

8.2.2 Sorting – Arranging elements of an array in an order(ascending or descending)

- 1. Bubble sort :-** It is a simple sorting method. In this sorting considering two adjacent elements if it is out of order, the elements are interchanged. After the first iteration the largest(in the case of ascending sorting) or smallest(in the case of descending sorting) will be the end of the array. This process continues.
- 2. Selection sort :-** In selection sort the array is divided into two parts, the sorted part and unsorted part. First smallest element in the unsorted part is searched and exchanged with the first element. Now there is 2 parts sorted part and unsorted part. This process continues.

8.2.3 Searching

It is the process of finding the position of the given element.

- 1. Linear search :-** In this method each element of the array is compared with the element to be searched starting from the first element. If it finds the position of the element in the array is returned.
- 2. Binary search :-** It uses a technique called divide and conquer method. It can be performed only on sorted arrays.

First we check the element with the middle element. There are 3 possibilities. The first possibility is the searched element is the middle element then search can be finished. The second possibility is the element is less than the middle value so the upper bound is the middle element. The third possibility is the element is greater than the middle value so the lower bound is the middle element. Repeat this process.

8.3 Two dimensional (2D) arrays.

Some occasions we have to store 6 different marks of 50 students. For this we use 2D arrays. An array with two subscripts is used, eg. `int mark[r][c]`; Here `r` is the row and `c` is the column.