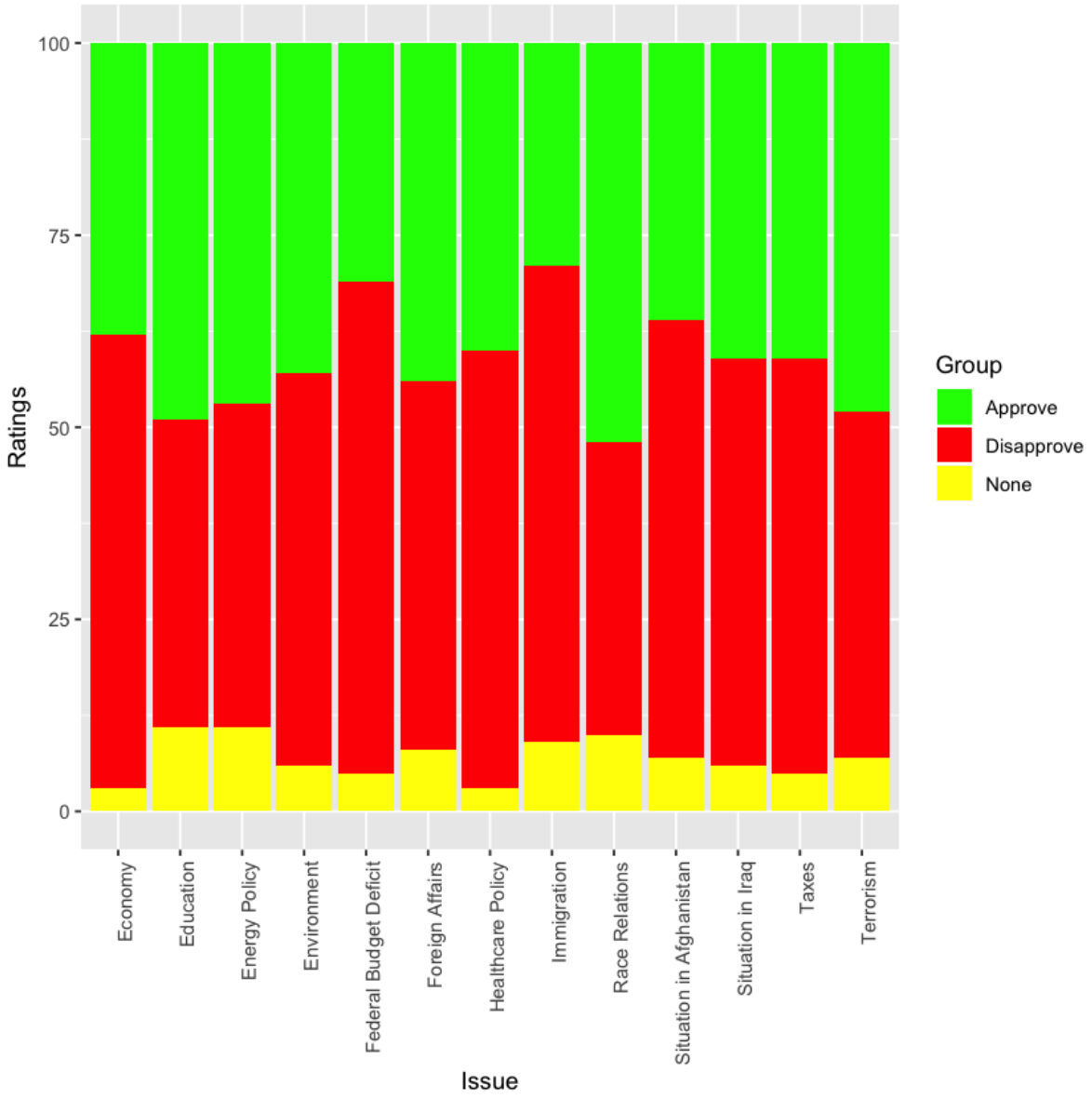
```
Attaching package: ‘data.table’

The following objects are masked from ‘package:dplyr’:

    between, first, last
```



Bar chart - R

In [4]:

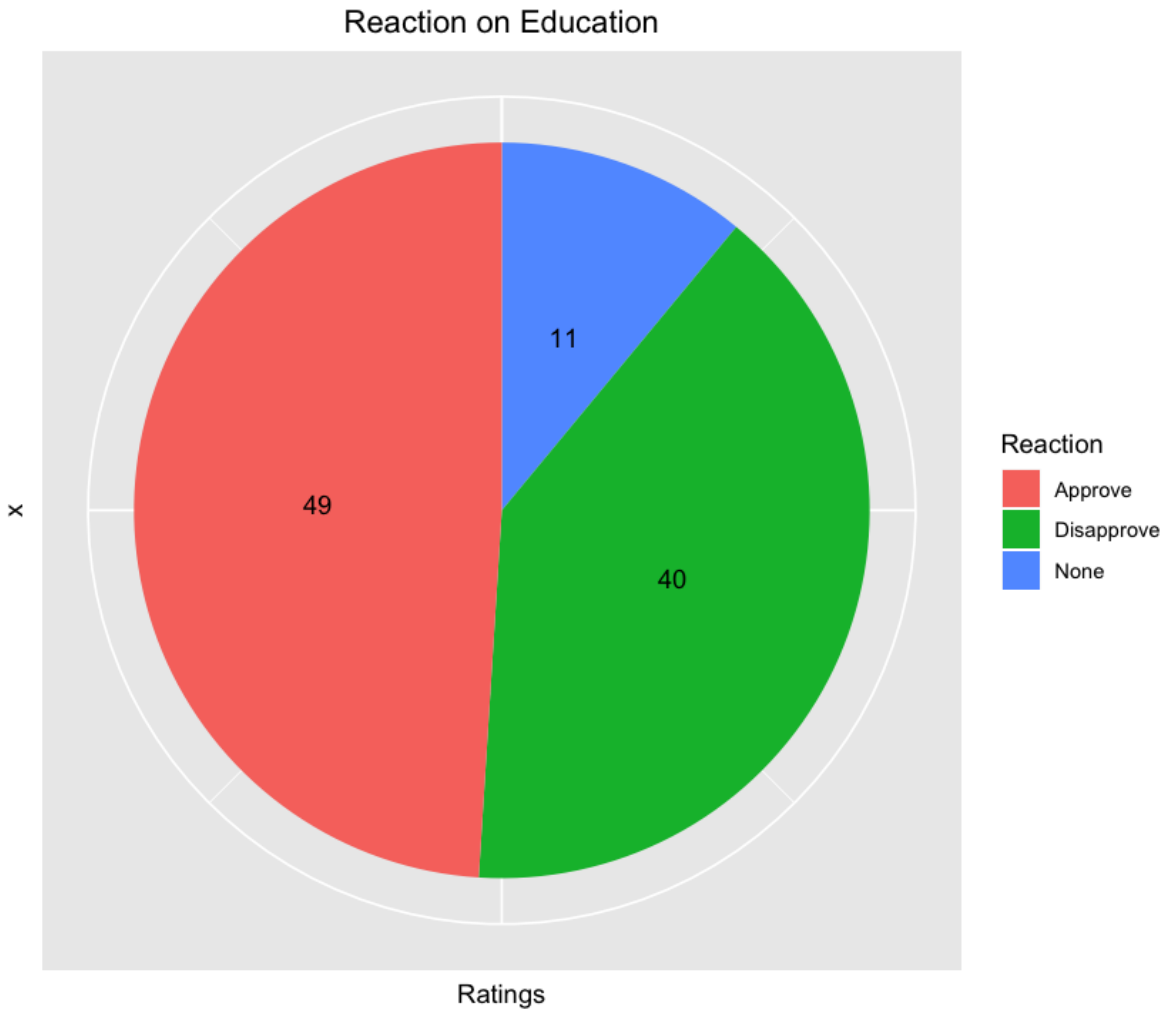
```
library(data.table)
library(ggplot2)
res <- as.data.frame(df)

data = df %>%
    tidyr::gather('Reaction','Ratings', Approve, Disapprove, None)

colors <- c("green", "red", "yellow")
color_scale <- scale_fill_manual(name = "Group", values = colors)

# Stacked bar plot
ggplot2::ggplot(data = data, ggplot2::aes(x = Issue, y = Ratings, fill = Rea
