

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

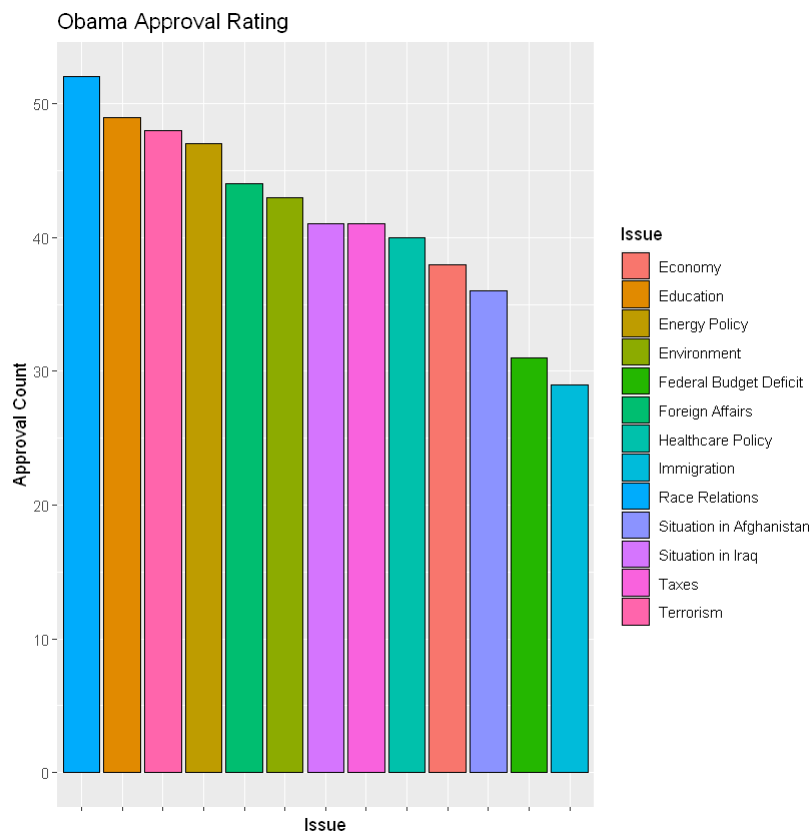
Issue	Approve	Disapprove	None
<chr>	<dbl>	<dbl>	<dbl>
Economy	38	59	3
Situation in Afghanistan	36	57	7
Federal Budget Deficit	31	64	5
Immigration	29	62	9

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

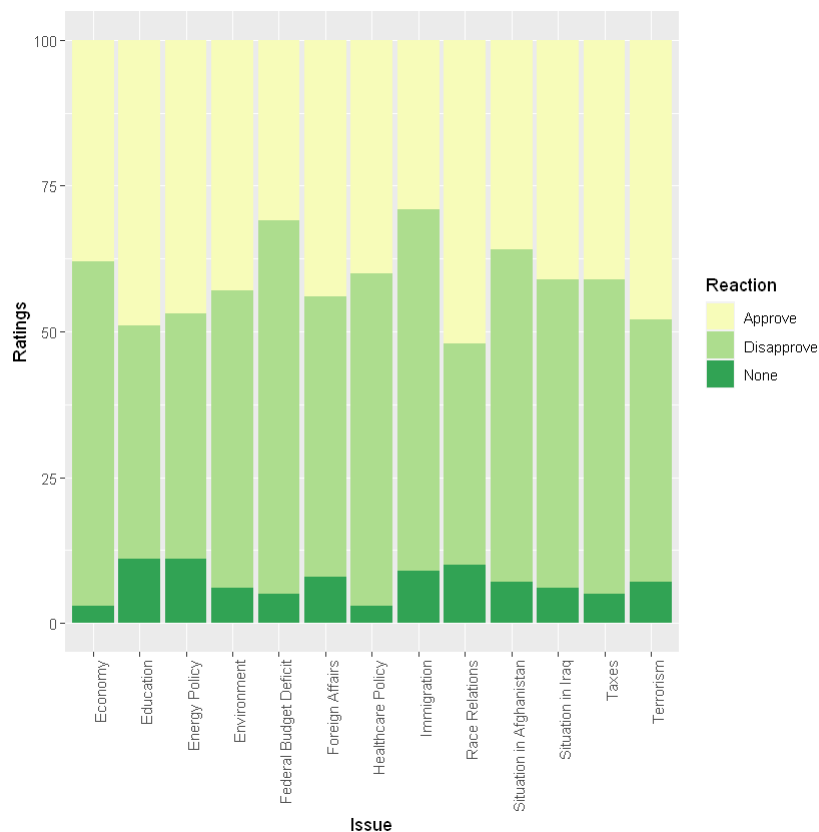
In [4]:

I will chart each issue with its corresponding Approval, Disapproval, and Neutral counts. For each topic, a 100% stacked bar chart will be produced in order to accurately depict the distribution of ratings.

```
obama_long = approval %>%
  tidyr::gather('Reaction', 'Ratings', Approve, Disapprove, None)
```

```
# Plot stacked
```

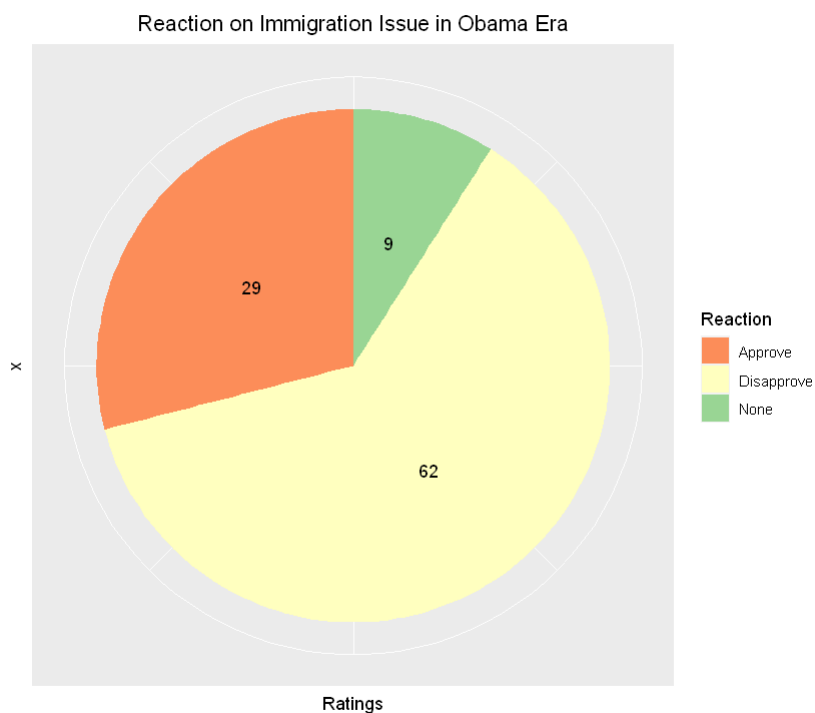
```
ggplot2::ggplot(data = obama_long, ggplot2::aes(x = Issue, y = Ratings, fill = Reaction)) +
  ggplot2::geom_bar(stat='identity') +
  ggplot2::theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
  ggplot2::scale_fill_brewer(palette = 15)
```



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='')
```

