Linear Search

In computer science, **linear search** or **sequential search** is a method for finding a particular value in a list, that consists of checking every one of its elements, one at a time and in sequence, until the desired one is found.[1]

Linear search is the simplest search algorithm; it is a special case of brute-force search. Its worst case cost is proportional to the number of elements in the list; and so is its expected cost, if all list elements are equally likely to be searched for. Therefore, if the list has more than a few elements, other methods (such as binary search or hashing) may be much more efficient.

CODES(C)

```c
#include <stdio.h>

int main()
{
  int array[100], search, c, n;

  printf("Enter the number of elements in array\n");
  scanf("%d",&n);

  printf("Enter %d integer(s)\n", n);

  for (c = 0; c < n; c++)
    scanf("%d", &array[c]);

  printf("Enter the number to search\n");
  scanf("%d", &search);

  for (c = 0; c < n; c++)
  {
    if (array[c] == search)     /* if required element found */
    {
      printf("%d is present at location %d.\n", search, c+1);
      break;
    }
  }
  if (c == n)
    printf("%d is not present in array.\n", search);

  return 0;
}
```

CODES(JAVA)

```java
import java.util.Scanner;

class LinearSearch
{
  public static void main(String args[])
  {
    int c, n, search, array[];

    Scanner in = new Scanner(System.in);
    System.out.println("Enter number of elements");
    n = in.nextInt();
    array = new int[n];

    System.out.println("Enter " + n + " integers");

    for (c = 0; c < n; c++)
      array[c] = in.nextInt();

    System.out.println("Enter value to find");
    search = in.nextInt();

    for (c = 0; c < n; c++)
    {
      if (array[c] == search)     /* Searching element is present */
      {
        System.out.println(search + " is present at location " + (c + 1) + ".");
        break;
      }
    }
    if (c == n)  /* Searching element is absent */
      System.out.println(search + " is not present in array.");
  }
}
```