CSC107 2.0 Computer Programming - Laboratory I
Lab sheet 12

Practice the use of an 1D **array.**

1. Complete below C program that reads an array of N elements, calculates the sum of those N elements, and displays the result to the standard output or the screen. A single blank given below might have several statements.

```
#include <stdio.h>
int main()
{
  int size;
  printf("Enter size of the array: ");
  1……………….

  //Declaring array name arr
  2. ……………….
  printf("Enter array elements\n");

  // Input array elements
  3……………………..

  int sum=0;

  // Loop to find sum
  4…………………

  //Print sum
  5………………………

  return 0;
}
```

2. Write statements to do the following:
   a. Create an array to hold 10 double values.
   b. Assign the value 5.5 to the last element in the array.
   c. Display the sum of the first two elements.
   d. Write a loop that computes the sum of all elements in the array.
   e. Write a loop that finds the minimum element in the array.

f. Randomly generate an index and display the element of this index in the array.

g. Use an array initializer to create another array with the initial values 3.5, 5.5, 4.52, and 5.6.

3. Write a C Program that finds the number of elements present in the given array.

4. Write aC program to find the largest and smallest elements in the given array.

5. Write a C Program to insert an element to a given index in an Array.

6. Write a C Program to delete an element in an Array by index and rearrange it.

7. Write a program that reads student scores, gets the best score, and then assigns grades based on the following scheme:

    Grade is A if score is >= best - 10;
    Grade is B if score is >= best - 20;
    Grade is C if score is >= best - 30;
    Grade is D if score is >= best - 40;
    Grade is F otherwise.
    The program prompts the user to enter the total number of students, then prompts the user to enter all of the scores, and concludes by displaying the grades.

8. Create a simple hotel reservation system. The hotel has 10 rooms. Implement the following functionalities:

    Check if a room is available
    Reserve a room
    Cancel a reservation
    Display the status of all rooms (reserved or available)

End