Assignment SU6 – Instructions

CMPG111 – Lists

SU6_1 Number Analysis Program

Refer to programming exercise 4 as outlined on page 448 in chapter 7 of your prescribed textbook.
Note: *Do not use the `min()` and `max()` functions as part of your solution; doing so will result in zero (0) points for this question.* This program includes the following functions:

- `determineLowest(list)`, `determineHighest(list)`, `determineTotal(list)`, `determineAverage(list, total)`

Submit your Python script (*.py) on CodeGrade named: *SU6_1.py*

SU6_2 Lottery Number Generator

Write a Python program for a lottery number generator. The program includes the following functions:

- `generateRandom()`: Generates and returns a list of seven (7) unique random numbers between 1 and 49 (inclusive).
  Note: *It is essential to call the `random.seed()` function and pass the integer value 111 to ensure predictability with the auto-tests.*
- `selectNumbers(list)`: Receives a list as parameter and allows the user to manually enter seven (7) unique numbers between 1 and 49 (inclusive) for the lottery. The function prompts the user to enter each number individually ensuring that only valid and unique numbers are accepted and captured in the list. Use **list indexing** to insert each of the seven (7) numbers entered by the user into an index and return the list.
- `displayLottery(list)`: Receives a list as parameter and displays the final list of lottery numbers on a single line from smallest to largest in value, separated by a single space. Implement an appropriate loop for **list processing** and to display the numbers. The numbers should **not** be separated by commas or be enclosed in block brackets.

The program's `main()` function provides the following two options: generate the lottery numbers randomly using the `generateRandom()` function, or select the lottery numbers manually using the `selectNumbers()` function.

Before calling any of the options, the main function initialises a list with seven zeros to represent the lottery numbers using the **repetition operator**.
Print the list in the following format: `[0, 0, 0, 0, 0, 0, 0]`
Note: *Pass this list as argument to the `selectNumbers()` function.*

After selecting an option, the program displays the final list of lottery numbers. The program ensures input validation and guides the user through each step. Additionally, the program provides feedback and terminates gracefully.

Submit your Python script (*.py) on CodeGrade named: *SU6_2.py*

GENERAL REQUIREMENTS:

- Add comments to both your scripts that concisely explain what they do.
- Add your name, surname, and student number as a comment on the first line of both scripts.
- Make sure you supply appropriate headings / sub-headings / labels to ensure that your input and output make sense.
- **The use of AI generated code is strictly prohibited.**