

Subject: - DATA STRUCTURE	Subject Code: 313301
Semester: - III	Course: COMPUTER ENGINEERING
Laboratory No: L003	Name of Subject Teacher: Prof. Imraan S.
Name of Student: Saad Sharif Kazi	Roll Id: - 24203A0013
Experiment No:	3
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 str[5][20], search[20], i, a, found
 Step 3: Initialize the array str with values: "apple", "banana", "mango", "grapes", "lichi"
 Step 4: Set found = 0
 Step 5: Clear screen using clrscr()
 Step 6: Print "Enter the string you want to search"
 Step 7: Scan the value into search from the keyboard
 Step 8: Run a loop from i = 0 to i < 5
 Step 8.1: Compare search with str[i] using strcmp() and store the result in variable a
 Step 8.2: If a == 0 then
 Step 8.2.1: Print "search found at index i"
 Step 8.2.2: Set found = 1
 Step 9: After the loop, if found == 0 then
 Step 9.1: Print "Sorry :(search is not there in the array..."
 Step 10: Stop

Code:

```
File Edit Search Run Compile Debug Project Options Window Help
SAAD3.C 1=[+]
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char str[5][20]={"bmw","mercedes","audi","jaguar","kia"},
search[20];
int i,a,found=0;
clrscr();
printf("Enter the string you want to search:\n");
scanf("%s",search);
for(i=0;i<5;i++)
{
a=strcmp(str[i],search);
if(a==0)
{
printf("\n%s found at index %i",search,i);
found=1;
}
}
if(found==0)
1:1
```

```
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu
File Edit Search Run Compile Debug Project Options Window Help
SAAD3.C 1=[+]
char str[5][20]={"bmw","mercedes","audi","jaguar","kia"},
search[20];
int i,a,found=0;
clrscr();
printf("Enter the string you want to search:\n");
scanf("%s",search);
for(i=0;i<5;i++)
{
a=strcmp(str[i],search);
if(a==0)
{
printf("\n%s found at index %i",search,i);
found=1;
}
}
if(found==0)
{
printf("\nSorry :(%s is not there in the array.....",search);
}
getch();
}
26:1
```

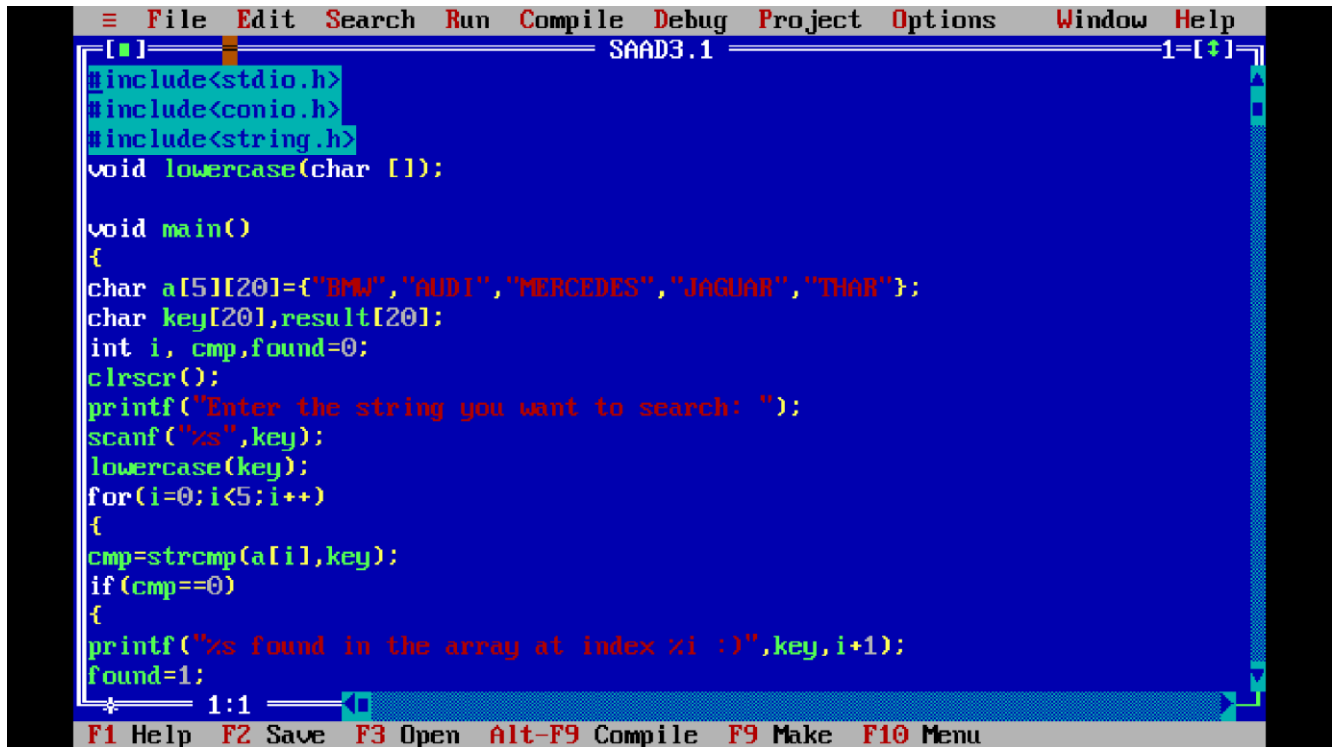
OUTPUT: -

```
Enter the string you want to search:  
kia  
  
kia found at index 4
```

Practical Related Questions:

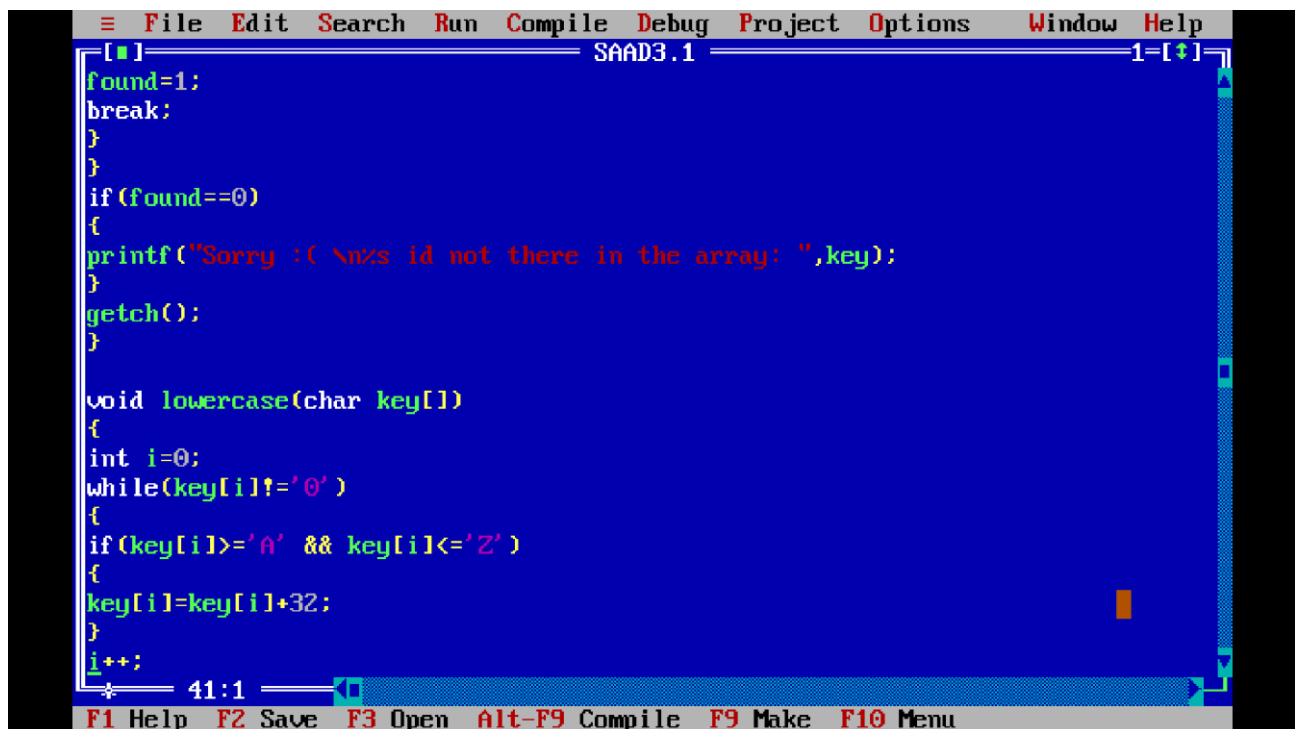
1. Write a simple C program to perform linear search on an array of Strings to find Case Insensitive search for a string.

CODE:

A screenshot of a text editor window titled 'SAAD3.1' showing a C program. The menu bar includes File, Edit, Search, Run, Compile, Debug, Project, Options, Window, and Help. The code defines a lowercase function and a main function. The main function declares an array 'a' with five string elements: "BMW", "AUDI", "MERCEDES", "JAGUAR", and "THAR". It prompts the user to enter a string to search, reads it into 'key', and then iterates through the array 'a' to find a match. The status bar at the bottom shows function key shortcuts: F1 Help, F2 Save, F3 Open, Alt-F9 Compile, F9 Make, and F10 Menu.

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void lowercase(char []);

void main()
{
char a[5][20]={"BMW","AUDI","MERCEDES","JAGUAR","THAR"};
char key[20],result[20];
int i, cmp,found=0;
clrscr();
printf("Enter the string you want to search: ");
scanf("%s",key);
lowercase(key);
for(i=0;i<5;i++)
{
cmp=strcmp(a[i],key);
if(cmp==0)
{
printf("%s found in the array at index %i :",key,i+1);
found=1;
}
```

A continuation of the C program from the previous screenshot, showing the completion of the 'main' function and the implementation of the 'lowercase' function. The 'main' function continues with a 'break;' statement, a check for 'found==0' to print a message if the string is not found, and a 'getch()' call. The 'lowercase' function iterates through each character of the 'key' string and converts it to lowercase by adding 32 to its ASCII value. The status bar at the bottom shows the same function key shortcuts as the first screenshot.

```

found=1;
break;
}
}
if(found==0)
{
printf("Sorry :( %s id not there in the array: ",key);
}
getch();
}

void lowercase(char key[])
{
int i=0;
while(key[i]!='\0')
{
if(key[i]>='A' && key[i]<='Z')
{
key[i]=key[i]+32;
}
i++;
}
```

```
{
key[i]=key[i]+32;
}
i++;
}
}
```

43:1

F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu

OUTPUT:

```
Enter the string you want to search: THAR
thar found in the array at index 5 :)
```

2. Write a simple C program to perform linear search on an array of Strings to find
Checking for substring in each string

CODE:

```
File Edit Search Run Compile Debug Project Options Window Help
SAAD3.2 1=[+]
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[4][50]={"saad kazi","naman pandey","gaurang chaurang","vinay swar"};
char key[50];
int i,flag=0;
clrscr();
printf("Enter substring to search: ");
gets(key);
for(i=0;i<4;i++)
{
if(strstr(a[i],key)!=NULL)
{
printf("Substring found in string %d: %s\n",i+1,a[i]);
flag=1;
}
}
if(flag==0)
{
* 1:1
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu
```

```
File Edit Search Run Compile Debug Project Options Window Help
SAAD3.2 1=[+]
char a[4][50]={"saad kazi","naman pandey","gaurang chaurang","vinay swar"};
char key[50];
int i,flag=0;
clrscr();
printf("Enter substring to search: ");
gets(key);
for(i=0;i<4;i++)
{
if(strstr(a[i],key)!=NULL)
{
printf("Substring found in string %d: %s\n",i+1,a[i]);
flag=1;
}
}
if(flag==0)
{
printf("Substring not found in any string.\n");
}
getch();
}
* 26:1
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu
```

OUTPUT:

```
Enter substring to search: chaurang
Substring found in string 3: gaurang chaurang
```

Marks Obtained	Dated signature of Teacher
-----------------------	-----------------------------------

Process Related (35)	Product Related (15)	Total (50)	