VP Vidyalankar Polytechnic	DEPARTMENT OF COMPUTER ENGINEERING

Subject: - DATA STRUCTURE	**Subject Code:** 313301
Semester: - III	**Course:** DATA STRUCTURES
Laboratory No: L001	**Name of Subject Teacher:** Prof. Imraan S.
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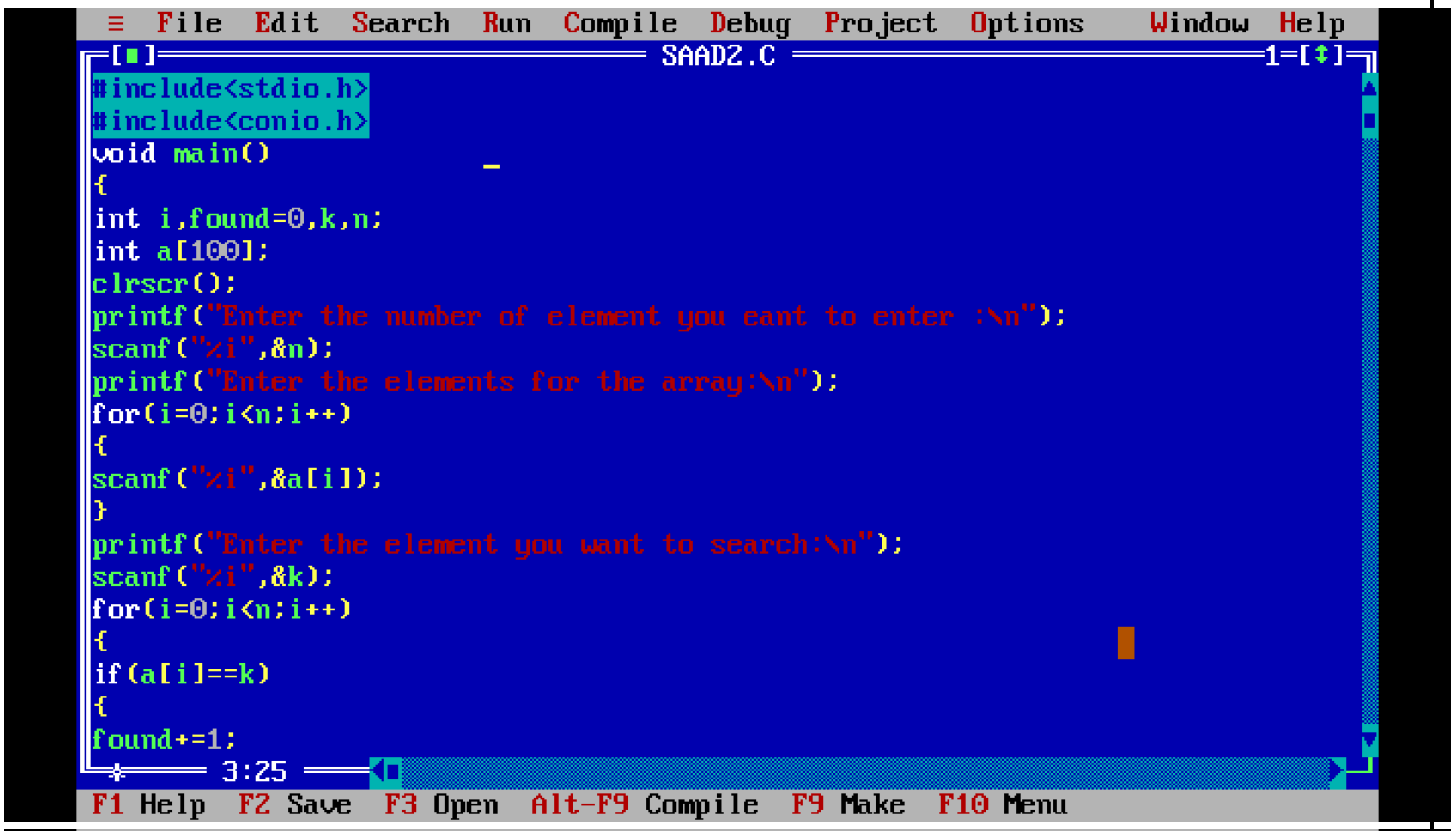
Experiment No:	2
Title of Experiment	Write a 'C' Program to Search a particular data from the given Array of numbers using: Linear Search Method.

