OMIS 30 - Fall 2019 - Project 1

Logistics:

Assigned: Thursday, April 23, 2020
Due: Thursday, May 7, 2020 1159pm

Objective:

Write a program that performs various functions in Python, based on the user input. You will do this within a Jupyter Notebook.

The requirements are:

- Print out a menu of options, then query the user to select one.
- Based on the user's choice, calculate the following:
  - Calculate the first n Fibonacci numbers (where the user enters a number, n)
  - Print the numbers 1 to n, and print "Fizz" for mulitples of 3, and "Buzz" for multiples of 5, and "FizzBuzz" for multiples of both (where the user enters a number, n)
  - Calculate the primes numbers up to n (where the user enters a number, n)
  - Create a list of random numbers, each random number being between -50 and 50, where the list is n long (where the user enters a number, n)

You must use:

- print()
- input()
- If, elif, else
- A loop (for or while)
- comments
- Input validation check for all user inputs

Collaboration:

You will work individually on the assignment. You are allowed and encouraged to use Google extensively.

Submission:

- Name your final file <your_username>_project1_fall2020.ipynb (mine would look like dvrdoljak_project1_fall2020.ipynb)
- Your name and SCU email must be at the top of the project in a markdown
- Make sure it runs completely and correctly on your computer
- Submit it via Camino

- (We will run your program on our computer to test your answers)

Grading Rubric:

Section	Grade	Criteria
Each calculator	40% (10% each)	Math formulas correct; Returns correct answer
User prompts	10%	Uses input; Does >= 1 data validation; Specificity of prompts
User prompt to input data	15%	Uses input; Uses if,elif,else; Does >= 1 data validation in each
Ease of use	10%	Prompts well defined; Error handling done
Use of comments	10%	Documentation of author & dates; Explanation of steps
Readability	10%	Use of whitespace; Use of new lines; Naming convention of variables
General & Submission	5%	Code runs completely through w/o errors; Submission named properly

Bonuses:

- Make your program loop infinitely, until the user selects an option to quit (5%)
- Use functions for each of the calculations (5%)
- Instead of an if/else tree for the menu selection, use a dictionary where the keys are the user options, and the values are references to the functions for each (10%)