Expercise_Chart_Python

September 14, 2020

#
Week 2 - Assignment
Prepare - Bar charts, Stacked bar charts, Pie charts, and Donut charts>
By
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0.0.1 Introduction: Assignment Details

You need to submit 3 bar charts, 3 stacked bar charts, 3 pie charts, and 3 donut charts using Tableau or PowerBI, Python and R using the data from the link below (the link will download a zipped folder containing three data files.) You may also use your own datasets if you wish. You can also submit using D3 if you choose – but it is not required. You can choose which library to use in Python or R, documentation is provided to help you decide and as you start to play around in the libraries, you will decide which you prefer.

0.0.2 Source Data

https://content.bellevue.edu/cst/dsc/640/datasets/ex1-2.zip

[1]:
```
# Impprt required libraries/packages
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt


# configure display of graph
%matplotlib inline
```

0.0.3 Load data into a dataframe

[2]:
```
# load the csv file as a data frame
obama_rating = pd.read_excel('ex1-2/obama-approval-ratings.xls')
# summarize the shape of the dataset
print("Dataset Shape: ",obama_rating.shape)
# see the sample of the data
print("\n\nSample Data: ")
obama_rating.head()
```

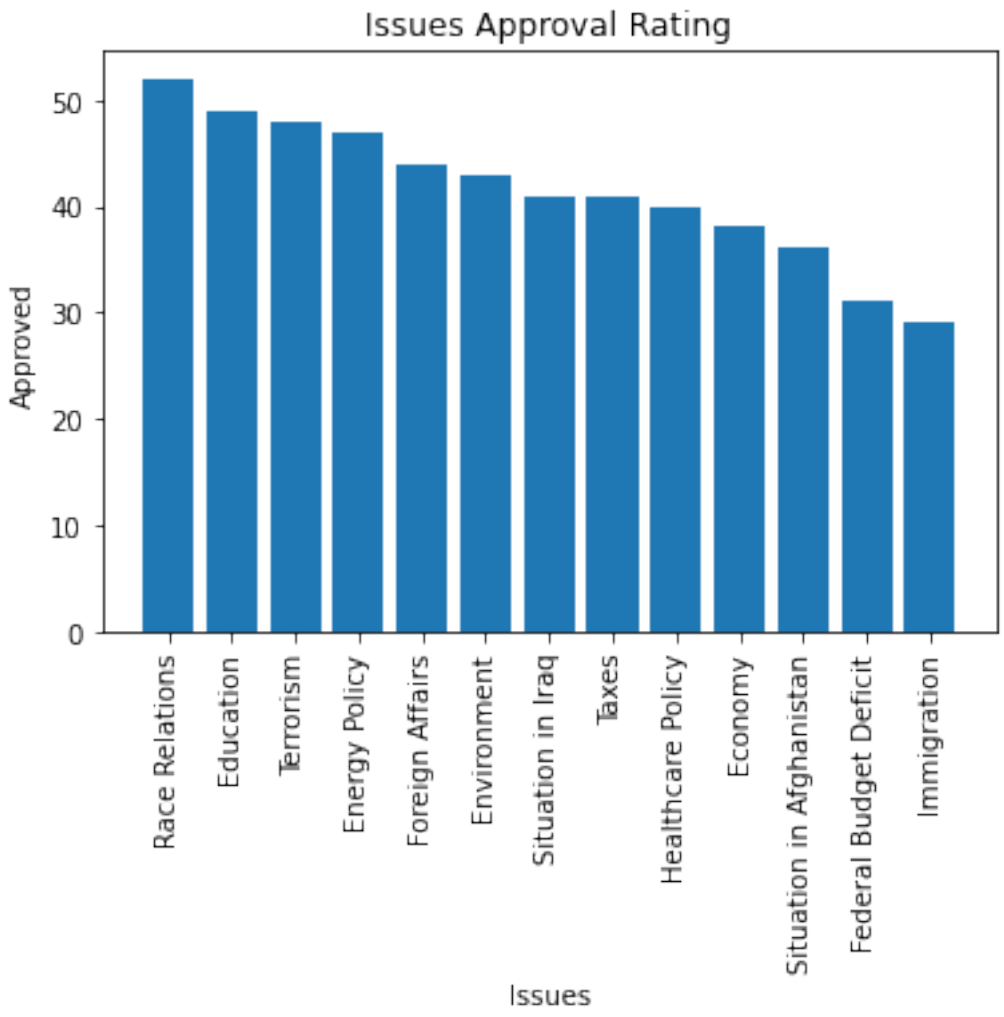
```
Dataset Shape:  (13, 4)


Sample Data:
```

