You may be asked to demonstrate/explain your work to the tutor, if you are absent/unavailable or fail to demonstrate properly, zero marks will be awarded.

Text book: Deitel, H M & Deitel, P J 2013, C: How to program, 7th edn, Pearson Prentice-Hall, Upper Saddle River, New Jersey.

1. Explain Linear search and binary search with examples.

2. Write a complete C program to implement the following sorting algorithms:
   Using an array of size 10, populated with random integers, e.g. 0 – 100 to test your program. Don't forget to print initial array, and output (for binary search, print also each sub-array during the searching process).

   a. Linear Search
      a. The function should receive an integer array, a search key and the size of the array as arguments.
      b. If the search key is found, return the location in the array where the search key is found; otherwise, return -1.
   b. Binary Search
      a. The function should receive an integer array, a search key, the starting subscript and ending subscript as arguments.
      b. If the search key is found, return the location in the array where the search key is found; otherwise, return -1.