

RANDOM NUMBER GENERATOR SDL

1. Problem statement: formulate the problem

The problem to be solved is to design a random number generator that will generate random real numbers between 2.0 and 10.0. The script should create and present the random numbers in 2 decimal points and calculate the mean and standard deviation of the random numbers. Also, the maximum sum of two consecutive numbers should be generated.

2. Analysis determine the inputs, outputs and variables

The inputs to the random number generator will be the range of the random numbers to be generated, this includes the maximum range and the minimum range, and also another input to the random number generator is the number of numbers to be generated.

In our case, the maximum range is 10.0 and the minimum is 2.0 with the number of numbers required to be generated is 5 numbers. The output to the random number generator will be 5(five) random numbers between the given range.

The variables used in the random number generator are, maximum range, minimum range, count of numbers to be generated, the sum of the random numbers generated, an average of the numbers, and standard deviation of the numbers generated

3. Design (define the list of steps) algorithm used to solve the problem

The steps used in solving the problem include:

- Know the random number generation limit and develop the random number generator.
- Modify the generated random numbers to the requires two decimal places
- Calculate the sum of the numbers and then the mean of the random numbers.
- Calculate the standard deviation of the random numbers from the mean already calculated.
- Find the maximum sum of two continuous random numbers in the list.

4. Implementation

Implementation involved writing the actual C program in Visual Studio code editor. It involved ensuring the required functionalities of the random number generator were met.

5. Testing

The project was tested for any errors or missed details in implementation through the navigation of the finished product afresh and as a whole. Any mishaps encountered were fixed and finally ensured that all the requirements were fulfilled.