    ggplot2:: geom_bar(stat='identity') +
    ggplot2::theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
    ggplot2::scale_fill_manual(name = "Group", values = colors)
```



Pie chart - R

In [5]:

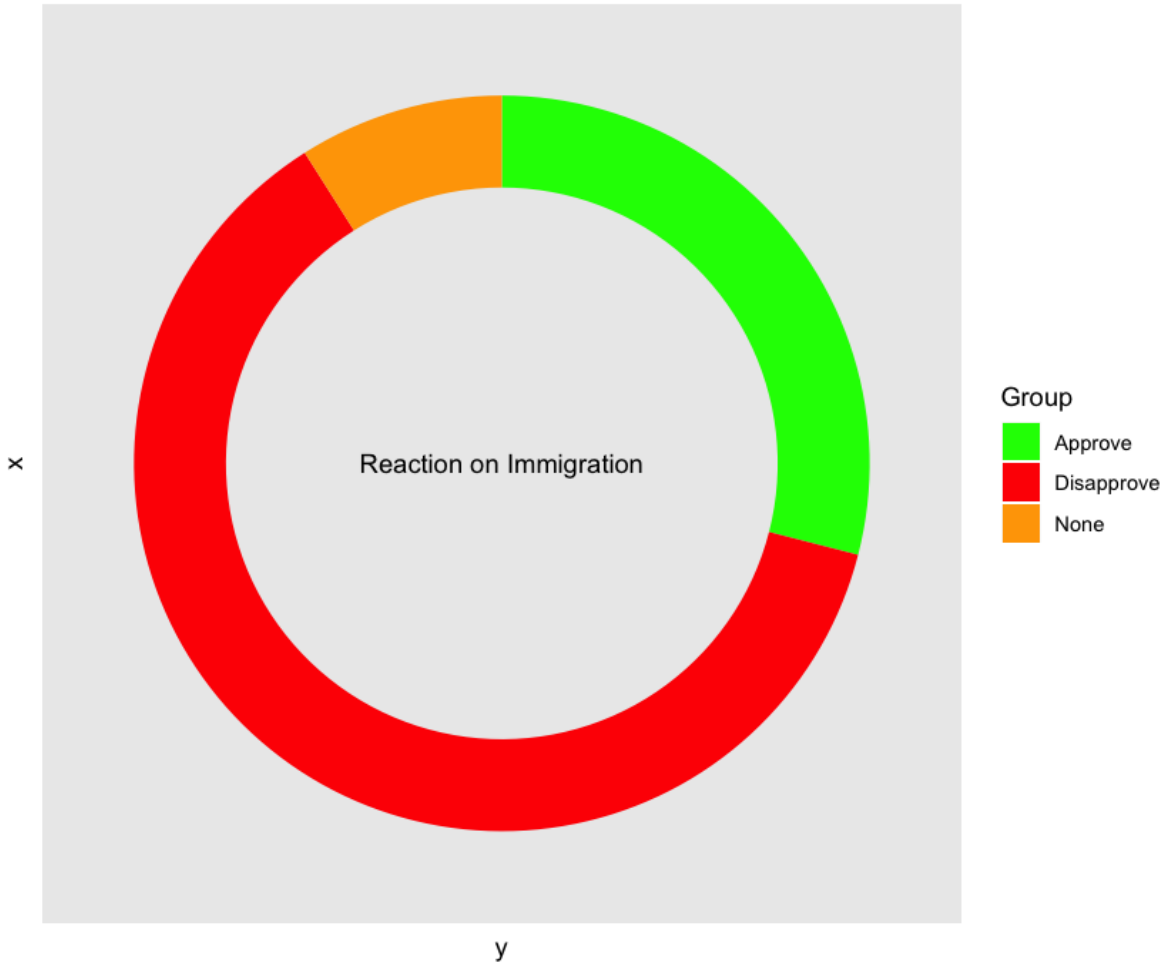
```r
# Lets plot a Pie chart for Reaction on Education issue
colors <- c("green", "red", "orange")
color_scale <- scale_fill_manual(name = "Group", values = colors)

data %>%
    dplyr::filter(Issue=='Education') %>%
