Chapter 6 - ex 7: TreeMap - Waffle Chart

Part 1: TreeMap

- Cho dữ liệu là danh sách ứng viên và số phiếu bầu trong cuộc bầu cử tổng thống Mỹ năm 2016.
- Vẽ 3 TreeMap thể hiện tỷ lệ số phiếu bầu lần lượt cho ứng viên ở Virginia, Maryland và West Virginia

Part 2: Waffle Chart

- Vẽ waffle Chart thể hiện tỷ lệ số phiếu bầu tổng cho từng ứng viên

Part 1:

In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
from pywaffle import Waffle
```

In [2]:
```
df = pd.DataFrame(
    {
        'Name': ['Hillary Clinton', 'Donald Trump', 'Others'],
        'Virginia': [1981473, 1769443, 233715],
        'Maryland': [1677928, 943169, 160349],
        'West Virginia': [188794, 489371, 36258],
    }
)
```

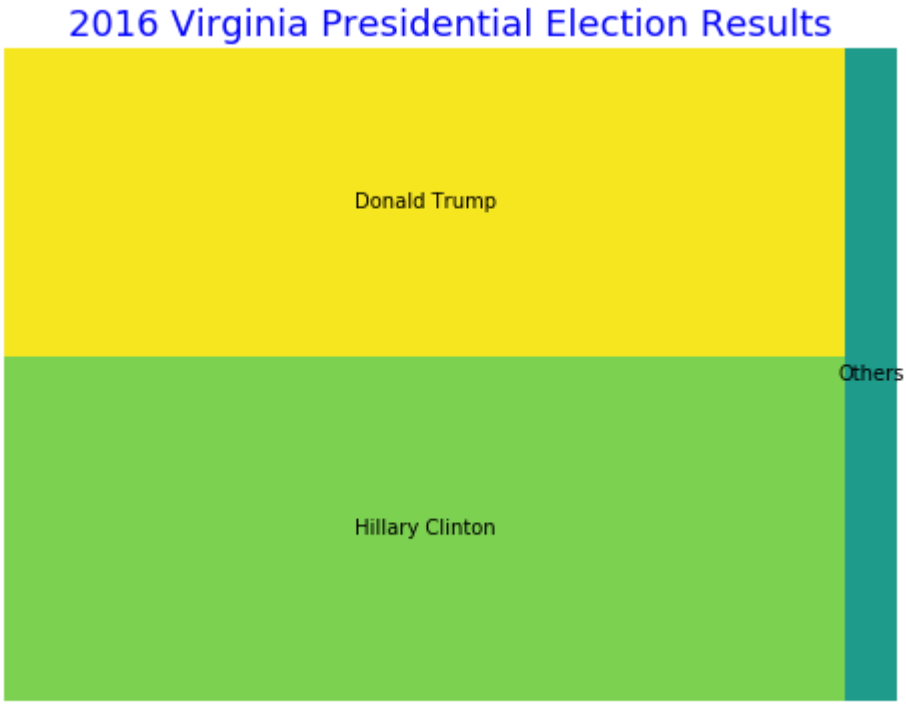
In [3]:
```
df
```

Out[3]:

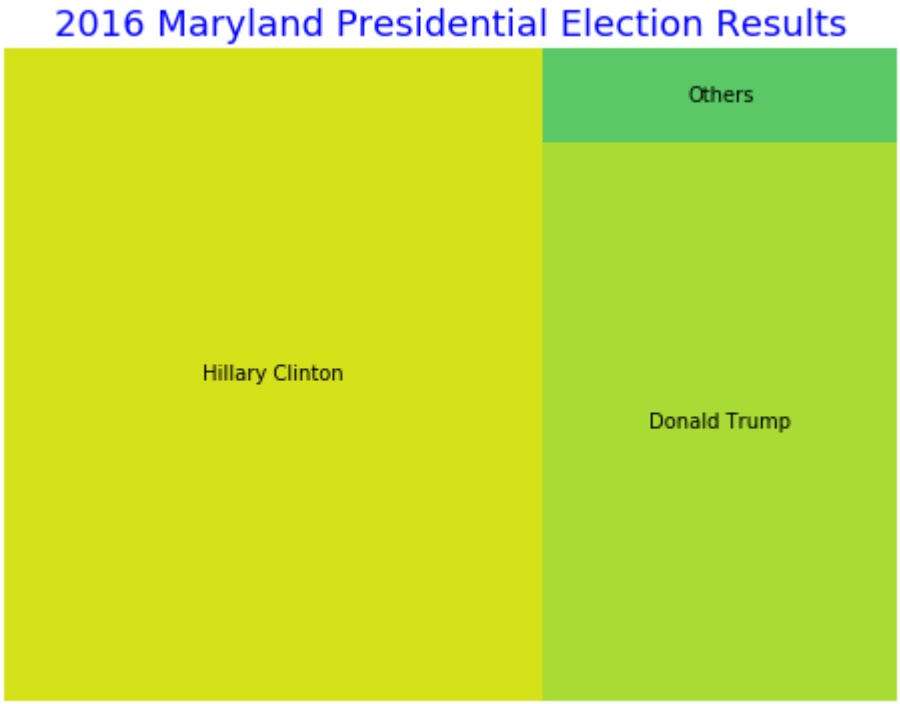
	Name	Virginia	Maryland	West Virginia
0	Hillary Clinton	1981473	1677928	188794
1	Donald Trump	1769443	943169	489371
2	Others	233715	160349	36258

In [4]:
```
import squarify
```

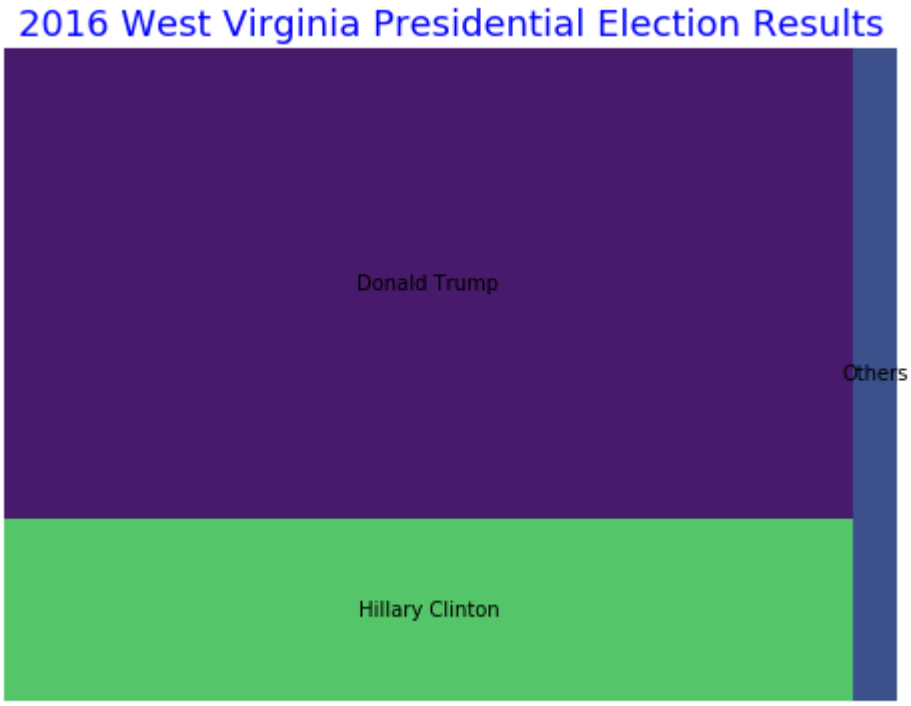
In [5]:
```
# with 2 lists
plt.figure(figsize=(8,6))
squarify.plot(sizes=df.Virginia.values, label=df.Name.values)
plt.title("2016 Virginia Presidential Election Results", fontsize=18, color = 'b')
plt.axis('off')
plt.show()
```



In [6]:
```
# with 2 lists
plt.figure(figsize=(8,6))
squarify.plot(sizes=df.Maryland.values, label=df.Name.values)
plt.title("2016 Maryland Presidential Election Results", fontsize=18, color = 'b')
