



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF MECHANICAL AND MANUFACTURING
ENGINEERING

**CS-114 - Fundamental of
Programing**

LAB MANUAL # 8 (lab task)

ME -15 (C)

SUBMITTED BY:

MOHAMMAD GULZAIB

SUBMITTED TO:

SIR M. AFFAN

Write a C++ program to calculate average of numbers of array.

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int len,sum=0;

    cout<<"Enter length of array ";
    cin>>len;
    int arr[len]={};
    for(int i=0;i<len;i++){
        cout<<"Enter number ";
        cin>>arr[i];
    }
    cout<<"The array is ";
    for(int i=0;i<len;i++){
        cout<<arr[i]<<" ";
    }
    cout<<endl;
    for(int i=0;i<len;i++){
        sum+=arr[i];
    }
    float avg,len1;
    len1=len;
    avg=sum/len1;
    cout<<"the average is "<<avg;

    return 0;
}
```

```
Enter length of array 5
Enter number 6
Enter number 7
Enter number 3
Enter number 89
Enter number 2
The array is 6 7 3 89 2
the average is 21.4
-----
Process exited after 10.5 seconds with return value 0
Press any key to continue . . .
```

Implement Bubble sort on an array of 5 integers.

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int ele=5;
    int arr[ele]={};
    for (int i = 0; i < ele; i++)
    {
        cout<<"Enter number of array "; //the array will be entered by user
        cin>>arr[i];
    }
    cout<<"The sorted array is ";
    int c=1;
    while (c<5){
        for(int i=0;i<5-c;i++){
            int toswap;
            if(arr[i]>arr[i+1]){
                toswap=arr[i];
                arr[i]=arr[i+1];
                arr[i+1]=toswap;
            }
        }
        c++;
    }
    for(int i=0;i<ele;i++){
        cout<<arr[i]<<" ";
    }

    return 0;
}
```

```
C:\Users\gulza\OneDrive\Desktop\bubble sort.exe
Enter number of array 6
Enter number of array 4
Enter number of array 8
Enter number of array 9
Enter number of array 12
The sorted array is 4 6 8 9 12
-----
Process exited after 26.8 seconds with return value 0
Press any key to continue . . .
```

Implement Selection Sort on an array of 5 integers.

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int ele=5;
    int arr[ele]={};
    for (int i = 0; i<ele; i++)
    {
        cout<<"Enter number of array ";
        cin>>arr[i];
    }
    cout<<"The sorted array in ";
    for(int j=0;j<ele;j++)
    {
        for(int k=j+1; k<ele; k++)
        {
            int toswap;
            if(arr[j]>arr[k]){
                toswap=arr[j];
                arr[j]=arr[k];
                arr[k]=toswap;
            }
        }
        cout<<arr[j]<<" ";
    }
    return 0;
}
```

Enter number of array 5
Enter number of array 6
Enter number of array 8
Enter number of array 90
Enter number of array 101
The sorted array in 5 6 8 90 101

Process exited after 10.4 seconds with return value 0
Press any key to continue . . .