1.3PythonCharts_AHarvey

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0.0.1 Exercise 1.3 - Charts

Python

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```
[3]: # Load libraries. Pandas for loading data and plots. Matplotlib for plots.␣
      ↪Numpy for the one rounding portion of my pie chart.
     import pandas as pd
     import matplotlib.pyplot as plt
     import numpy as np
```

```
[13]: # Import Excel files into dataframe
      places = pd.read_excel('hotdog-places.xlsm', header = None)
```

```
[14]: places.head()
```

```
[14]:       0       1       2       3       4   5   6   7   8       9  10
      0  2000  2001.0  2002.0  2003.0  2004.0 2005 2006 2007 2008  2009.0 2010
      1    25    50.0    50.5    44.5    53.5  49  54  66  59    68.0  54
      2    24    31.0    26.0    30.5    38.0  37  52  63  59    64.5  43
      3    22    23.5    25.5    29.5    32.0  32  37  49  42    55.0  37
```

```
[15]: # Transpose the column because it is easier for me to manipulate the dataframe␣
       ↪when it is swapped.
      places_t = places.transpose()
```

```
[27]: # Rename the column names so that they are easier to call.
      places_t.columns = ['Year', 'First', 'Second', 'Third']
```

```
[28]: places_t.head()
```

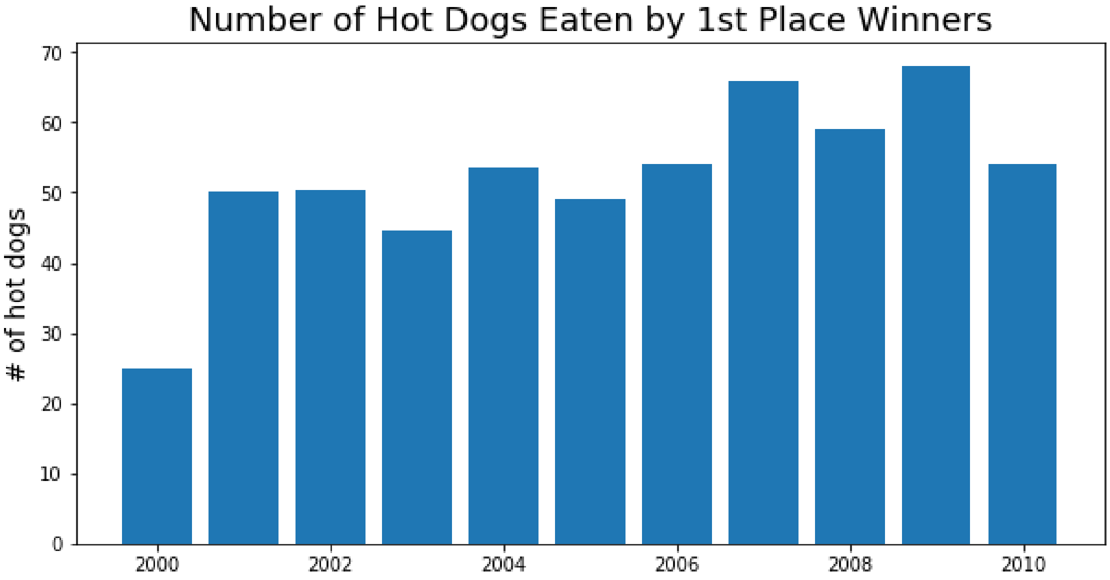
```
[28]:    Year  First  Second  Third
      0  2000   25.0    24.0   22.0
      1  2001   50.0    31.0   23.5
      2  2002   50.5    26.0   25.5
      3  2003   44.5    30.5   29.5
      4  2004   53.5    38.0   32.0
```

