

ASumbaraju_wk1-2_Charts

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0.1 DSC640

0.2 Aditya Sumbaraju

0.3 Exercise 1.2 - charts

```
[91]: import matplotlib
import matplotlib.pyplot as plt
import pandas as pd
import xlrd
from matplotlib import rc
```

```
[92]: df_hotdog_places = pd.read_excel('C:\BU\DSC640\ex1-2\hotdog-places.xlsm',
    ↳sheet_name='hot-dog-places')
df_hotdog_places
```

```
[92]:
```

| | Location | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|----------|------|------|------|------|------|------|------|------|------|------|------|
| 0 | East | 25 | 50.0 | 50.5 | 44.5 | 53.5 | 49 | 54 | 66 | 59 | 68.0 | 54 |
| 1 | Mid-West | 24 | 31.0 | 26.0 | 30.5 | 38.0 | 37 | 52 | 63 | 59 | 64.5 | 43 |
| 2 | West | 22 | 23.5 | 25.5 | 29.5 | 32.0 | 32 | 37 | 49 | 42 | 55.0 | 37 |

```
[93]: hotdogs_df = pd.melt(df_hotdog_places, id_vars = ['Location'],
    ↳value_vars=[2000, 2001, 2002, 2003, 2004, 2005,2006, 2007, 2008, 2009, 2010]
    ↳)
hotdogs_df
hotdogs_df.rename(columns = {'variable' : 'Year', 'value':'Count'}, inplace =
    ↳True)
hotdogs_df
```

```
[93]:
```

| | Location | Year | Count |
|---|----------|------|-------|
| 0 | East | 2000 | 25.0 |
| 1 | Mid-West | 2000 | 24.0 |
| 2 | West | 2000 | 22.0 |
| 3 | East | 2001 | 50.0 |
| 4 | Mid-West | 2001 | 31.0 |
| 5 | West | 2001 | 23.5 |
| 6 | East | 2002 | 50.5 |
| 7 | Mid-West | 2002 | 26.0 |
| 8 | West | 2002 | 25.5 |

| | | | |
|----|----------|------|------|
| 9 | East | 2003 | 44.5 |
| 10 | Mid-West | 2003 | 30.5 |
| 11 | West | 2003 | 29.5 |
| 12 | East | 2004 | 53.5 |
| 13 | Mid-West | 2004 | 38.0 |
| 14 | West | 2004 | 32.0 |
| 15 | East | 2005 | 49.0 |
| 16 | Mid-West | 2005 | 37.0 |
| 17 | West | 2005 | 32.0 |
| 18 | East | 2006 | 54.0 |
| 19 | Mid-West | 2006 | 52.0 |
| 20 | West | 2006 | 37.0 |
| 21 | East | 2007 | 66.0 |
| 22 | Mid-West | 2007 | 63.0 |
| 23 | West | 2007 | 49.0 |
| 24 | East | 2008 | 59.0 |
| 25 | Mid-West | 2008 | 59.0 |
| 26 | West | 2008 | 42.0 |
| 27 | East | 2009 | 68.0 |
| 28 | Mid-West | 2009 | 64.5 |
| 29 | West | 2009 | 55.0 |
| 30 | East | 2010 | 54.0 |
| 31 | Mid-West | 2010 | 43.0 |
| 32 | West | 2010 | 37.0 |

```
[94]: #summary tables by year
hotdog_year = hotdogs_df.groupby(['Year']).sum().reset_index()
#summary tables by Location
hotdog_place = hotdogs_df.groupby(['Location']).sum().reset_index()
# summary tables by year and location
hotdog_year_place = hotdogs_df.groupby(['Location', 'Year']).sum().reset_index()
```

