VP Vidyalankar Polytechnic	DEPARTMENT OF COMPUTER ENGINEERING

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:	9
Title of Experiment	* Write a 'C' Program to Sort an Array of Strings using Selection Sort Method.

Aim: * Write a 'C' Program to Sort an Array of Strings using Selection Sort Method..

Algorithm:

Step 1: Start
Step 2: Declare a 2D character array a[5][11] and a temporary array temp[20]
Step 3: Declare integer variables i, j, min, b
Step 4: Clear screen using clrscr()
Step 5: Print "Enter the strings in the array:"
Step 6: Run a loop from i = 0 to i < 5
Step 6.1: Scan a string and store it in a[i]
Step 7: Run a loop from i = 0 to i < 5
Step 7.1: Set min = i
Step 7.2: Run a nested loop from j = i + 1 to j < 5
Step 7.2.1: Compare a[j] with a[min] using strcmp() and store result in b
Step 7.2.2: If b < 0, then set min = j
Step 7.3: Swap a[i] and a[min] using temp and strcpy()
Step 8: Print "Sorted Array:"
Step 9: Run a loop from i = 0 to i < 5
Step 9.1: Print a[i]
Step 10: Stop

CODE:

```
 ≡  File  Edit  Search  Run  Compile  Debug  Project  Options    Window  Help
[■]═══════════════════ SAAD9.C ═══════════════════1=[↕]
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[5][11],temp[20];
int i,j,min,b;
clrscr();
printf("Enter the strings in the array:\n");
for(i=0;i<5;i++)
{
scanf("%s",a[i]);
}
for(i=0;i<5;i++)
{
min=i;
for(j=i+1;j<5;j++)
{
b=strcmp(a[j],a[min]);
if(b<0)
{
═══ 3:23 ═══
F1 Help  F2 Save  F3 Open  Alt-F9 Compile  F9 Make  F10 Menu
```

```
 ≡  File  Edit  Search  Run  Compile  Debug  Project  Options    Window  Help
[■]═══════════════════ SAAD9.C ═══════════════════1=[↕]
for(j=i+1;j<5;j++)
{
b=strcmp(a[j],a[min]);
if(b<0)
{
{
min=j;
}
}
strcpy(temp,a[i]);
strcpy(a[i],a[min]);
strcpy(a[min],temp);
}
printf("\nSorted Array:\n");
for(i=0;i<5;i++)
{
printf("%s\n",a[i]);
}
getch();
}
}
═══ 37:23 ═══
F1 Help  F2 Save  F3 Open  Alt-F9 Compile  F9 Make  F10 Menu
```