```
[29]: # Need to convert the year so that it's not a float in order for it to read␣
       ↪more nicely in a plot.
      places_t.Year = places_t.Year.astype(int)
```

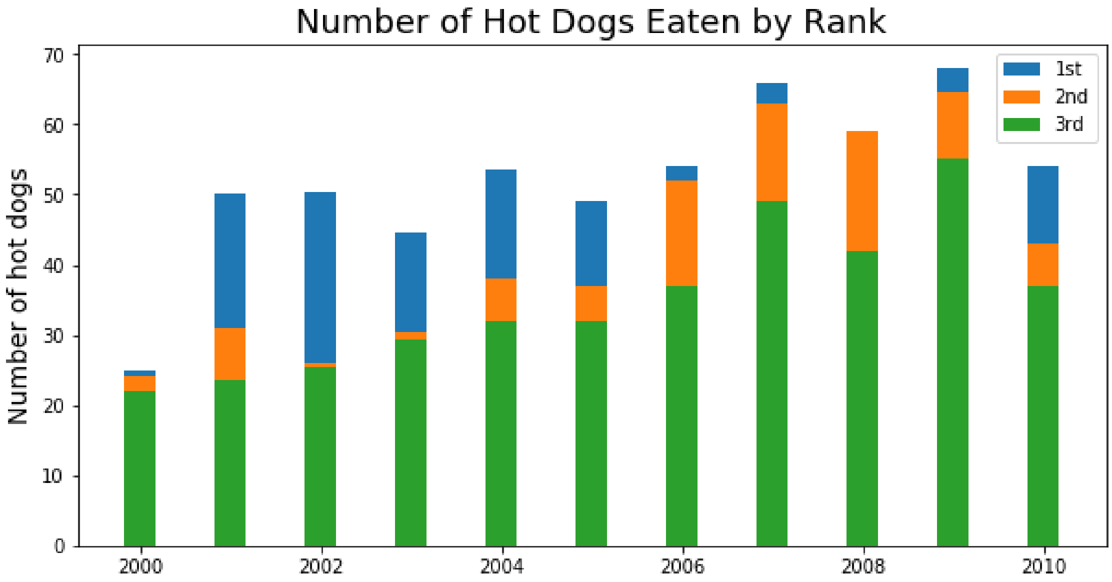
```
[30]: places_t.head()
```

```
[30]:    Year  First  Second  Third
      0  2000   25.0    24.0   22.0
      1  2001   50.0    31.0   23.5
      2  2002   50.5    26.0   25.5
      3  2003   44.5    30.5   29.5
      4  2004   53.5    38.0   32.0
```

```
[34]: # Bar plot
      plt.figure(figsize=(10, 5))

      plt.bar(places_t['Year'], places_t['First'])
      plt.title('Number of Hot Dogs Eaten by 1st Place Winners', fontsize = 18)
      plt.ylabel('# of hot dogs', fontsize = 14)
      plt.show()
```

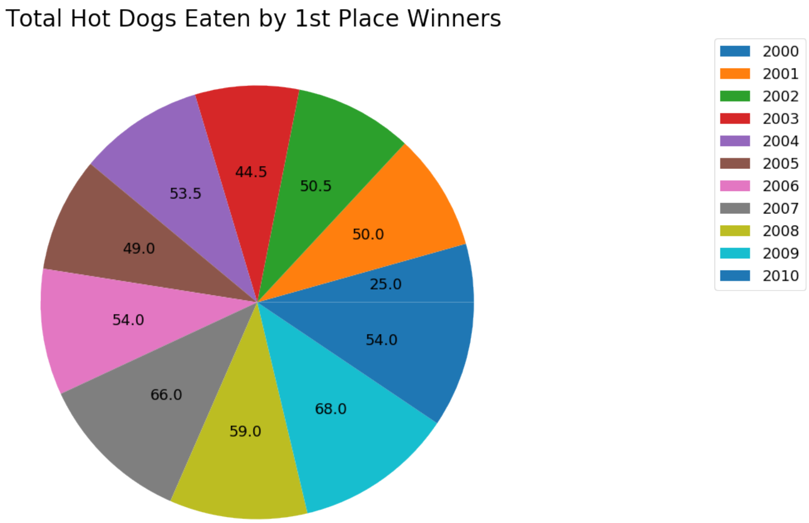


```
[49]: # Stacked bar plot
      fig, ax = plt.subplots(figsize = (10, 5))

      ax.bar(places_t.Year, places_t.First, 0.35, label='1st')
      ax.bar(places_t.Year, places_t.Second, 0.35, label='2nd')
      ax.bar(places_t.Year, places_t.Third, 0.35, label='3rd')
ax.set_ylabel('Number of hot dogs', size = 14)
ax.set_title('Number of Hot Dogs Eaten by Rank', size = 18)
ax.legend()

