InfoTc 1040 Introduction to Problem Solving and Programming
Random Number File Writer and Reader

In this programming assignment you will create two programs. One will write a set of random numbers to a file. The second will read a set of random numbers from a file, count how many were read, display the random numbers, and display the total count of random numbers.

Random Number File Writer

Create a program called *randwrite.py* that writes a series of random numbers to a file. Each random number is to be on a separate line and is to be in the integer number range of 1 through 999. The program is to request from the user how many random numbers to generate. The file that the random numbers are written to is to be called *randnum.txt*.

The user input is to be safe from crashes from invalid input. The user must enter a positive number for the quantity of random numbers to generate. If invalid input is received the user is to be given feedback and provided with the ability to enter a value again. (A positive number is not zero and not negative.) The program must not crash if an error occurs during a file operation. Use exception handling.

Random Number File Reader

Create a program called *randread.py* that reads a series of random numbers from a file called *randnum.txt*, counts how many there are, displays the random numbers, and displays the count.

The output to the user is to be labeled and nicely formatted. Prior to displaying the random numbers display *List of random numbers in randnum.txt:* Each random number is to be displayed on a separate line. The count displayed to the user is to be preceded with *Random number count:*.

Example:

```
List of random numbers in randnum.txt:
5
45
32
15

Random number count: 4
```

The program must not crash if an error occurs during a file operation. Use exception handling. For example, if *randread.py* is run and there is no *randnum.txt* file the program should handle the exception that occurs when attempting to open the file.

InfoTc 1040 Introduction to Problem Solving and Programming
Random Number File Writer and Reader

References

Chapter5 Functions covers generating random numbers in section *5.7. Chapter 6 Files and Exceptions* in your textbook covers how to write and read files. *Writing and Reading Numeric Data* in that chapter shows you how to write/read numbers to/from a file. *Reading a File with a Loop and Detecting the End of the File* has information on how to read each line in a file and know when all the lines have been read. *Exceptions* covers how **try/except** work and *Programs 6-25 , 6-26, and 6-27* show how to detect and handle an exception working with file operations.

Useful Information

If you open a file to write or read and you only specify the filename the location (directory/folder) will be assumed to be the same as the program opening the file.

Testing

Test *randwrite.py* to make sure it properly handles invalid inputs and generates a file of the correct name that contains the quantity of random numbers requested.

Use *randwrite.py* to generate *randnum.txt* files that are then read by *randread.py* and verify that that the information displayed is correct and properly formatted. Make sure that *randread.py* doesn't crash when it is run and there is no *randnum.txt* file present for it to open and read.

Submission

Put your **randwrite.py** and **randread.py** files in a folder named **<lastname><firstname>RandWriteRead** and zip the folder. Do not include characters other than a-z and A-Z in the folder name. The zip file is to be submitted for this assignment.