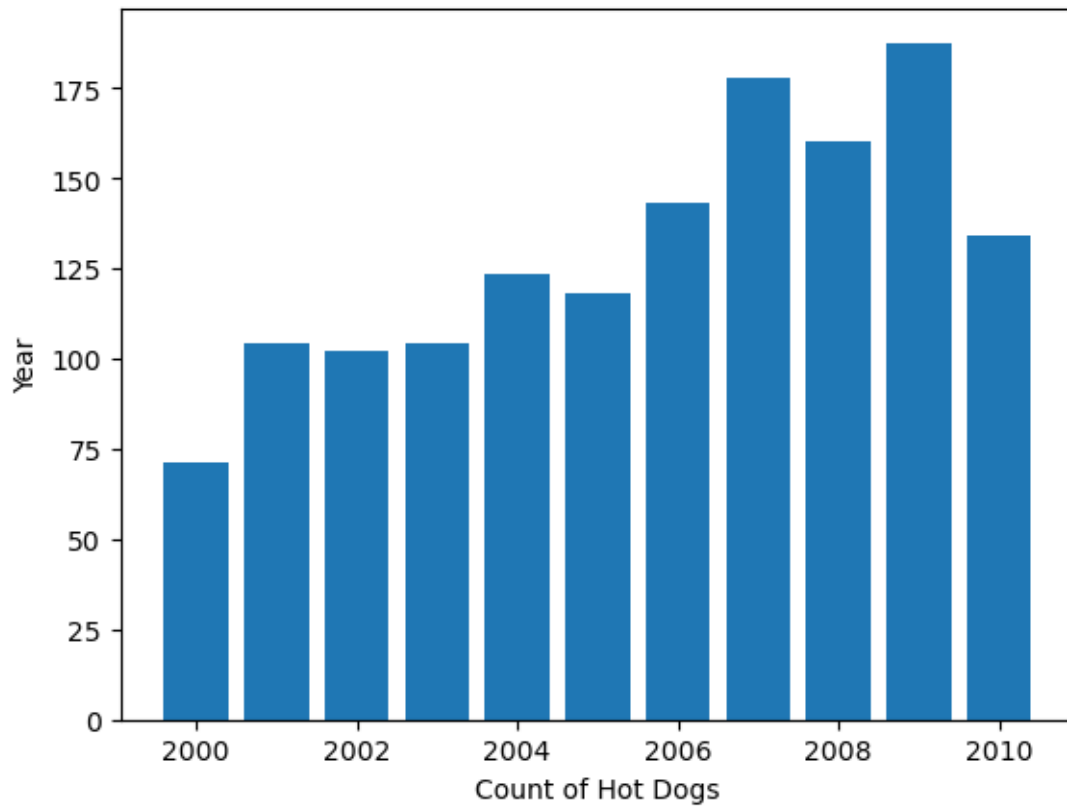
```
[105]: # Bar Graph
plt.rcParams()
fig, ax = plt.subplots()

#sort descending
hotdog_year = hotdog_year.sort_values(by=['Count'], ascending=True)

plt.bar(hotdog_year['Year'], hotdog_year['Count'])
ax.set_xlabel('Count of Hot Dogs')
ax.set_ylabel('Year')
fig.suptitle('Hot Dogs - Year based consumption Chart')

plt.show()
```

Hot Dogs - Year based consumption Chart



```
[96]: hotdog_year_place
```

```
[96]:
```

| | Location | Year | Count |
|----|----------|------|-------|
| 0 | East | 2000 | 25.0 |
| 1 | East | 2001 | 50.0 |
| 2 | East | 2002 | 50.5 |
| 3 | East | 2003 | 44.5 |
| 4 | East | 2004 | 53.5 |
| 5 | East | 2005 | 49.0 |
| 6 | East | 2006 | 54.0 |
| 7 | East | 2007 | 66.0 |
| 8 | East | 2008 | 59.0 |
| 9 | East | 2009 | 68.0 |
| 10 | East | 2010 | 54.0 |
| 11 | Mid-West | 2000 | 24.0 |
| 12 | Mid-West | 2001 | 31.0 |
| 13 | Mid-West | 2002 | 26.0 |
| 14 | Mid-West | 2003 | 30.5 |

