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**I.T. – III**

**SELCTION SORT**

#include<stdio.h>

#define MAX 20

int main() {

int arr[MAX], i, j, k, n, temp, smallest;

printf("\nEnter the number of elements : ");

scanf("%d", & n);

for (i = 0; i < n; i++) {

printf("\nEnter element %d : ", i + 1);

scanf("%d", &arr[i]);

}

printf("\nUnsorted list is : \n");

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

printf("%d ", arr[i]);

printf("\n");

/\*Selection sort\*/

for (i = 0; i < n - 1; i++) {

/\*Find the smallest element\*/

smallest = i;

for (k = i + 1; k < n; k++) {

if (arr[smallest] > arr[k])

smallest = k;

}

if (i != smallest) {

temp = arr [i];

arr[i] = arr[smallest];

arr[smallest] = temp;

}

printf("\nAfter Pass %d elements are : ", i + 1);

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

printf("%d ", arr[ j]);

printf("\n");

}

printf("\nSorted list is : \n");

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

printf("%d ", arr[i]);

return (0);

}

**OUTPUT**

Enter the number of elements : 12

Enter element 1 : 2

Enter element 2 : 32

Enter element 3 : 12

Enter element 4 : 32

Enter element 5 : 43

Enter element 6 : 12

Enter element 7 : 13

Enter element 8 : 43

Enter element 9 : 123

Enter element 10 : 43

Enter element 11 : 54

Enter element 12 : 09

Unsorted list is :

2 32 12 32 43 12 13 43 123 43 54 9

After Pass 1 elements are : 2 32 12 32 43 12 13 43 123 43 54 9

After Pass 2 elements are : 2 9 12 32 43 12 13 43 123 43 54 32

After Pass 3 elements are : 2 9 12 32 43 12 13 43 123 43 54 32

After Pass 4 elements are : 2 9 12 12 43 32 13 43 123 43 54 32

After Pass 5 elements are : 2 9 12 12 13 32 43 43 123 43 54 32

After Pass 6 elements are : 2 9 12 12 13 32 43 43 123 43 54 32

After Pass 7 elements are : 2 9 12 12 13 32 32 43 123 43 54 43

After Pass 8 elements are : 2 9 12 12 13 32 32 43 123 43 54 43

After Pass 9 elements are : 2 9 12 12 13 32 32 43 43 123 54 43

After Pass 10 elements are : 2 9 12 12 13 32 32 43 43 43 54 123

After Pass 11 elements are : 2 9 12 12 13 32 32 43 43 43 54 123

Sorted list is :

2 9 12 12 13 32 32 43 43 43 54 123