For the following problems, I want you to write all your code in a single python file.

(1) (a) Write a program that asks the user to enter an integer. If that integer is not greater than 10, ask them again, and keep going until they enter a number greater than 10. If the integer is greater than 10, you can stop, and print "Success", and print the number they entered.

(b) Add to your code for (a) a counter. When the user correctly enters a number greater than 10, print how many attempts it took them.

(2) Ask the user to enter an integer. Print a message telling the user whether the number is even, or odd. Keep going, until the user enters -1 (negative one). HINT: How do we know if a number is even? It divides by something with no remainder...

(3) Write a budget management program. Start with a budget of 100 dollars. Ask the user to enter a purchase amount, and keep asking until there is no money left in the budget. After the user enters *each* purchase, print the current remaining budget. When there is no more money left in the budget, if the budget is exactly zero, congratulate the user. Otherwise, show them how much over budget they are.

So one simple execution could be:

Your remaining budget is 100 dollars

Enter a purchase: 105

Finished. You are 5 dollars over budget

(4) (a) Let's play a game. Create a variable called secret. Assign the integer 7 into that variable. Ask the user to enter a number. Keep going until they guess the right number.

(b) That's not so exciting. But instead of you picking the secret number, we can have the computer pick. At the top of your code, just below the comments, write

import random

That imports into this program the random library.

Then, replace your line where you assign secret the value 7, with:

secret = random.randint(1,10)

This uses a random number generator to assign a value between 1 and 10 into secret. Now play the game.

(c) add a counter to show how many guesses it took for you to get the right answer. Print the counter at the end.

(d) now let's add some help. Remember, the while loop should work on the idea that we get INSIDE the loop ONLY if we have an incorrect guess. So, what can we do to help - to give a hint - if we're inside the loop? Well...there are two possibilities. Either we guessed too high, or we guessed too low. Can you add some help to the user, printing if they guessed too high or too low before their next guess?

(e) Once you're happy (d) works, change the random.randint() function to generate a number in the range 1 to 100

(f) Finally, add code that ONLY allows the user 5 attempts at the guess. At the end, tell me what the number was, what my last guess was, and if I guessed it or not, in how many attempts.

Upload your code the nexus.