skillcrush

MATPLOTLIB VISUALIZATIONS
## *cheatsheet*

INTRO

This cheatsheet provides code examples for five different visualizations with Matplotlib: pie charts, line charts, bar charts, histograms, and scatter plots! Keep this cheatsheet nearby on your computer or desk as a handy reference when you're ready to display your data.

PIE CHARTS

Pie charts are circular graphs divided into slices to illustrate different sections of data. Use pie charts when you want to compare the size, or percentage, of different data values.

```
1   import matplotlib.pyplot as plt

2   fruit_consumption = [2, 20, 2, 1]

3   slice_labels = ["Bananas","Grapes","Apples","Orange"]

4   colors = ["yellow", "purple", "red", "orange"]

5   plt.pie(fruit_consumption, labels=slice_labels,  colors=colors)

6   plt.title("Fruit I Eat Each Day")

7   plt.savefig("fruit.png")
```

Fruit I Eat Each Day
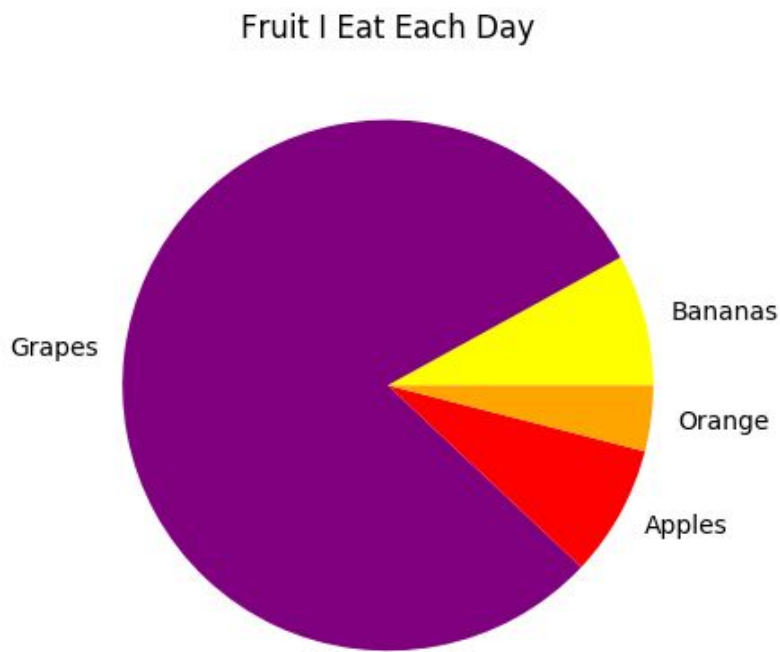
LINE CHARTS

Line charts display and connect data points along a straight line. Line charts are excellent for displaying data that change over time. A line chart can display multiple variables at the same time using different lines.

```
1   import matplotlib.pyplot as plt

2   years = ["1990","1995","2000","2005","2010"]

3   cd_sales_billions = [3.5, 9.4, 13.2, 10.5, 3.4]

4   plt.plot(years, cd_sales_billions, color="#7D32A8")

5   plt.xlabel("Year", fontsize=14)

6   plt.ylabel("Billions of Dollars", fontsize=14)

7   plt.title("CD Sales by Year", fontsize=16)

8   plt.savefig("cd_sales.png")
```

CD Sales by Year
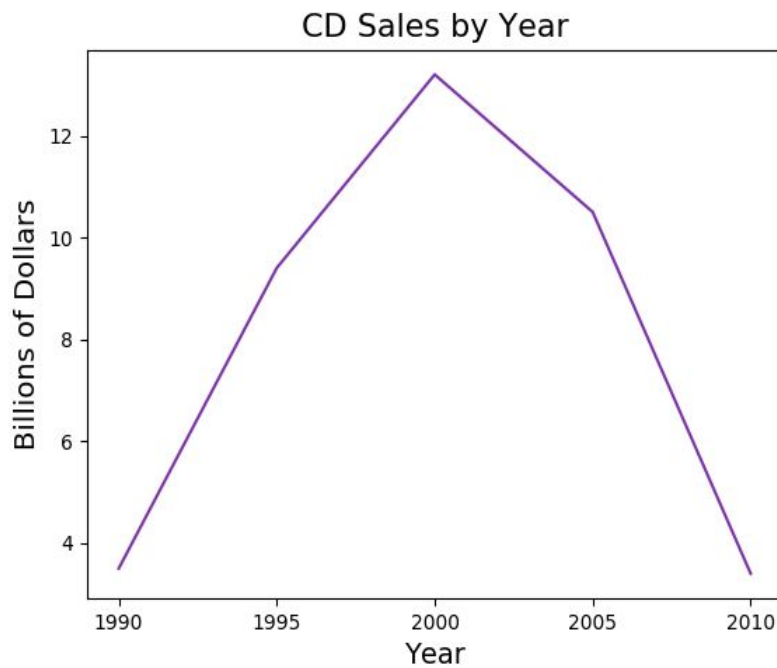
BAR CHARTS

Bar charts use bars to visualize data points. Bar charts are great for comparing different groups or categories of data.

```
1   import matplotlib.pyplot as plt

2   pizza_chain = ["Pizza Hut","Little Caesars","Domnio's","Papa John's"]

3   sales_billions = [12.0, 4.0, 12.3, 3.7]

4   plt.bar(pizza_chain, sales_billions, color="red")

5   plt.xlabel("Pizza Chain")

6   plt.ylabel("Sales in Billions")

7   plt.title("Top 4 Pizza Chain Sales", fontsize=16)

8   plt.savefig("pizza_chain.png")
```