plt.axis('off')
plt.show()
```



In [7]:
```
# with 2 lists
plt.figure(figsize=(8,6))
squarify.plot(sizes=df['West Virginia'].values, label=df.Name.values)
plt.title("2016 West Virginia Presidential Election Results", fontsize=18, color =
plt.axis('off')
plt.show()
```



In [8]:
```
df['Total'] = df.Virginia + df.Maryland + df['West Virginia']
df
```

Out[8]:

	Name	Virginia	Maryland	West Virginia	Total
0	Hillary Clinton	1981473	1677928	188794	3848195
1	Donald Trump	1769443	943169	489371	3201983
2	Others	233715	160349	36258	430322

Part 2: Waffle Chart

- Vẽ waffle Chart thể hiện tỷ lệ số phiếu bầu tổng cho từng ứng viên

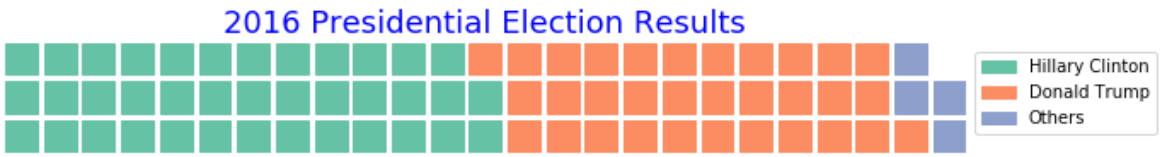
In [9]:
```
# Scare total value to 1/100000
total = round(df.Total/100000)
total.values
```

Out[9]:
```
array([38., 32.,  4.])
```

In [10]:
```
# legend, figsize
fig = plt.figure(
    FigureClass=Waffle,
    rows=df.shape[0],
    values=list(total),
    labels=list(df.Name),
    figsize=(10, 5),
    legend={'loc': 'upper left', 'bbox_to_anchor': (1, 1)
    }
)
plt.title("2016 Presidential Election Results", fontsize=18, color = 'b')
```

Out[10]:
```
Text(0.5,1,'2016 Presidential Election Results')
```

```
c:\program files\python36\lib\site-packages\matplotlib\figure.py:2267: UserWar
ning: This figure includes Axes that are not compatible with tight_layout, so
results might be incorrect.
  warnings.warn("This figure includes Axes that are not compatible "
```



In [ ]:
```
```