| | | | |
|----|----------|------|------|
| 15 | Mid-West | 2004 | 38.0 |
| 16 | Mid-West | 2005 | 37.0 |
| 17 | Mid-West | 2006 | 52.0 |
| 18 | Mid-West | 2007 | 63.0 |
| 19 | Mid-West | 2008 | 59.0 |
| 20 | Mid-West | 2009 | 64.5 |
| 21 | Mid-West | 2010 | 43.0 |
| 22 | West | 2000 | 22.0 |
| 23 | West | 2001 | 23.5 |
| 24 | West | 2002 | 25.5 |
| 25 | West | 2003 | 29.5 |
| 26 | West | 2004 | 32.0 |
| 27 | West | 2005 | 32.0 |
| 28 | West | 2006 | 37.0 |
| 29 | West | 2007 | 49.0 |
| 30 | West | 2008 | 42.0 |
| 31 | West | 2009 | 55.0 |
| 32 | West | 2010 | 37.0 |

```
[97]: # Slicing and dicing data based on Location
East = hotdog_year_place[hotdog_year_place['Location']=='East'].iloc[:, 2:3]
Mid_West = hotdog_year_place[hotdog_year_place['Location']=='Mid-West'].iloc[:, 2:3].reset_index()
Mid_West.drop(['index'], inplace=True, axis=1)
West = hotdog_year_place[hotdog_year_place['Location']=='West'].iloc[:, 2:3].reset_index()
West.drop(['index'], inplace=True, axis=1)
#East, Mid_West, West
```

```
[98]: # Stacked Chart
# y-axis in bold
rc('font', weight='bold')

# Values of each group
bars1 = East['Count']
bars2 = Mid_West['Count']
bars3 = West['Count']

# Heights of bars1 + bars2
bars = np.add(bars1, bars2).tolist()

# The position of the bars on the x-axis
r = first.index.tolist()

# Names of group and bar width
names = hotdog_year_place['Year']
barWidth = 1
```

```

