Searching

Linear Search

10	15	45	20	25	6	1	100	65	99
0	1	2	3	4	5	6	7	8	9
item	25			po		ition -1			

Input (*Declarations and Initializations*): int arr[10], int item, int position = -1.

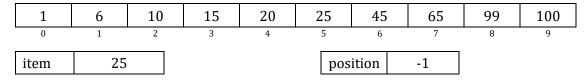
Process:

- 1. Compare the value of *item* with the *element* in the *index-value* 0 of the array.
- 2. If, they are equal, the value of *position* will be the value of the *index* and exit. Else, go to next index.
- 3. Repeat (1) and (2) for all the indexes.

Output:

1. Check the value of position.
If, it is -1, Print *item* not found in the array.
Else, Print *item* found at *position*.

Binary Search



Input (*Declarations and Initializations*): int arr[10], int item, int position = -1.

Process:

- 1. Start with $f_index = 0$ and $l_index = size-1$
- 2. The value of *m_index* will be *(f_index+l_index)/2*.
- 3. Compare the value of *item* with *arr[m_index]*.
 - (a) If item < arr[m_index], *L_index* will be *m_index-1*.
 - (b) Else if item > arr[m_index], *f_index* will be *m_index+1*.
 - (c) Else, *position* will be *m_index*. Exit.
- 4. Repeat (2), (3) till $f_index <= l_index$.

Output:

Check the value of position.
 If, it is -1, Print *item* not found in the array.
 Else, Print *item* found at *position*.