    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(v
        ggplot2::ggtitle(label = 'Reaction on Education') +
        ## Bar chart - R +
        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]:

```
#Lets create a donut chart for Reation on Immigration issue
data %>%
    dplyr::filter(Issue=='Immigration') %>%
    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
         ggplot2::geom_rect() +
         ggplot2::scale_fill_manual(name = "Group", values = colors) +
         ggplot2::coord_polar(theta='y') +
         ggplot2::xlim(c(0, 4)) +
         ggplot2::annotate('text', x = 0, y = 0, label = 'Reaction on Immigr
         ggplot2::theme(panel.grid=element_blank(),
            axis.text.x=element_blank(),
            axis.text.y=element_blank(),
            axis.ticks=element_blank()) +
         ggplot2::labs(title='')
```



In [ ]:

Python Excercises

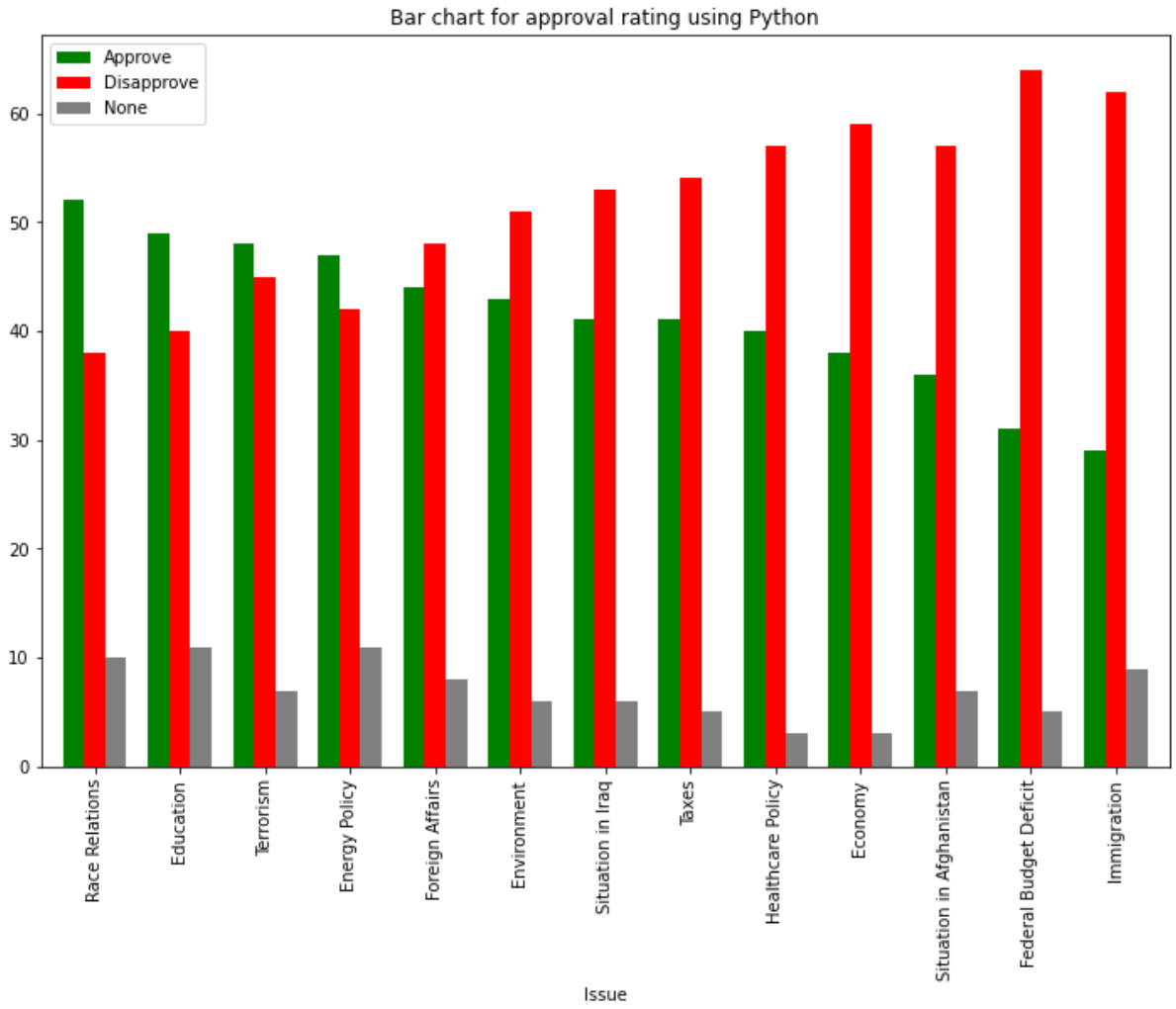
In [1]:
```
import pandas as pd
```

In [77]:
```
df1 = pd.read_excel('obama-approval-ratings.xls')
```

Bar Chart - Python

In [42]:
```
import matplotlib.colors