[2]:

	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

0.1 Bar Chart

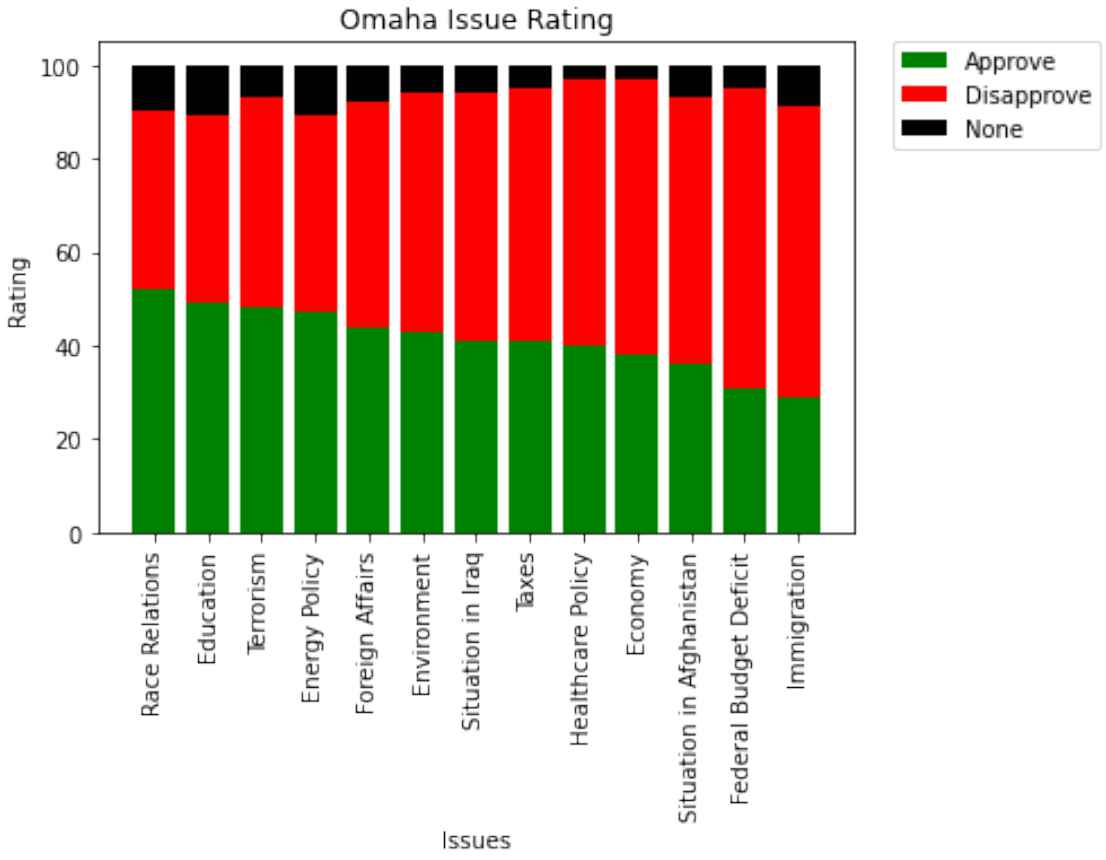
[3]:
```
# Plot bar chart

plt.bar(obama_rating['Issue'], obama_rating['Approve'])
plt.xlabel('Issues')
plt.xticks(rotation=90)
plt.ylabel('Approved')
plt.title('Issues Approval Rating')
plt.show()
```



