DT211C/1 Programming Assignment #2

Due Date: Sunday, March 11th, 2018 (11.59pm)

Requirements:

Develop a program that will play the Lotto game. The program should allow a user to enter their 6 selected numbers and give them a set of options, each performing a specific requirement. You must store the 6 numbers in a 1-Dimensional array.

There are a number of requirements that your program must meet. Your program must be modularised (i.e. use functions) and each task should be dealt in a separate function. The program should display a simple menu to the user and each option in the menu will be implemented by calling a separate function. You must use pointer notation to access array elements – DO NOT use subscript notation.

The requirements are as follows (each implemented in a separate function):

1. Enter any 6 numbers (1–42 inclusive) from the keyboard. Perform any necessary validation (error-checking) required (e.g. all numbers must be different, range 1-42, etc.).
2. Display the contents of the 1-D array containing your lotto numbers that you entered.
3. Sort the contents of the array in increasing order (i.e. 1st element = smallest number, 2nd element = 2nd smallest number, etc.). You may use any sorting algorithm of your choice.
4. Compare your chosen lotto numbers in the 1-D array with the following winning numbers:

   1,3,5,7,9,11 (Winning numbers), 42 (Bonus number)

Depending on how many of your chosen numbers match the above winning numbers, your program should display one of the following messages:

Match 6	Jackpot
Match 5 + Bonus	New car
Match 5	Holiday
Match 4 + Bonus	Weekend away
Match 4	Night out
Match 3 + Bonus	Cinema ticket

5. Display the frequency of the numbers entered each time the user enters a new set of numbers (without exiting the program) on the screen. For example, it might display:

   number 1 has been selected x times
   number 7 has been selected x times

number 28 has been selected x times
etc.,

6. Exit program

Extra:

- After a function has completed, your program should return to the main menu and allow the user to select another option.
- The user should only be allowed to select options 2, 3, 4 & 5 only if they have correctly entered their 6 valid chosen numbers, i.e., option 1. Display appropriate error messages to handle all errors.

Submission details:

1. Submit your program using the assignment listed in the Programming module in Webcourses. This must be submitted on or before Sunday, March 11th, 2018 (11.59pm).
2. Extra marks will be awarded for well written code (comments, indentation, whitespace, good use of brackets, etc.,).

Note: You are required to demo your program in the lab within 2 weeks following submission. Failure to demo your program will result in a zero mark being recorded.

Late submissions (within 1 week) will be marked out of 50%. No submissions accepted after 1 week and a zero mark recorded. You MUST notify Dr. Michael Collins of a late submission by email.

NB - This is an individual assignment and **NOT** a group one. Do your own work and do not copy the work from a fellow student. Any assignments submitted which are found to be copied will result in both students failing the assignment. Also, any students found to provide their work to other students will fail this assignment. Suspected copying or plagiarising of another piece of work will be dealt with by the DIT code of ethical conduct.