Top 4 Pizza Chain Sales
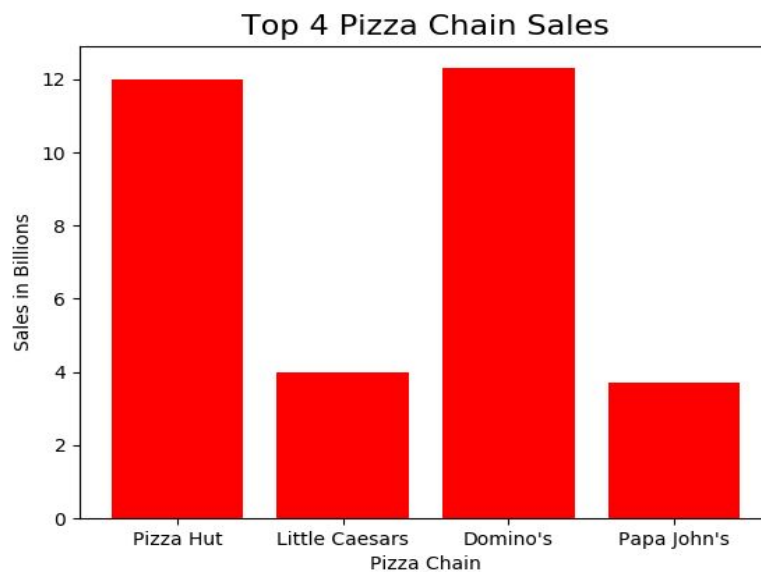
HISTOGRAMS

Histograms are charts that show a distribution of data. Histograms are perfect for summarizing the frequency of data points.

```
1    import matplotlib.pyplot as plt

2    cat_weight = [7,8,5,12,16,17,9,7,7,6,8,9]

3    bins = 10

4    plt.hist(cat_weight, bins, histtype="bar", color="#F8CF20")

5    plt.xlabel("Weight in Pounds")

6    plt.ylabel("Number of Cats")

7    plt.title("Weight of Kitty Kontestants", fontsize=14)

8    plt.xticks(range(4,20,2))

9    plt.yticks(range(1,4,1))

10   plt.savefig("kitty_kontestants_weight.png")
```

Weight of Kitty Kontestants
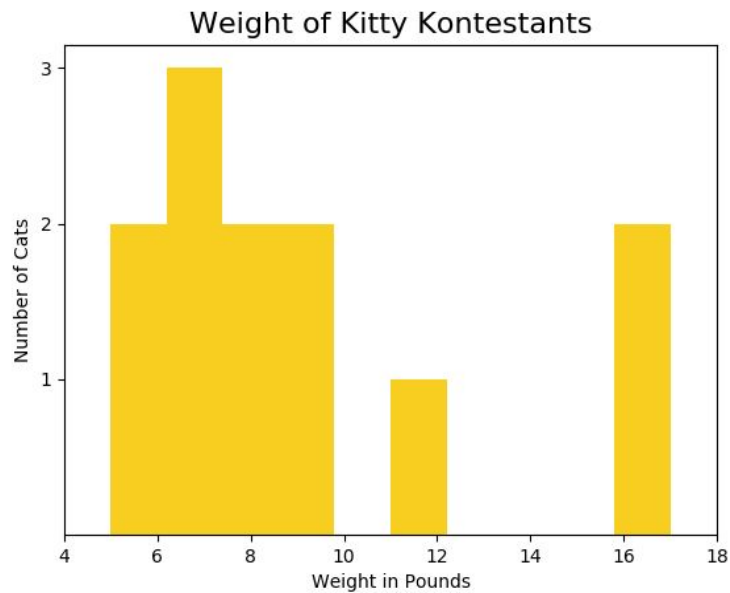
SCATTER PLOTS

Scatter plots are used for comparing aggregate datasets on a single graph. Use a scatter plot to show a relationship, or connection, between datasets.

```
1   import matplotlib.pyplot as plt

2   phases_moon = ["new moon","first quarter","full moon","last quarter"]

3   high_tide_height = [5.5, 5.3, 6.0, 4.8]

4   plt.scatter(phases_moon, high_tide_height)

5   plt.xlabel("Moon Phases")

6   plt.ylabel("Average High Tide Height (feet)")

7   plt.title("Moon Phases and High Tides")

8   plt.savefig("moon_high_tides.png")
```

Moon Phases and High Tides