Day 3 Mini Problem Set for Python

Your Name

Date

Introduction

Try to solve each problem using day three's material and some minimal Googling. If you get stuck, please come to office hours which are 2-5pm in Sage 8A.

Do this problem set in a Google Collab. Use comments or text sections (text cells vs code cells) to indicate which question you're on.

Once you have completed your problem set, on Google Collab go to "File > Download > Download .ipynb" OR "File > Download > Download .ipynb" to download your file as a Jupyter Notebook OR a python script. You may turn in the Jupyter Notebook (your_pset.ipynb) or python script (your_pset.py) to canvas.

This problem set should only take one hour.

Problem 1: Basic Operations

Create two numeric variables with any values and perform basic arithmetic operations (addition, subtraction, multiplication, division) on them. Assign the result of a division to a new variable and print it.

Problem 2: Working with Vectors

Create a numeric vector with at least 5 elements. Compute the sum and mean of the vector. You will need to import the `numpy` package (or something similar) to compute the mean.

Use a logical comparison (true/false) within a for-loop to print if an element of the vector is greater than the mean. You may need to use the `print()` command.

Problem 3: Loop and Function

Write a function that takes a numeric input and returns the square of the number.

Use a for loop to apply this function to each element of a numeric vector that you create.

Store the results in a new vector that you first initialize by running `newVec = [999, 999, 999, 999, 999]`. Print the new vector using the `print()` command.

Problem 4: Conditional Logic

Use a for loop and an if statment to replace values of the following vector with `999` if they are even.

```
vec = [ 1,2,3,4,5]
```

Problem 5: Reflect

Write a brief reflection (1-3 sentences) on what you found challenging and what you learned from this problem set.