0.2 Stacked Bar Chart

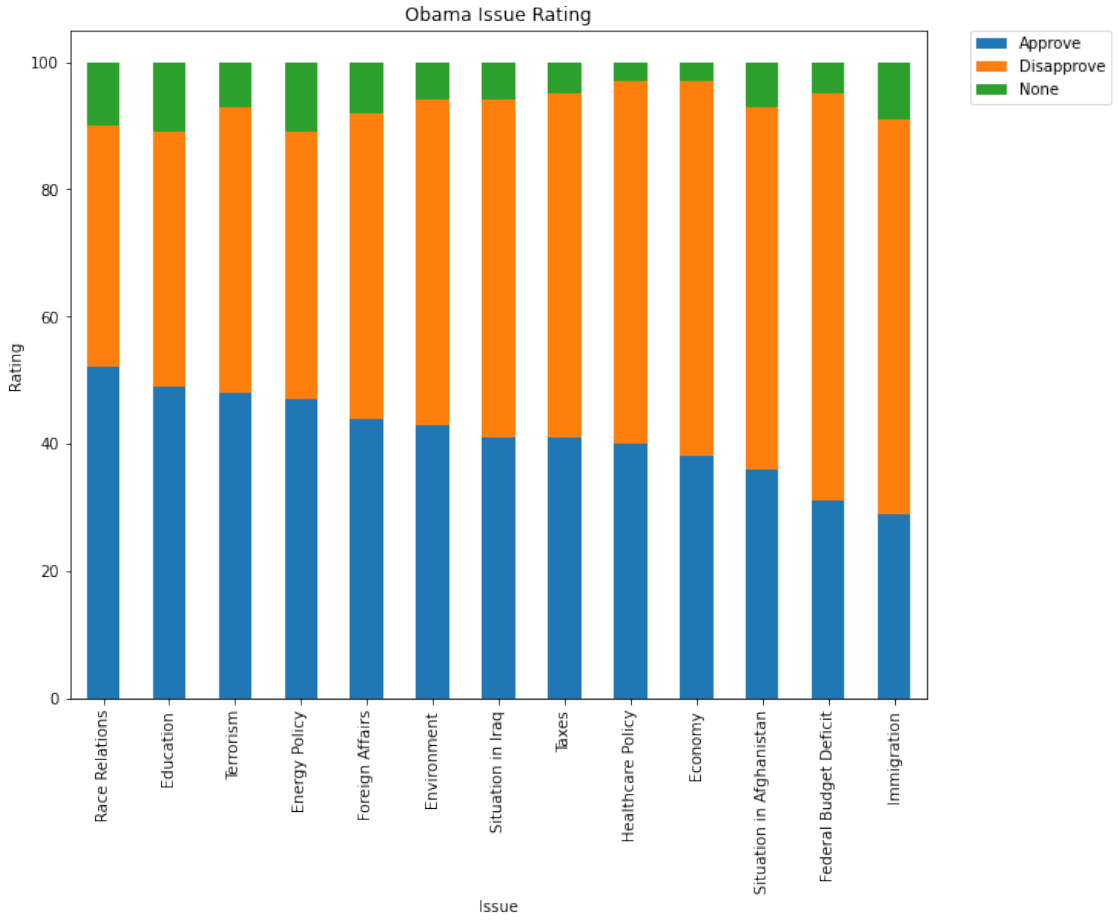
[4]:
```
# the first one is as usual
p1 = plt.bar(obama_rating['Issue'], obama_rating['Approve'], color="GREEN")

# the second to create stacked bar on top of p1
p2 = plt.bar(obama_rating['Issue'], obama_rating['Disapprove'],␣
 ↪bottom=obama_rating['Approve'], color="RED")

# Set heights of p1 + p2
bars = np.add(obama_rating['Approve'], obama_rating['Disapprove']).tolist()


# the third one is special to create stacked bar plots on top of p1 + p2
```

```
p3 = plt.bar(obama_rating['Issue'], obama_rating['None'], bottom=bars,␣
 ↪color="BLACK")

# Label & title setting
plt.xticks(rotation=90)
plt.xlabel('Issues')
plt.ylabel('Rating')
plt.title('Omaha Issue Rating')

# Legend setting
plt.legend((p1, p2, p3), ('Approve', 'Disapprove', 'None'), loc='upper left',
           bbox_to_anchor=(1.05, 1), borderaxespad=0.)

# Show graph
plt.show()
```