cmap = matplotlib.colors.LinearSegmentedColormap.from_list("", ["green","red

# Horizontal Bar Plot
df1.plot(x='Issue',
        kind='bar',
        stacked=False,
        width=0.75,
        title='Bar chart for approval rating using Python', figsize=(12,8),
```

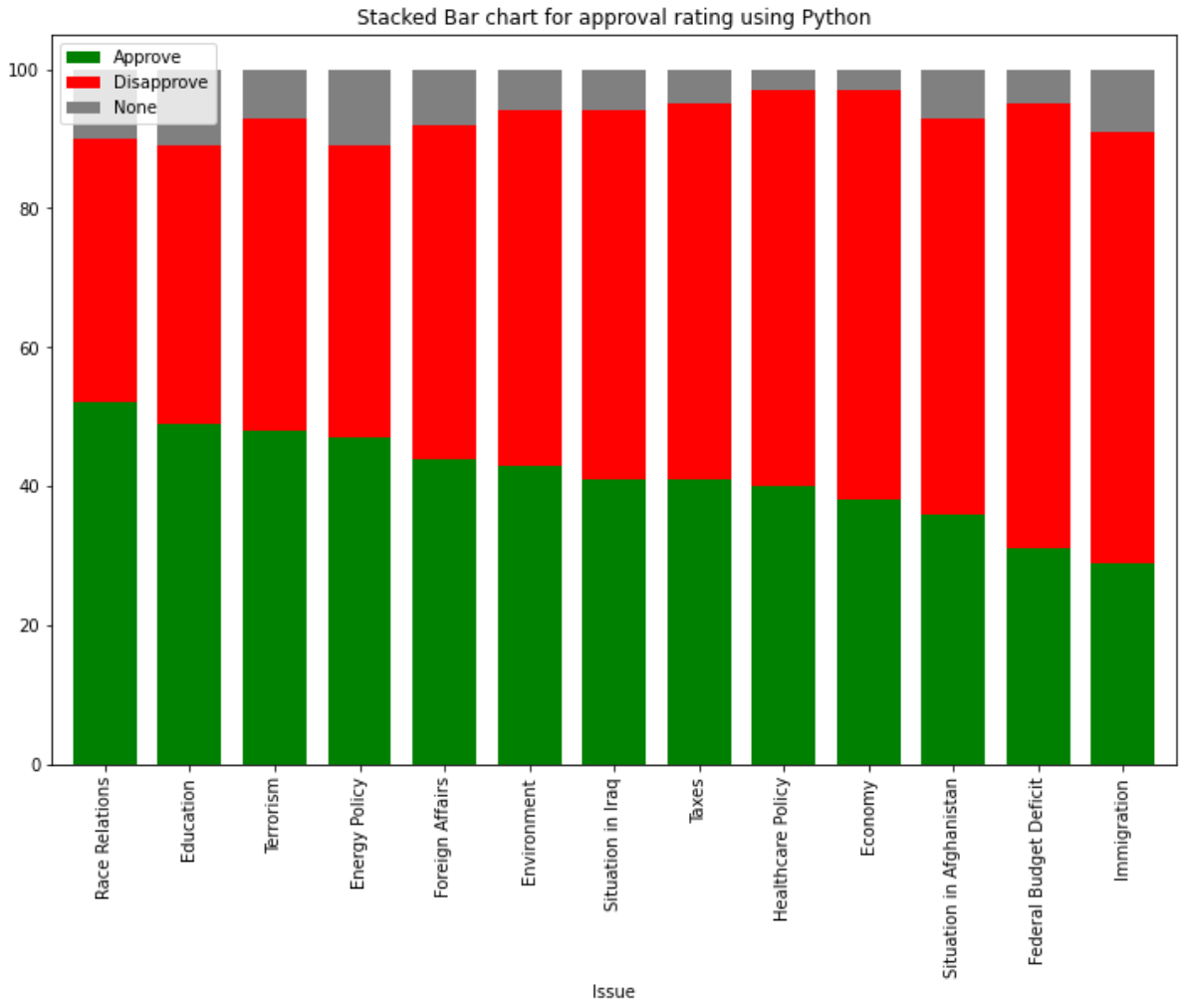
Out[42]:
```
<AxesSubplot:title={'center':'Bar chart for approval rating using Python'},
xlabel='Issue'>
```



Stacked Bar Chart - Python

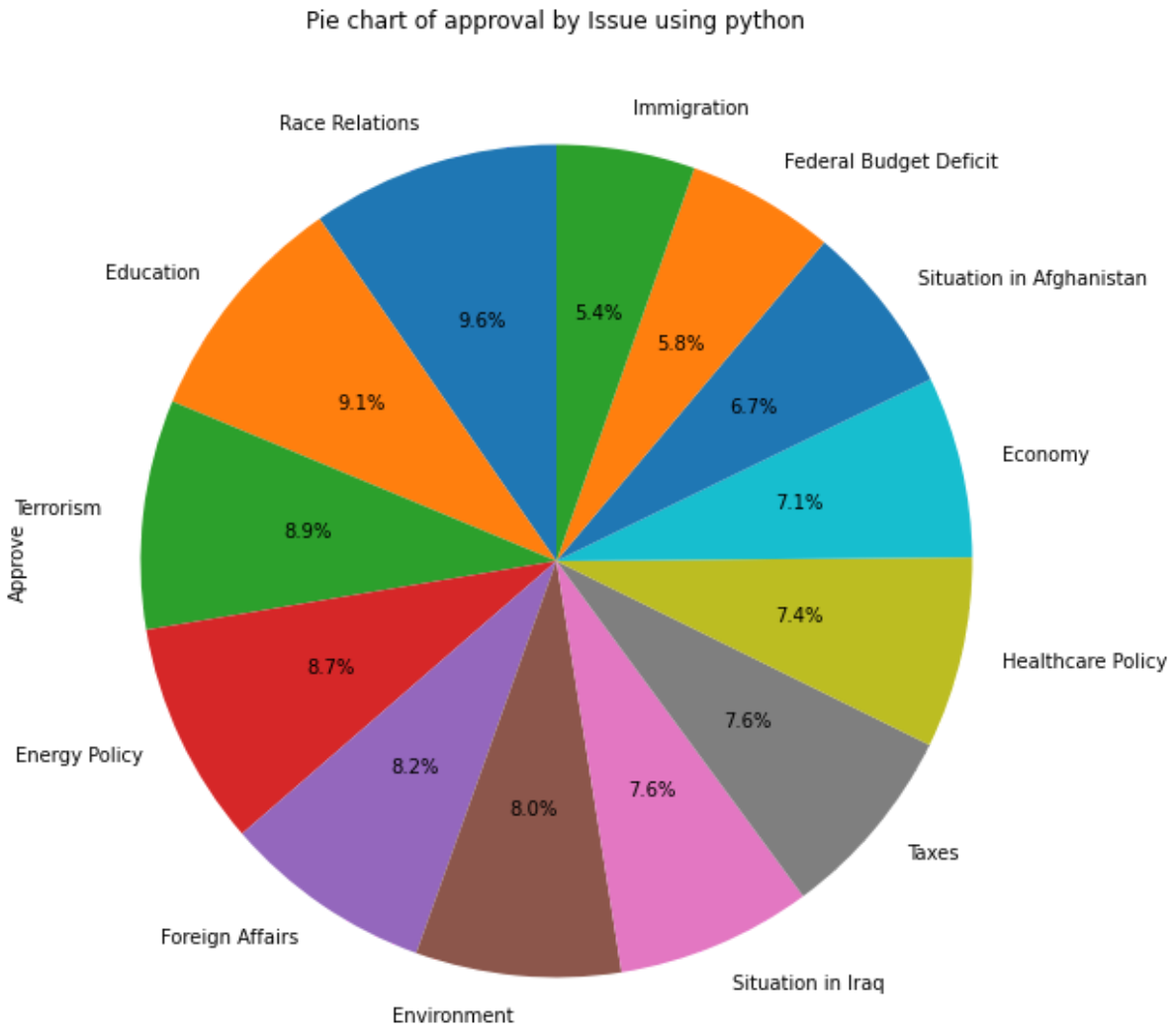
In [41]:
```
import matplotlib.colors

