## YOUTUBE LINK: https://youtu.be/kxajGlChVRs

## GITHUB: https://github.com/Harishwar-reddi/ICP-4

Q1

```
[33] import pandas as pd
     # Read File
     url = 'https://drive.google.com/uc?id={}'.format('19jhAQZno1RpcFpJAimU0KDYtq-QDnLi5')
     df = pd.read_csv(url)
     description = df.describe()
     print(description)
     #nulls
     null_values = df.isnull().sum()
     print(null_values)
     df.fillna(df.mean(numeric_only=True), inplace=True)
     aggregated_data = df[['Duration', 'Calories']].agg(['min', 'max', 'count', 'mean'])
     print(aggregated_data)
     filtered_data = df[(df['Calories'] > 500) & (df['Calories'] < 1000)]
     filtered_data_2 = df[(df['Calories'] > 500) & (df['Pulse'] < 100)]
     df_modified = df.drop(columns=['Maxpulse'])
     df.drop(columns=['Maxpulse'], inplace=True)
     df['Calories'] = df['Calories'].astype(int)
     #plot
     df.plot.scatter(x='Duration', y='Calories')
```

```
Duration
                             Pulse
                                        Maxpulse
                                                       Calories
        169.000000
63.846154
                       169.000000
107.461538
count
                                     169.000000
134.047337
                                                     164.000000
375.790244
mean
std
         42.299949
                        14.510259
                                      16.450434
                                                     266.379919
25%
         45.000000
                       100.000000
                                     124.000000
                                                     250.925000
50%
75%
                       105.000000
         60.000000
                                     131.000000
         60.000000
                                     141.000000
                                                     387.600000
max 30
Duration
        300.000000
                       159.000000
                                     184.000000
                                                    1860.400000
Pulse
Maxpulse
Calories
dtype: int64
          Duration
                          Calories
                       50.300000
1860.400000
min
         15.000000
        300.000000
count 169,000000
                        169.000000
mean 63.846154 375.790244
<Axes: xlabel='Duration', ylabel='Calories'>
     1750
    1500
     1250
     1000
      750
      500
      250
         0
                       50
                                  100
                                               150
                                                           200
                                                                        250
                                                                                     300
                                              Duration
```

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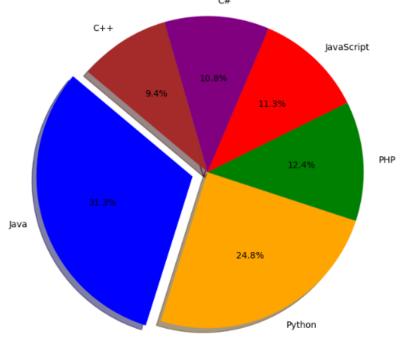
```
import matplotlib.pyplot as plt

# Data
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]

# Create pie chart
colors = ['blue', 'orange', 'green', 'red', 'purple', 'brown']
explode = (0.1, 0, 0, 0, 0)

plt.figure(figsize=(10, 7))
plt.pie(popularity, explode=explode, labels=languages, colors=colors, autopct='%1.1f%%', shadow=True, startangle=140)
plt.title('Popularity of Programming Languages')
plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.
plt.show()
```

## □ Popularity of Programming Languages



```
import matplotlib.pyplot as plt

# Data
math_marks = [88, 92, 80, 89, 100, 80, 60, 100, 80, 34]
science_marks = [35, 79, 79, 48, 100, 88, 32, 45, 20, 30]
marks_range = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

# Create scatter plot
plt.figure(figsize=(10,6))
plt.scatter(marks_range, math_marks, label='Math Marks', color='red')
plt.scatter(marks_range, science_marks, label='Science Marks', color='green')

# Title and labels
plt.title('Marks and Science Marks', fontsize=15)
plt.xlabel('Marks Range', fontsize=13)

# Legend
plt.legend(loc='upper right')

# Show the plot
plt.tight_layout()
plt.show()
```

