Homework 2-5

Apr. 2, 2012, 2:25 pm

Task 1:

For the first part of this assignment, we will review and practice Python skills by doing a lot simple tasks which cultimate in a function that encrypts a message. You will find instructions in `HW2-5.py` in the form of comments.

The idea of this simple encryption scheme is this: You keep a secret number, called `n`. You take a message, and change each letter to a new one that is `n` letter(s) ahead of it on the alphabet (maybe you need to wrap back). For example, encrypting

```
to be or not to be
```

using number 1 will give you

```
up cf ps opu up cf
```

To decrypt a message, someone will need to know your secret number, and reverse this process. You will not do this in this homework, but you are welcome to try for fun (no credit though)

Task 2:

A random guessing game consists of 100 coin flippings. The score is the number of heads. For this part, you want to answer the question: if I play this game 1000 times, what percentage of times do I get a score higher than 62? Write a function called *coinflipper* to answer this question. Put it at the bottom of your `HW2-5.py` file

Here are steps to guide you through the process of answering this question. If you are confident enough, you should try to break the task down into steps yourself.

1. Flip a coin, print `0` if it comes out tails or `1` otherwise.

2. Repeat 100 times. Instead of printing `0`s and `1`s, keep a count of how many `1`s you have seen. That is your score of one game. Print the score.

3. Now repeat the game 1000 times. instead of printing out the scores, keep a count of how many of the scores are 62 or greater. Print that number. Calculate the percentage.

Reminders

- Do not forget to say `import random` at the beginning of your program. Then `random.random()` will return a random number between 0 and 1 for you every time it is called.
- You can have a for-loop within another
- The following for-loop gets you execute something multiple times:

```
for i in range(0,100):
```

- Make sure you are keeping the counts in the right way (i.e., think about when you should reset your count and when you shouldn't).

Handin

Email your program to `cs0931tas@cs.brown.edu` and title the file `'YOURNAME'HW2-5.py` — for example, `AnnaRitzHW2-5.py`.