PA 01: UVA Basketball

Goal

The goal of this assignment is for students to practice taking in inputs and performing simple math on the received inputs to produce an intended output. Students will need to understand how to ask for input, type cast, print strings with numbers in them, and perform calculations.

Task

The CS1110 staff wants to keep up with how the UVA Basketball team players are doing! For this PA, you will write a program and save it as `uvahoops.py`, and when it runs, it should:

1. Ask what player you would like to calculate statistics for

2. Ask against what opponent you would like to calculate their statistics for

3. Ask how many 3's the player attempted

4. Ask how many 3's the player made

5. Ask how many 2's the player attempted

6. Ask how many 2's the player made

7. Ask how many free throws the player attempted

8. Ask how many free throws the player made

9. Print out the player's field goal percentage and free throw percentage, using the user's previous inputs

10. Print out the player's total number of points scored in the game, using the user's previous inputs.

If you aren't familiar with basketball statistics, here are a few key pieces of information that will help you with this PA:

- 3's are shots that are worth 3 points each
- 2's are shots that are worth 2 points each
- Free throws are worth 1 point each
- Field goal percentage is calculated as: `(total number of 2's and 3's made) divided by the (total number of 2's and 3's attempted)`
- Free throw percentage is calculated as:

`(number of free throws made) divided by the (number of free throws attempted)`

Example Runs

Example 1

```
What player would you like to calculate statistics for? Kyle Guy

What team was the opponent in the game you would like to calculate statistics for? Texas Tech

How many 3's did Kyle Guy attempt this game? 9

How many 3's did Kyle Guy make this game? 4
```

How many 2's did Kyle Guy attempt this game? 6

How many 2's did Kyle Guy make this game? 4

How many free throws did Kyle Guy attempt this game? 4

How many free throws did Kyle Guy make this game? 4

Kyle Guy had a 53.333333333333336% field goal percentage and a 100.0% free throw percentage

Kyle Guy scored 24 points against Texas Tech. Wahoowa!

Example 2

What player would you like to calculate statistics for? Ralph Sampson

What team was the opponent in the game you would like to calculate statistics for? Virginia Tech

How many 3's did Ralph Sampson attempt this game? 7

How many 3's did Ralph Sampson make this game? 6

How many 2's did Ralph Sampson attempt this game? 8

How many 2's did Ralph Sampson make this game? 5

How many free throws did Ralph Sampson attempt this game? 5

How many free throws did Ralph Sampson make this game? 4

```
Ralph Sampson had a 73.3333333333333% field goal
percentage and a 80.0% free throw percentage

Ralph Sampson scored 32 points against Virginia Tech.
Wahoowa!
```

To help keep this program as simple as possible, you can assume the following details:

• We will not test numbers that result in field goal percentages or free throw percentages above 100% (for example, we will not say that a player made 5 free throws if they only attempted 4).

• Each player we test will have attempted at least 1 of each type of shot so as to avoid errors that occur when dividing by 0.

• When calculating numerical values, some decimal values (floats) will appear with many decimal places. Do not worry about the number of decimal places for now, or if your decimal answers are fractionally different than the ones shown below.

Things to remember for submission

- The file you submit should be named uvahoops.py
- You should include your name and computing ID as comments in your submission.
- Be sure to match our prompts EXACTLY (as seen in the example run above). You may want to copy and paste them into your code.

- For any input statement that you use, include a blank space after the question mark as shown in the example runs.
- The orange text shown in the example runs indicate text that was input by the user.
- The user could enter many different values; these are just examples. For instance, the user may type in a player name other than “Kyle Guy” or “Ralph Sampson”. Whatever name the user types in should be included in the output statements in the way shown below.