Program- Selection Sort

```c
#include <stdio.h
int main()
{
int i,k,j,min,temp,n;
int a[15];

printf("Enter the number of elements \n");
scanf("%d",&n);

printf("Enter %d elements \n",n);
for(i=0;i<n;i++)
        scanf("%d",&a[i]);

printf("Unsorted Array \n");
for(i=0;i<n;i++)
        printf("%d ",a[i]);

for(i=0;i<n;i++)
{
        min=i;
        for(j=i+1;j<n;j++)
        {
                if(a[j]<a[min])
                        min=j;
        }

        temp=a[i];
```

```
        a[i]=a[min];

        a[min]=temp;


        printf("\n The elements sorted after %d pass are: ",i+1);


        for(k=0;k<n;k++)
                printf("%d \t",a[k]);


}


return 0;
}
```

Output:

Enter the number of elements

7

Enter 7 elements

11 33 5 4 1 66 22

Unsorted Array

11 33 5 4 1 66 22

The elements sorted after 1 pass are: 1 33	5	4	11	66	22
The elements sorted after 2 pass are: 1 4	5	33	11	66	22
The elements sorted after 3 pass are: 1 4	5	33	11	66	22
The elements sorted after 4 pass are: 1 4	5	11	33	66	22
The elements sorted after 5 pass are: 1 4	5	11	22	66	33
The elements sorted after 6 pass are: 1 4	5	11	22	33	66
The elements sorted after 7 pass are: 1 4	5	11	22	33	66

Program- Insertion Sort

```c
#include <stdio.h>

int main()
{
int i,n,k,j,key;
int a[15];

printf("Enter the number of elements \n");
scanf("%d",&n);

printf("Enter %d elements \n",n);
for(i=0;i<n;i++)
        scanf("%d",&a[i]);


printf("Unsorted Array \n");
for(i=0;i<n;i++)
        printf("%d ",a[i]);


for(j=1;j<=n;j++)
{
        key =a[j];
        i=j-1;

        while(i>=0 && a[i]>key)
        {
                a[i+1]=a[i];
                i--;
```

```
        }

        a[i+1]=key;

        printf("\n The elements sorted after %d pass are: ",j);


        for(k=0;k<n;k++)

                printf("%d \t",a[k]);

}



return 0;

}
```

Output:

Enter the number of elements

5

Enter 5 elements

1

33

41

15

7

Unsorted Array

1 33 41 15 7

 The elements sorted after 1 pass are: 1 33	41	15	7

 The elements sorted after 2 pass are: 1 33	41	15	7

 The elements sorted after 3 pass are: 1 15	33	41	7

 The elements sorted after 4 pass are: 1 7	15	33	41

 The elements sorted after 5 pass are: 1 7	15	33	41