Assignment – 1

1. Write a program that will randomly generate 500 integer numbers in the range 0 to 999. Write those numbers in a text file named “in.txt”. Sort (in ascending order) all the integer numbers in the file “in.txt” using bubble sort. Use separate function for SWAP and BUBBLE_SORT. Call them from main function.

2. Write a program that will randomly generate 50000 integer numbers in the range -250 to 249. Write those numbers in a text file named “in.txt”. Sort (in ascending order) all the integer numbers in the file “in.txt” using insertion sort. Use separate function for INSERTION_SORT. Call it from main function. Save the sorted output into another text file named “out.txt”.
   Now do linear search on the data in “out.txt”. Maintain following separate functions:

   a. input // read all integers from “out.txt” and load it into an array
      (for array, perform dynamic memory allocation)
   b. lin_search // do linear search against a KEY integer and return its index array position
      // if not found then return -1
   c. show // Show search result (found or not found)

3. Write a program to copy the elements of one array into another array.
4. Write a program to count the total number of duplicate elements in an array.
5. Write a program to print all unique elements in an array.
6. Write a program to merge two arrays of the same size sorted in descending order.
7. Write a program to count the frequency of each element of an array.
8. Write a program to find second largest element in an array.