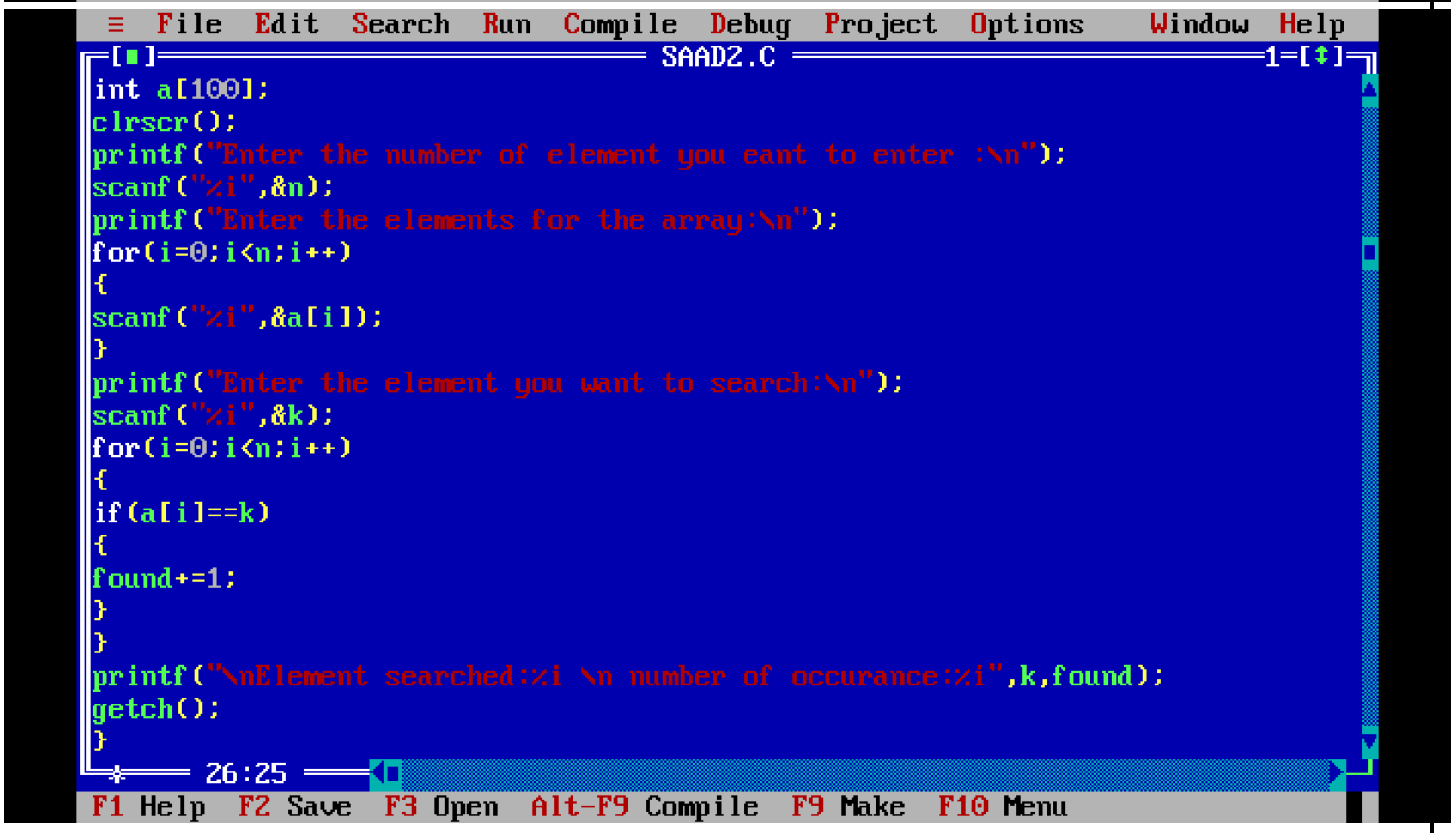
Aim: Write a 'C' Program to Search a particular data from the given Array of numbers using: Linear Search Method.

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
SAAD2.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 element you eant to enter :\n");
scanf("%i",&n);
printf("Enter the elements for the array:\n");
for(i=0;i<n;i++)
{
scanf("%i",&a[i]);
}
printf("Enter the element you want to search:\n");
scanf("%i",&k);
for(i=0;i<n;i++)
{
if(a[i]==k)
{
found+=1;
3:25
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu


File Edit Search Run Compile Debug Project Options Window Help
SAAD2.C
1=[↕]
int a[100];
clrscr();
printf("Enter the number of element you eant to enter :\n");
scanf("%i",&n);
printf("Enter the elements for the array:\n");
for(i=0;i<n;i++)
{
scanf("%i",&a[i]);
}
printf("Enter the element you want to search:\n");
scanf("%i",&k);
for(i=0;i<n;i++)
{
if(a[i]==k)
{
found+=1;
}
}
printf("\nElement searched:%i \n number of occurance:%i",k,found);
getch();
}
26:25
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu

OUTPUT: -

```
Enter the number of element you eant to enter :
5
Enter the elements for the array:
5
3
5
7
8
Enter the element you want to search:
5

Element searched:5
 number of occurance:2
```

Practical Related Questions:

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

CODE:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i, found=0,k,n;
int a[100];
clrscr();
printf("Enter the number ofd elements you want to enter: ");
scanf("%i",&n);
printf("Enter the element for the array: \n");
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;
```

```
{
found+=1;
}
}
printf("\n Element searched: %i \n number of occurance: %i",k,found);
getch();
}
```

OUTPUT:

```
Enter the number ofd elements you want to enter: 5
Enter the element for the array:
2
3
2
3
5
Enter the element you want to search: 5

 Element searched: 5
 number of occurance: 1
```

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