Introduction to Computing Laboratory
Assignment – 6

1. Write a program in C to find the maximum, minimum, sum and average of 10 integer numbers stored in an array.
2. Write a program in C to populate two integer arrays ‘A’ and ‘B’ of size 10 each. Add the elements of these two arrays and store the sum in another integer array ‘C’ of size 10 in the following fashion:

   C[0] =A[0] + B[9], C[1]=A[1] + B[8], C[2] =A[2] + B[7], … and so on.
3. Write a program in C to populate an array with some integer numbers and accept a key value from the user. Now perform ***linear search*** to check whether the key element is present in the array or not. If it is in the array print the index of the element in the array. Otherwise print the failure message.
4. Write a program in C to populate an array in ***ascending / descending*** order with some integer numbers and accept a key value from the user. Now perform ***binary search*** to check whether the key element is present in the array or not. If it is in the array print the index of the element in the array. Otherwise print the failure message.
5. Write a program in C to populate an array of size 10 with 9 integer numbers. Now insert an element into the array at a specific position, and then delete another element from a specific position of the array.
6. Write a program in C to populate an array of 10 integers and find the element(s) with maximum (maximal) frequency.
7. Write a program in C to populate a 10 x 10 matrix ‘A’ with integers to perform the following operation.

   A[i][j]=1 if A[i][j]>=T

   = 0 Otherwise for i,j=0,1,2…9 and T is an user’s input
8. Write a menu driven program in C where the menu is as follows:

   B) Bubble sort

   S) Selection sort
9. Write a menu driven program in C which has the following options:
   1) Convert a decimal number to its binary equivalent
   2) Convert a binary number to its decimal equivalent
   3) Exit.

   The program terminates if the user selects the option 3; otherwise the menu reappears automatically.
10. Write a menu driven program in C where the menu is as follows:

    1) Transpose of a matrix

    2) Addition of two matrices

    3) Multiplication of two matrices