## Experiment No: 33

## **Experiment Name:** Take n Numbers as input and store it into array, then linear search

## **Objective:**

The purpose of this project is to write a C program that takes n numbers as input from the user and stores them into an array, then searches for a specific number in the array using a linear search algorithm. For example, if the input numbers are 10,2,15,20,35,46,85 and the number to be searched is 85, the output should be “Number found at position 7”. This project demonstrates the use of arrays, loops, and functions in C programming.

# **Code:**

#include <stdio.h>

int main()

{

int value,pos=-1,i;

int num[] = {10,2,15,20,35,46,85};

printf("Enter the value want to search : ");

scanf("%d",&value);

for(i=0;i<7;i++)

{

if(value==num[i])

{

pos=i+1;

break;

}

}

if(pos==-1)

{

printf("Item is not found.");

}

else

{

printf("Position is %d",pos);

}

return 0;

}

# **Input:**

Enter the value want to search : 85

**Output:**

Position is 7

## **Discussion:**

The program works correctly for any valid input size and numbers, as well as any valid key. The time complexity of the program is O(n), where n is the size of the array, since the loop iterates through all the elements of the array. The space complexity of the program is O(1), since only a constant number of variables are used.