Programming with Python, ISGB 7990

Homework: 3

Title: Loops

Submission: FirstNameLastNameHomework3.py file

Start your script with the comment #FirstName LastName Homework3 and save the file as FirstNameLastNameHomework3.py. This is what you will submit for grading and should contain parts A, B, C, and D.

Part A – Waves

Create a simple program for landlocked surfers who just want to see some waves. The program should:

1. Create a variable equal to the string 'v';
2. Ask how many 'waves' the user would like printed;
3. Using a loop, concatenate as many v's as necessary to the variable created in step 1;
4. After the loop has completed, print the variable from step 1.

Example (Part A):

How many waves would you like to ride?

>>20

vvvvvvvvvvvvvvvvvvv

Part B – Game for Computer

Build a game for the computer to play. The user will enter a randomly selected letter, and the computer will make 7 attempts to guess what letter was picked. The script should:

1. Create a list of any 7 letters you want the computer to 'guess' (like r, x, i, j, v, w, q);
2. Ask the user to enter a letter;
3. Using a for loop, iterate over the list created in step 1:
    a. In each iteration, compare the computer's attempt to the letter selected by the user;
    b. Print if the computer is right or wrong.

Extra Challenge (not required):

Can you stop the loop from repeating once the correct answer has been selected?

Part B Example 1 (Computer wins):

Please select a letter:

>>r

Computer guesses a

The computer is wrong

Computer guesses r

The computer is wins!

Computer guesses t

The computer is wrong

Computer guesses l

The computer is wrong

Computer guesses m

The computer is wrong

Computer guesses x

The computer is wrong

Part B Example 2 (Computer loses)

Please select a letter:

>>v

Computer guesses a

The computer is wrong

Computer guesses r

The computer is wrong

Computer guesses t

The computer is wrong

Computer guesses l

The computer is wrong

Computer guesses m

The computer is wrong

Computer guesses x

The computer is wrong

Computer guesses z

The computer is wrong

Part C – Password

Create a password verification process. The script should:

1. Select any password and save it to a variable (should not be a password you actually use);
2. Ask the user to make a password attempt;
3. If the password is not correct, enter a loop to allow the user 2 more attempts:
    a. Inform the user that the attempt is incorrect and ask the user to try again;
    b. If the new attempt is correct or the user has tried 3 times total, the loop should end;
4. End the script by informing the user if access is granted or not.

Extra challenge (not required for credit):

Can you also inform the user of how many attempts are left?

Part C Example 1:

Please enter the password:

>>Sojourner

That is incorrect, please try again:

>>Beauvoir

Access granted

Part C Example 2 (Access denied):

Please enter the password:

>>Soujourner

That is incorrect, please try again:

>>Anthony

That is incorrect, please try again:

>>Wollstonecraft

Access denied

Part C Example 3 (Extra challenge):

Please enter the password:

>>Soujourner

That is incorrect, please try again (2 attempts left):

>>Beauvoir

Access granted

Part D – Mean Bargain

A user would like to purchase a product. However, each time the user makes an offer below the price for which you're willing to sell, you get mad, and increase the price by 1 dollar. This script should:

1. Create a price variable equal to a number between 1 and 20;
2. Ask the user how much she/he is willing to pay;
3. If the amount from step 2 is less than the amount from step 1:
    a. Increase the price by 1;
    b. Tell the user you're unwilling to sell for the amount offered and ask for another amount;
4. Repeat step 3 until the user enters a price greater than or equal to the price;
5. Print 'It's a deal! The price is [price]'.

Extra Challenge (not required):

> Can you inform the user how much she/he overpaid? This number should the price paid minus your original asking price (before the price increases).

Part D Example (Original price = 15):

How much will you pay?

>>11

Nope! Try offering more:

>>15

Nope! Try offering more:

>>17

It's a deal! The price is 17

Part D Extra Challenge Example:

[After output from example above]

You overpaid by 2. I was originally willing to sell for 15.