1 Another way - Stacked Bar Chart

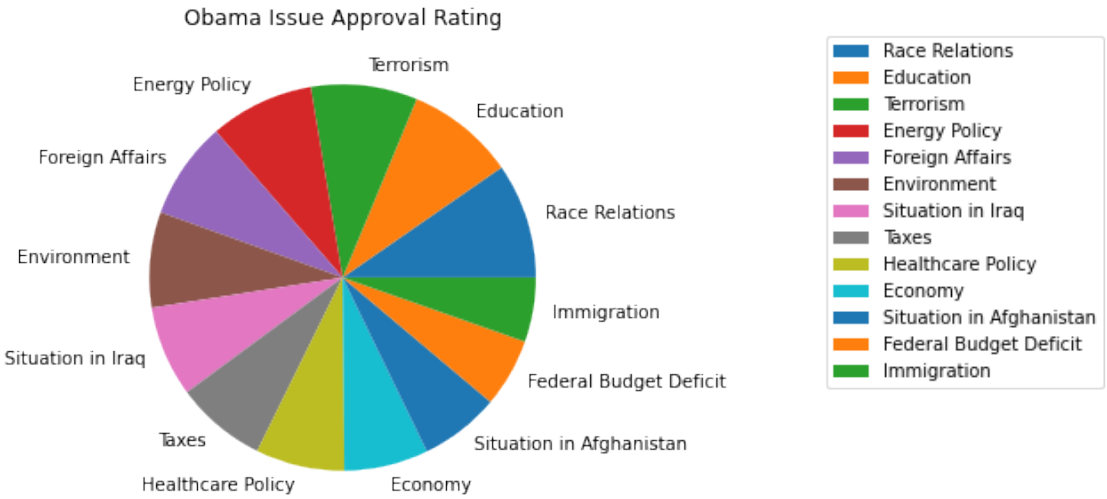
[5]:
```
obama_rating = obama_rating.set_index('Issue')
p1 = obama_rating.plot(kind='bar', stacked=True, figsize=(10,8))
plt.ylabel('Rating')
plt.legend(loc='upper left', bbox_to_anchor=(1.05, 1), borderaxespad=0.)
plt.title('Obama Issue Rating')
plt.show()
```



1.1 Pie Chart

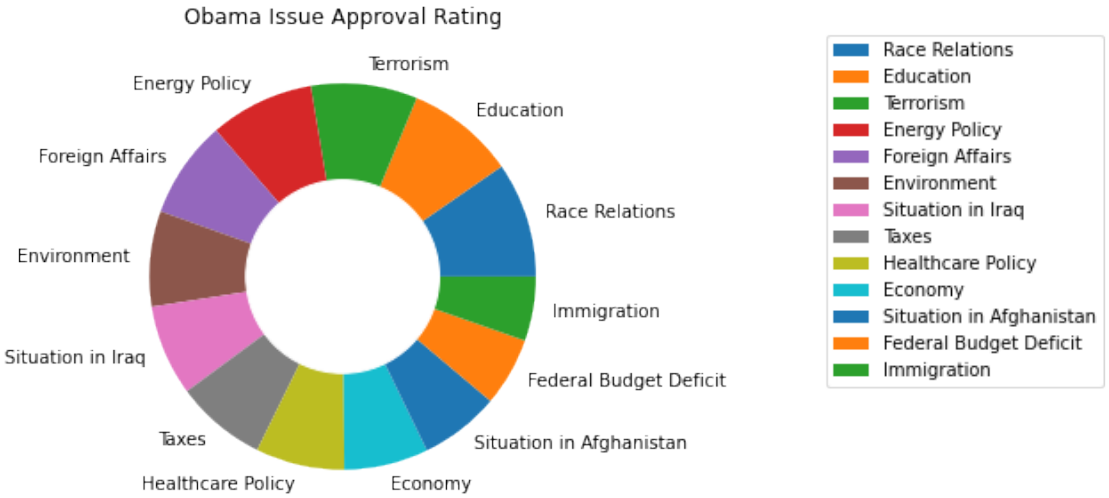
[6]:
```
# Plot pie chart
plot = obama_rating.plot.pie(y='Approve', figsize=(5, 5))
plt.legend(loc='upper left', bbox_to_anchor=(1.5, 1), borderaxespad=0.)
plt.title('Obama Issue Approval Rating')

# Hide label text
ax = plt.gca()
```

```
ax.axes.xaxis.set_visible(False)
ax.axes.yaxis.set_visible(False)

plt.show()
```



2 Donut Chart

[7]:
```
# Plot pie chart
plot = obama_rating.plot.pie(y='Approve', figsize=(5, 5))
plt.legend(loc='upper left', bbox_to_anchor=(1.5, 1), borderaxespad=0.)
plt.title('Obama Issue Approval Rating')

# Hide label text
ax = plt.gca()
ax.axes.xaxis.set_visible(False)
ax.axes.yaxis.set_visible(False)

# add a circle at the center
my_circle=plt.Circle( (0,0), 0.5, color='white')
p=plt.gcf()
p.gca().add_artist(my_circle)

plt.show()
```


Obama Issue Approval Rating
Terrorism
Energy Policy
Education
Foreign Affairs
Race Relations
Environment
Immigration
Situation in Iraq
Federal Budget Deficit
Taxes
Situation in Afghanistan
Healthcare Policy
Economy
Race Relations
Education
Terrorism
Energy Policy
Foreign Affairs
Environment
Situation in Iraq
Taxes
Healthcare Policy
Economy
Situation in Afghanistan
Federal Budget Deficit
Immigration

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