cmap = matplotlib.colors.LinearSegmentedColormap.from_list("", ["green","red

# Stacked Bar chart
df1.plot(x='Issue',
        kind='bar',
        stacked=True,
        width=0.75,
        title='Stacked Bar chart for approval rating using Python', figsize=
```

Out[41]:
```
<AxesSubplot:title={'center':'Stacked Bar chart for approval rating using P
ython'}, xlabel='Issue'>
```



Pie Chart - Python

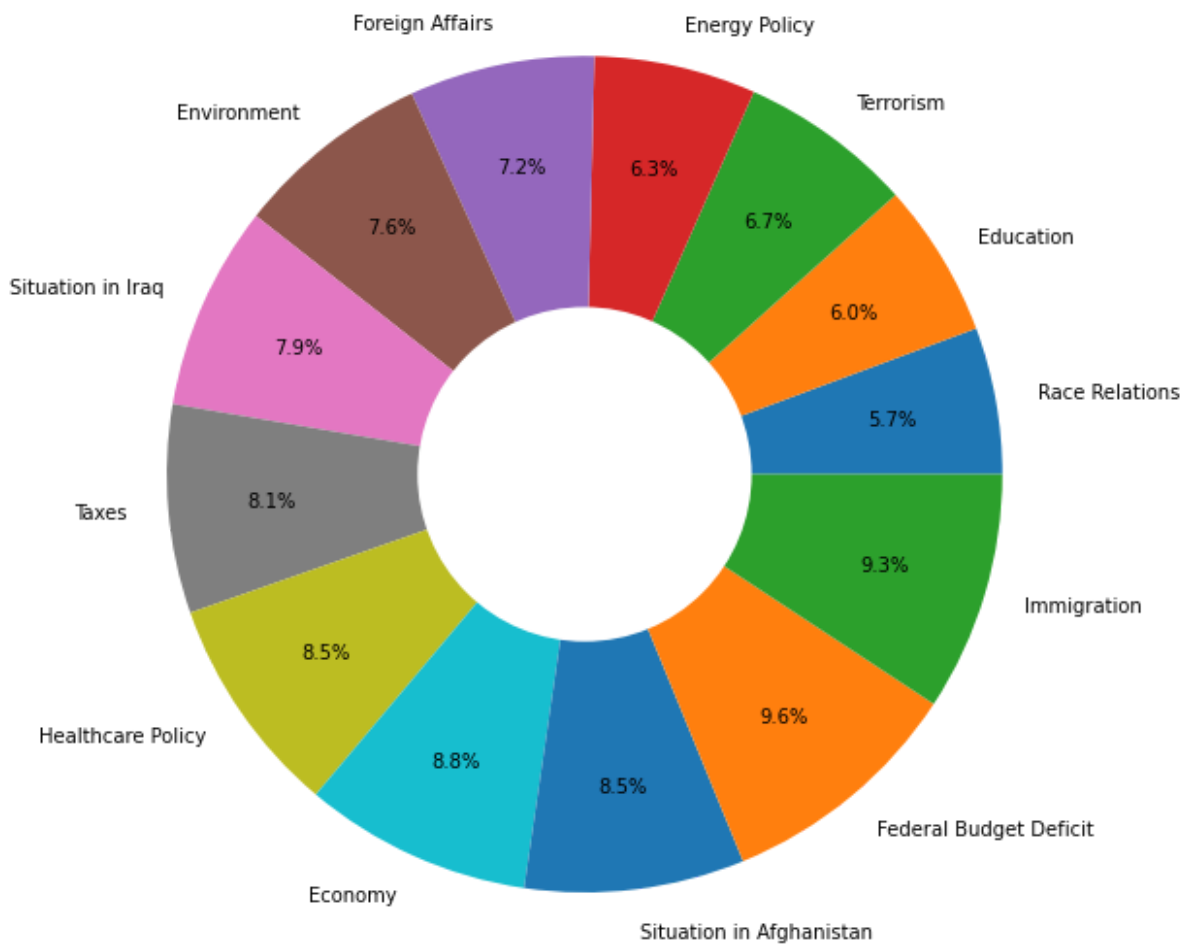
In [75]:
```
plt = df1.plot.pie(y='Approve', labels=df1['Issue'], title="Pie chart of app
