Project 4: Python Port

Collaboration Policy: This assignment must be completed individually. You may discuss high-level ideas with other students, but you should not share code.

Description

The goal of this homework assignment is to take an existing Snap project (Project 1, Project 2, or Project 3) and rewrite that program using python. The final project should then be runnable from the shell.

Python for user input

Python has an raw_input function that allows you to get input that the user enters in the shell. This function takes an optional string parameter that is a prompt for the user.

```
name = raw_input( "Please enter your name: ")
```

When the program is run, the text “Please enter your name:” will display in the shell and the code will stop running while it waits for the user to enter a value.

This is similar to the behavior of the ask block in Snap!, however you need to supply the variable that the entered text will be put into. In the example above, the `name` variable holds the text that the user entered.

This value will always be a string. If you want to use the value as a number, you need to convert it to an int first.

```
guess = int( raw_input("Guess a number: ") )
```

Python for converting values

Python has a type for each value. A string “3” is different than an int 3. If you need to use a value as a different type, perhaps to join strings for output for example you can convert between types.

```
num = 3
string_number = str( num )
sum = 3 + int( string_number )
```

Python for random values

To get a random value in python, you need to import a library module called random. Put the import at the top of your file. It should look like this:

```
import random
```

Then you can use that library object to get a random integer between two values:

```
num = random.randint( 1, 10 )
```

This will give you a number such that 1 <= num <= 10.

Starting Materials

You may use your Snap code as a reference, but will start with a blank python file.

Submission Guidelines

The following must be placed in the D2L dropbox. Add a comment to the dropbox if you completed the extra credit.

Project file

This is the file with all your python code. Name this file as Proj4 with your first and last name, such as: Proj4_MaryMosman.py

Readme file

The readme file is a separate file that can be shared along side the code so to give context and extra information about the project. Write a file that has 2 sections:

- The first section - Summary, should describe what the program is and does. In this case, it should describe the program (in your own words, not mine) and how to run it.

- The second section - Learning, should describe what you found challenging (or not) about the assignment and how you worked through the challenges and solved the problem. Perhaps you tried something and it didn't work, then you tried a different approach. Perhaps you didn't know where to start and talked it through with a friend. Perhaps the problem was easy because you've done something similar before. The only "wrong" answer here is not talk about how you solved the problem.

Tips

- Save often and back it up in multiple locations.
- Make sure that you are breaking the problem down into functions.
- Code a little bit at a time (block by block) and test as you go.
- Start early and ask for help as needed.