plt.show()
```



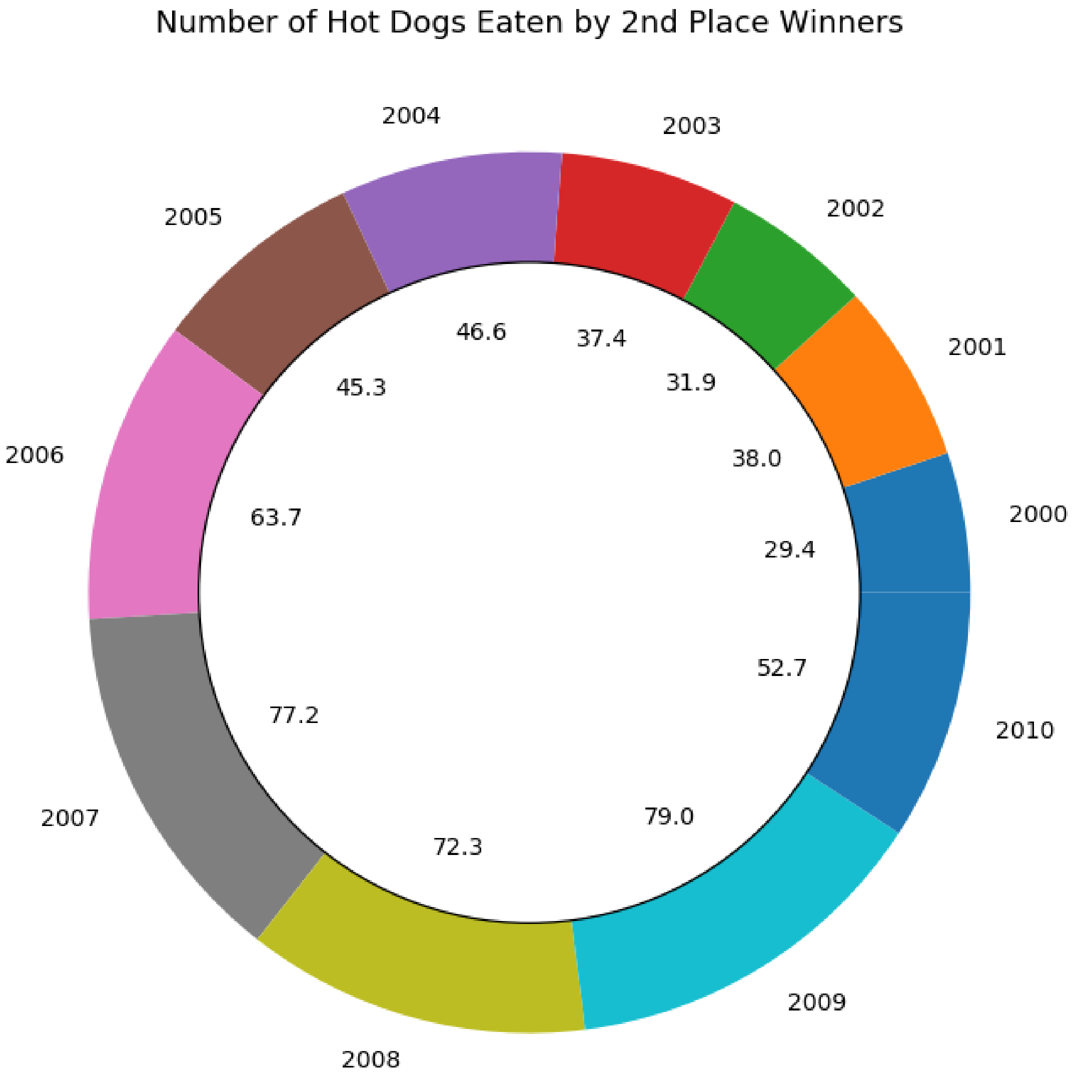
[97]:

```
# Pie chart
sizes = places_t['First']
fig, ax1 = plt.subplots(figsize = (24,12))
labels = places_t['Year']

def absolute_value(val):
    a  = np.round(val/100*sizes.sum(), decimals = 1)
    return a

ax1.axis('equal')
wedges, texts, autotexts = ax1.pie(sizes, autopct = absolute_value)

ax1.legend(wedges,
          loc="center left",
          bbox_to_anchor=(1, 0, 0.5, 1))

plt.setp(autotexts, size=18)
ax1.legend(labels, loc = 'upper right', fontsize = 18)
plt.title('Total Hot Dogs Eaten by 1st Place Winners ', fontsize = 28)
plt.show()
```



[100]:

```
# Donut chart
sizes2 = places_t['Second']
fig, ax1 = plt.subplots(figsize = (24,12))
labels2 = places_t['Year']

plt.pie(sizes2, labels=labels2,
        autopct= absolute_value, textprops={'fontsize': 14})

#draw a circle at the center of pie to make it look like a donut
centre_circle = plt.Circle((0,0),0.75,color='black', fc='white',linewidth=1.25)
fig = plt.gcf()
fig.gca().add_artist(centre_circle)

plt.title('Number of Hot Dogs Eaten by 2nd Place Winners', fontsize = 18)
plt.show()
```


Number of Hot Dogs Eaten by 2nd Place Winners
2004
2003
2005
2002
46.6
37.4
45.3
31.9
2001
2006
38.0
63.7
2000
29.4
52.7
2010
77.2
2007
79.0
72.3
2009
2008

[ ]: