

Program 20(a): Write A C Programming on SELECTION SORT

ALGORITHM:

Step1:START

Step2:INPUT A[100],N,I,J,position,swap

Step3:Enter member of elements

Step4:Enter the numbers

Step5:Start a loop from i=0;i<n-1:position=i

Step6:Start inner loop from j=i+1 to j<n

 If(a position >a[j])

 Position=j

 If position = i

 Swap=a[i]

 a[i]=a[position]

 A[position]=swap

Step7:Print sorted array

Step8:Display a[i]

Step9:Stop

Program:

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
int a[100], n, i, j, position, swap;
```

```
printf("Enter number of elements\n");
```

```
scanf("%d", &n);
printf("Enter %d Numbers\n",n);
for (i = 0; i < n; i++)
scanf("%d", &a[i]);
for(i=0;i<n-1;i++)
{
position=i;
for(j=i+1;j<n;j++)
{
if(a[position]>a[j])
position=j;
}
if(position!=i)
{
swap=a[i];
a[i]=a[position];
a[position]=swap;
}
}
printf("Sorted Array:\n");
for(i = 0; i < n; i++)
printf("%d\n", a[i]);

return 0;
}
```

OUTPUT:

Enter number of elements 5

Enter 5 numbers

5 8 1 9 2

Sorted array

1

2

5

8

9

VIVA QUESTION:

1. What is selection sort
2. What is swapping
3. What is an array
4. What is the time complexity of selection sort
5. What is the space complexity of selection sort

Program 20(b): Write A C Programming on BUBBLE SORT**ALGORITHM:**

Step1:START

Step2:Read array[100],n,c,d,swap

Step3:Enter number of elements

Step4:Enter the integers

Step5:Use for loop from c=0;c<n,c++

Step6: Use for loop from d=0;d<n-c-1,d++

 If(array[d]>array[d++])

 Calculate swap=array[d]

Step7: Again use for loop from d=0;d<n-c-1,d++

 Array[d]=array[d+1]

 Array[d+1]=swap

Step8:Print sorted array in ascending order

Step9:Use loop for c=0,c<n,c++

Step10:Display array[c]

Step11:Stop

Program:

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
int array[100], n, c, d, swap;
```

```
printf("Enter number of elements\n");
```

```
scanf("%d", &n);
```

```
printf("Enter %d integers\n",n);
```

```
for (c = 0; c < n; c++)
```

```
scanf("%d", &array[c]);
```

```
for(c= 0;c <n- 1; c++)
```

```
{
```

```
for(d=0 ;d < n -c -1;d++)
```

```
{
```

```

if(array[d]>array[d+1])/*Fordecreasing order use '<' instead of '>' */
{
swap  = array[d];
array[d]=array[d+1];
array[d+1] = swap;
}
}
}

printf("Sorted list in ascending order:\n");
for (c = 0; c < n; c++)
printf("%d\n",array[c]);
return 0;
}

```

Output:

Enter number of elements : 10

Enter 10 integers

9 1 5 4 3 2 8 7 6 10

Sorted list in ascending order

1

2

3

4

5

6

7

8

9

10

VIVA QUESTION:

1. What is bubble sort
2. What is swapping
3. What is an array
4. Time complexity of bubble sort is low or high
5. Space complexity of bubble sort is low or high