```



In [76]:
```
# plt = df3['Country'].value_counts().plot(kind='pie', title='Pie chart for
# plt.legend(loc='best')
```

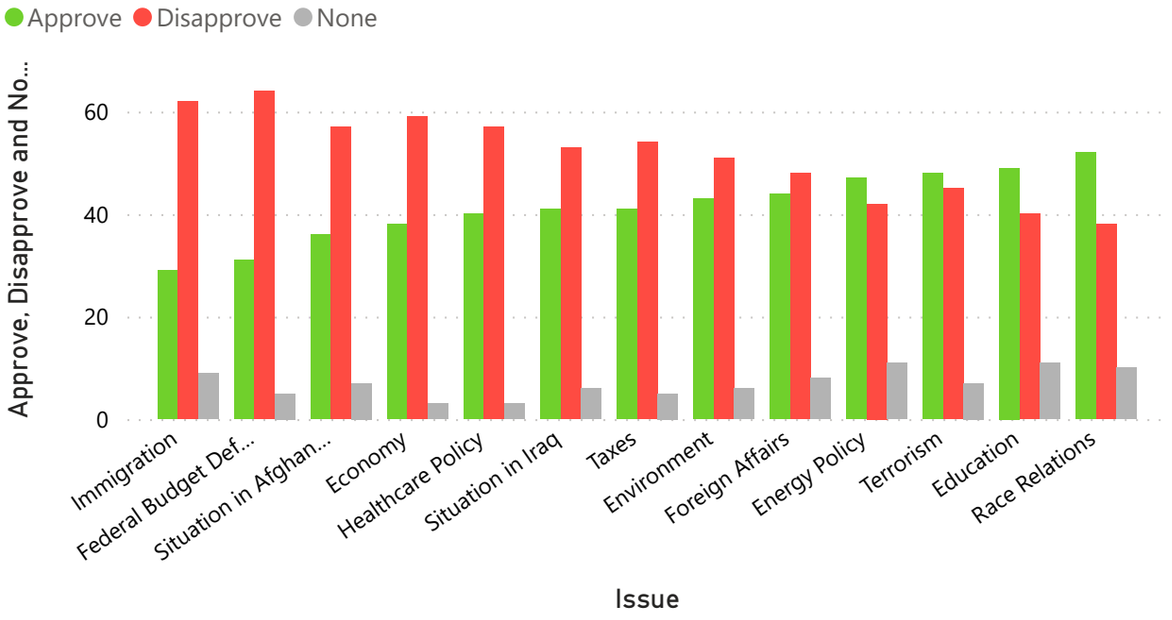
Donut chart - Python

In [88]:
```
import matplotlib.pyplot as plt

plt.pie(df1.Disapprove, labels=df1.Issue, autopct = '%1.1f%%', pctdistance =
circle = plt.Circle((0,0), 0.40, fc = 'white')
fig = plt.gcf()
fig.gca().add_artist(circle)
fig.set_size_inches(12, 8)

plt.title("Donut chart for disapproval percentage by Issue")
# Show compact plot
plt.tight_layout()
