VP Vidyalankar Polytechnic	DEPARTMENT OF COMPUTER ENGINEERING

Subject: - DSU	**Subject Code:** 313301
Semester: - III	**Course:** Computer Engineering
Laboratory No: L003	**Name of Subject Teacher:** Prof. Imran S.
Name of Student: Mohd Saad Khan	**Roll Id: -** 24203A0007

Experiment No:	2
Title of Experiment	Write a 'C' Program to Search a particular data from the given Array of numbers using: Linear Search Method.

Aim: Write a 'C' Program to Search a particular data from the given Array of numbers using: Linear Search Method.

Algorithm:

Step 1: Start
Step 2: Declare Variables i, found, k, n, and an array a[100]
Step 3: Print "Enter the number of Element"
Step 4: Scan the value of n from the keyboard
Step 5: Print "Enter the element for an array"
Step 6: Run a loop, such that i=0; i<n; i++. Scan the input in every iteration
Step 7: Print "Enter the element you want to search"
Step 8: Scan the value of k from the keyboard
Step 9: Run a loop, such that i=0; i<n; i++
Step 10: Compare, if a[i]==k, then increment the value of 'found' Variable by 1
Step 11: If condition is false then repeat the steps 9 & 10 again until the condition inside the loop becomes false
Step 12: Print the searched element and its number of occurence
Step 13: Stop

Code:

```
 ≡  File  Edit  Search  Run  Compile  Debug  Project  Options    Window  Help
┌─[■]──────────────────────── SAAD.C ──────────────────────────────1=[↕]─┐
#include<stdio.h>
#include<conio.h>
void main()
{
int i,found=0,k,n;
int a[100];
clrscr();
printf("Enter the Number of Elements you want to enter: ");
scanf("%i",&n);
printf("Enter the Elements for the array: ");
for(i=0;i<n;i++){
scanf("%i",&a[i]);
}
printf("Enter the element you want to search: ");
scanf("%i",&k);
for(i=0;i<n;i++){
if(a[i]==k){
found+=1;
}
}
printf("\nElement Searched: %i \nNumber of occurance: %i",k,found);
└──────── 21:11 ──────┘
F1 Help  Alt-F8 Next Msg  Alt-F7 Prev Msg  Alt-F9 Compile  F9 Make  F10 Menu
 ≡  File  Edit  Search  Run  Compile  Debug  Project  Options    Window  Help
┌─[■]──────────────────────── SAAD.C ──────────────────────────────1=[↕]─┐
getch();
}
```

Output: -

```
Enter the Number of Elements you want to enter: 10
Enter the Elements for the array: 12
32
12
34
45
12
56
78
56
12
Enter the element you want to search: 12

Element Searched: 12
Number of occurance: 4_
```

Practical Related Questions:

1. **Modify the linear search program to find and print all occurrences of the target value in the array.**
   Ans:

```
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void main()
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int i,found=0,k,n;
int a[100];
clrscr();
printf("Enter the Number of Elements you want to enter: ");
scanf("%i",&n);
printf("Enter the Elements for the array: ");
for(i=0;i<n;i++){
scanf("%i",&a[i]);
}
printf("Enter the element you want to search: ");
scanf("%i",&k);
for(i=0;i<n;i++){
if(a[i]==k){
found+=1;
}
}
printf("\nElement Searched: %i \nNumber of occurance: %i",k,found);
└═══ 21:11 ═══◄■►═══════════════════════════════════════════════┘
F1 Help  Alt-F8 Next Msg  Alt-F7 Prev Msg  Alt-F9 Compile  F9 Make  F10 Menu
```

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Output:

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Number of occurance: 4_
```

Marks Obtained			**Dated signature of Teacher**
Process Related (35)	**Product Related (15)**	**Total (50)**	