**A toy action figure

Description automatically generated with low confidenceYoung Programmer Challenge - Data Visualization with Python**

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Programming

* Programming is the process of creating a set of instructions
* Instructions to tell a computer how to perform a task in steps
* Programming can be done using a variety of computer languages

Tools we use

* Python compiler: <https://www.w3schools.com/python/trypython.asp?filename=demo_compiler>

Or <https://www.w3schools.com/> -> Python -> Try it yourself

* If you are interested in keeping on learning Python, here are more free online tutorials: <https://www.w3schools.com/python/>

**Project 1 Function & Parameters**

* **Example 1.1 putAIF**

def putAIF(animal):

print("How do you put an %s into a fridge?" %animal)

print("- open the fridge")

print("- put in the %s" %animal)

print("- and close the door")

putAIF("Dino")

* **Example 1.2 myHello**

def myHello(myName):

print("Hello, my name is %s!" %(myName))

myHello("Batman")

**Project 2 data visualization**

* <https://www.w3schools.com/python/pandas/trypandas.asp?filename=demo_pandas_plot>

Or <https://www.w3schools.com/> -> Python -> Pandas -> Plotting -> Try it yourself

**Pandas** is a Python library that is used to analyze data.

**Matplotlib** is another Python library that is used for graph plotting as a visualization utility.

#Three lines to make our compiler able to draw:

import sys

import matplotlib

matplotlib.use('Agg')

import **pandas** as pd

import **matplotlib**.pyplot as plt

df = pd.read\_csv('data.csv')

df = df.dropna() #drop the NA values

df.plot(kind = 'scatter', x = 'Duration', y = 'Calories', c='Pulse', colormap='cool', s=df['Maxpulse'])

plt.show()

#Two lines to make our compiler able to draw:

plt.savefig(sys.stdout.buffer)

sys.stdout.flush()

Scatter plots traditionally show your data up to 4 dimensions – X-axis, Y-axis, Size, and Color. Of course, you can do more (transparency, movement, textures, etc.) but be careful you aren’t overloading your chart.

**Contacts**:

.If you have any questions, please don't hesitate to reach out:

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All the teaching materials can be found on GitHub <https://github.com/BingxinS>