plt.show()
```

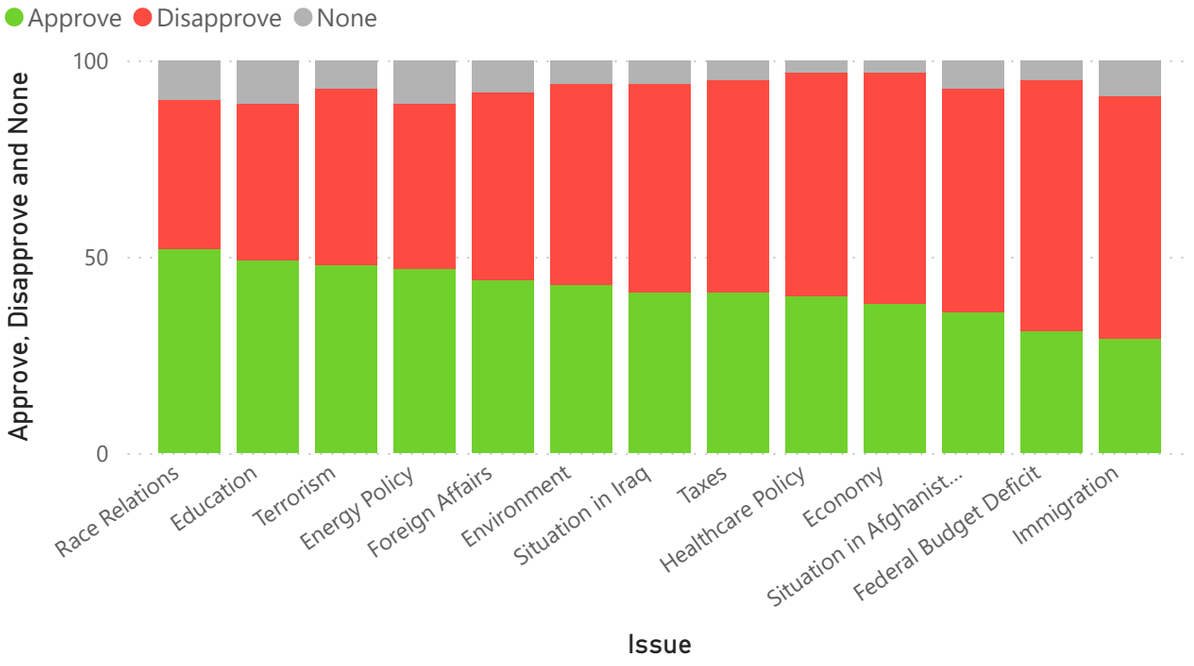

Donut chart for disapproval percentage by Issue
Foreign Affairs
Energy Policy
Environment
Terrorism
Education
Situation in Iraq
Race Relations
Taxes
Immigration
Healthcare Policy
Federal Budget Deficit
Economy
Situation in Afghanistan
7.2%
6.3%
6.7%
6.0%
5.7%
9.3%
9.6%
8.5%
8.8%
8.5%
7.9%
7.6%
8.1%

In [ ]:

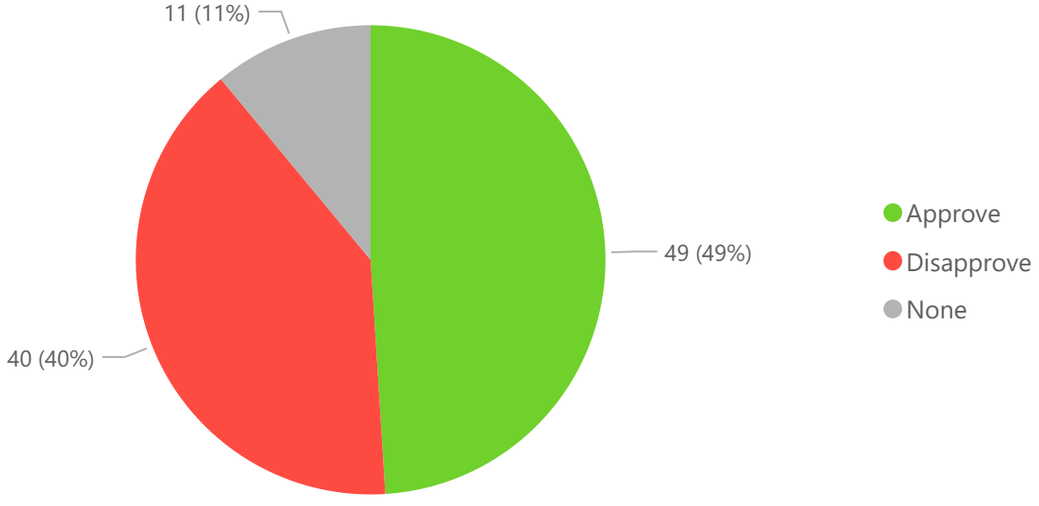
Bar Chart - PowerBI



Stacked Bar Chart - PowerBI



Pie Chart for Rating on Education



Donut Chart for Rating on Immigration