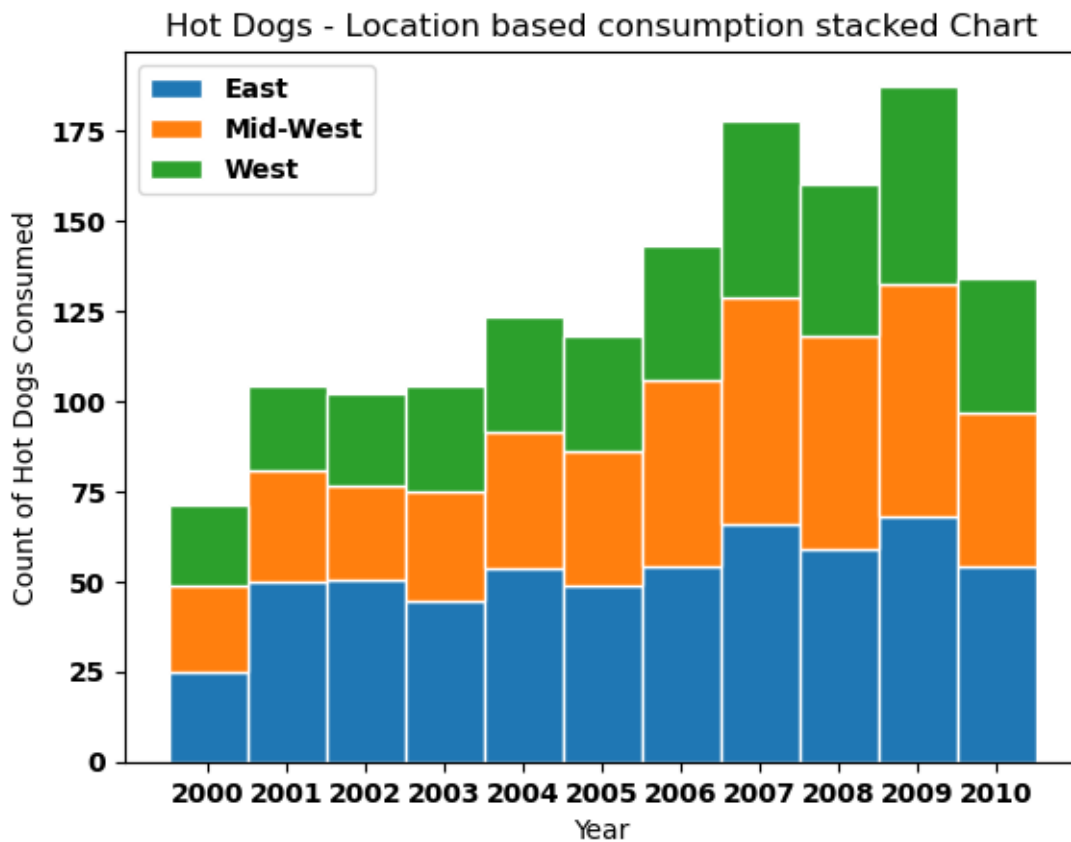
names=set(names)
#names

# Create brown bars
plt.bar(r, bars1, edgecolor='white', width=barWidth, label='East')
# Create green bars (middle), on top of the first ones
plt.bar(r, bars2, bottom=bars1, edgecolor='white', width=barWidth,
        label='Mid-West')
# Create green bars (top)
plt.bar(r, bars3, bottom=bars, edgecolor='white', width=barWidth, label='West')

# Custom X axis
plt.title('Hot Dogs - Location based consumption stacked Chart')
plt.xticks(r, names, fontweight='bold')
plt.xlabel("Year")
plt.ylabel('Count of Hot Dogs Consumed')
plt.legend()

# Show graphic
plt.show()

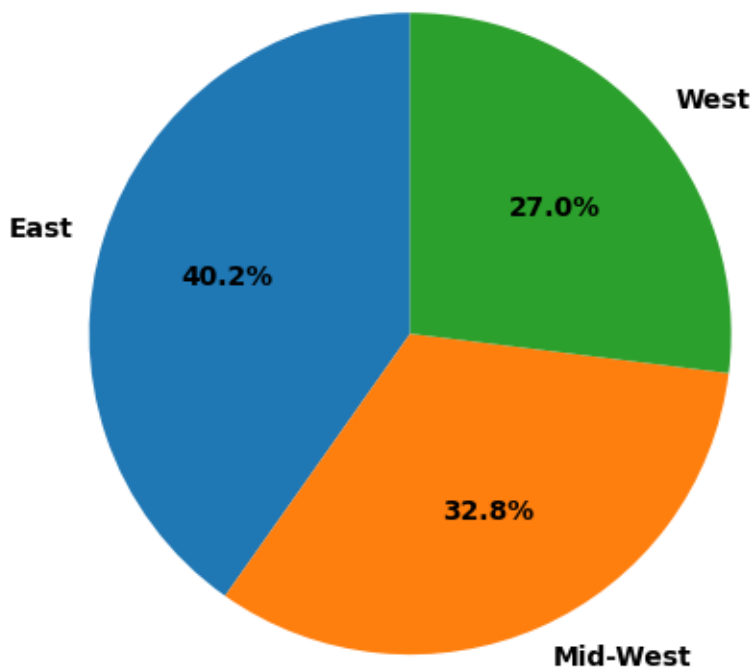
```



```
[99]: #pie chart
sizes = hotdog_place['Count']
labels = hotdog_place['Location']

fig1, ax1 = plt.subplots()
ax1.pie(sizes, labels=labels, autopct='%1.1f%%',
        shadow=False, startangle=90)
ax1.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.
plt.title('Hot Dogs Pie chart - % of Hotdogs consumed per Location')
plt.show()
```

Hot Dogs Pie chart - % of Hotdogs consumed per Location



```
[100]: #donut chart
# create data
names=hotdog_place['Location']
size=hotdog_place['Count']

# Create a circle for the center of the plot
my_circle=plt.Circle( (0,0), 0.7, color='white')

plt.pie(size, labels=names)
p=plt.gcf()
p.gca().add_artist(my_circle)
```

```
plt.title('Hot Dogs Consumed for Each Place')  
plt.show()
```