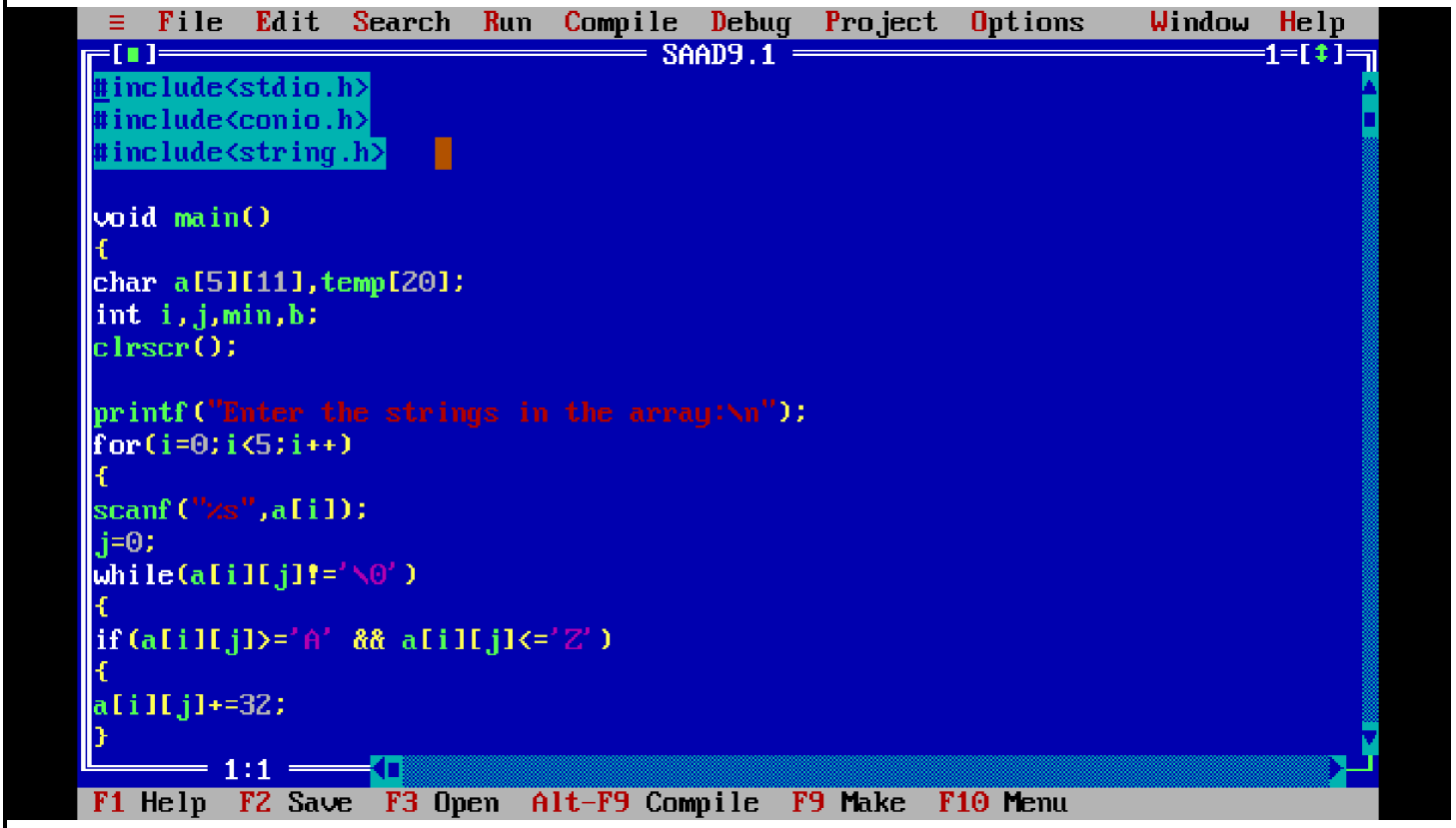
OUTPUT: -

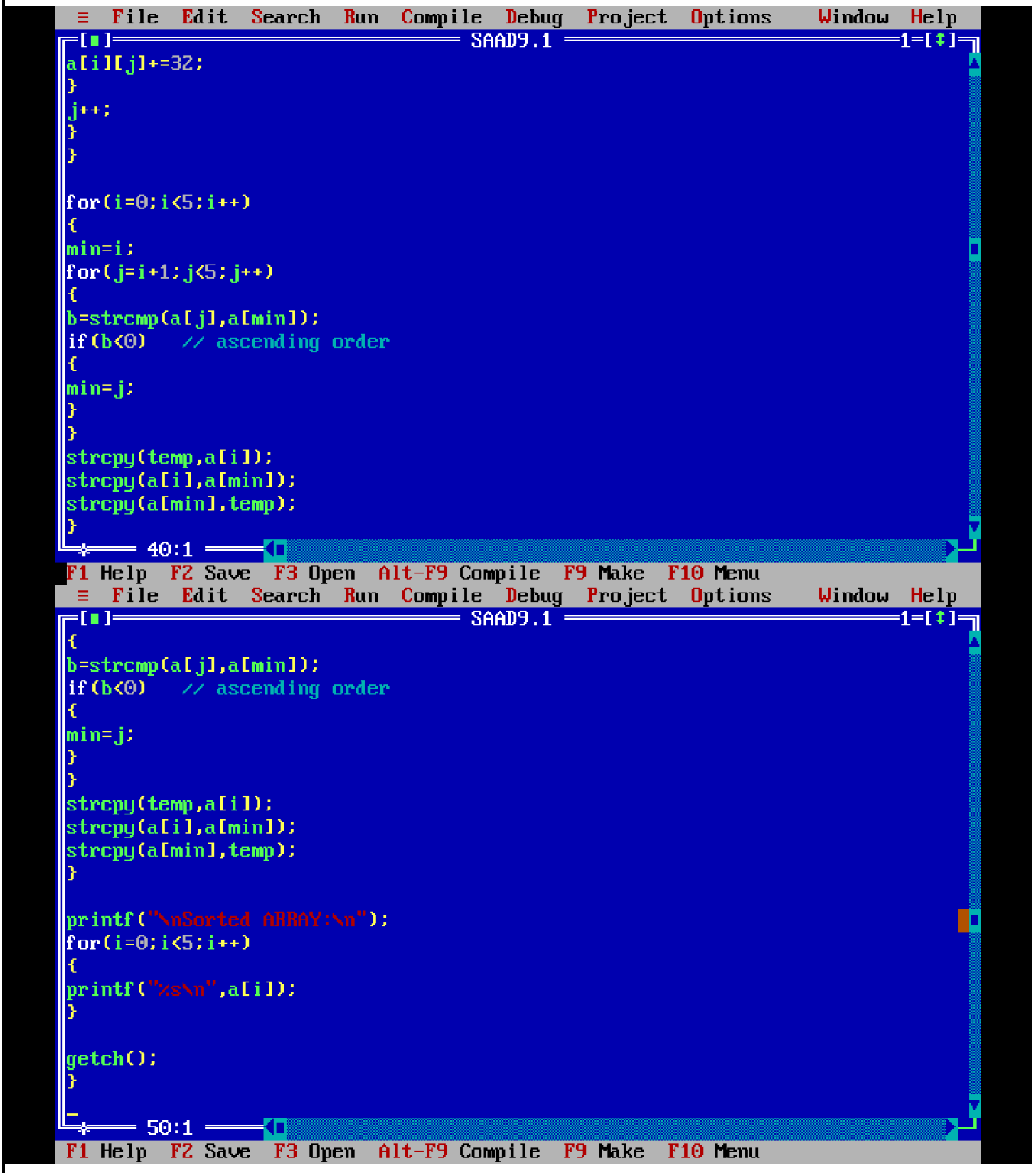

Enter the strings in the array:
elephant
dog
cat
bat
apple
Sorted Array:
apple
elephant
dog
cat
bat

Practical Related Questions:

Extend your Selection Sort implementation to support case-insensitive sorting of strings. Ensure that uppercase and lowercase versions of the same letter are treated as equal during sorting.

CODE:




File Edit Search Run Compile Debug Project Options Window Help
SAAD9.1
a[i][j]+=32;
}
j++;
}
}
for(i=0;i<5;i++)
{
min=i;
for(j=i+1;j<5;j++)
{
b=strcmp(a[j],a[min]);
if(b<0) // ascending order
{
min=j;
}
}
strcpy(temp,a[i]);
strcpy(a[i],a[min]);
strcpy(a[min],temp);
}
40:1
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu
File Edit Search Run Compile Debug Project Options Window Help
SAAD9.1
{
b=strcmp(a[j],a[min]);
if(b<0) // ascending order
{
min=j;
}
}
strcpy(temp,a[i]);
strcpy(a[i],a[min]);
strcpy(a[min],temp);
}
printf("\nSorted ARRAY:\n");
for(i=0;i<5;i++)
{
printf("%s\n",a[i]);
}
getch();
}
50:1
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu

OUTPUT:

```
Enter the strings in the array:
saad bmw apple kia jaguar

Sorted ARRAY:
apple
bmw
jaguar
kia
saad
_
```

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