



National University of Science and
technology
(NUST)

CS-114 - Fundamental of Programing

Lab Task # 06

Course Instructor: Dr Jawad Khan

Lab Instructor: Muhammad Affan

Student name: Asim Imran

QALAM ID: 476434

Date: 29/11/2023

TASK NO.1

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

Solution

```
#include<iostream>
using namespace std;
int main(){
    int size, sum=0, avg=0;
    cout<<"Enter Number of Elements of the Array:";
    cin>>size;
    int arr[size];
    for(int i=0; i<size; i++){
        cout<<"Input element of array: ";
        cin>>arr[i];
        sum += arr[i];
    }
    avg=sum/size;
    cout<<"The Average is: "<<avg;

    return 0;
}
```

Output

```
C:\Users\ADMIN\OneDrive\Documents\L-8 T-1.exe
Enter Number of Elements of the Array:3
Input element of array: 13
Input element of array: 25
Input element of array: 16
The Average is: 18
-----
Process exited after 8.174 seconds with return value 0
Press any key to continue . . .
```

TASK NO.2

Implement Bubble sort on an array of 5 integers.

Solution

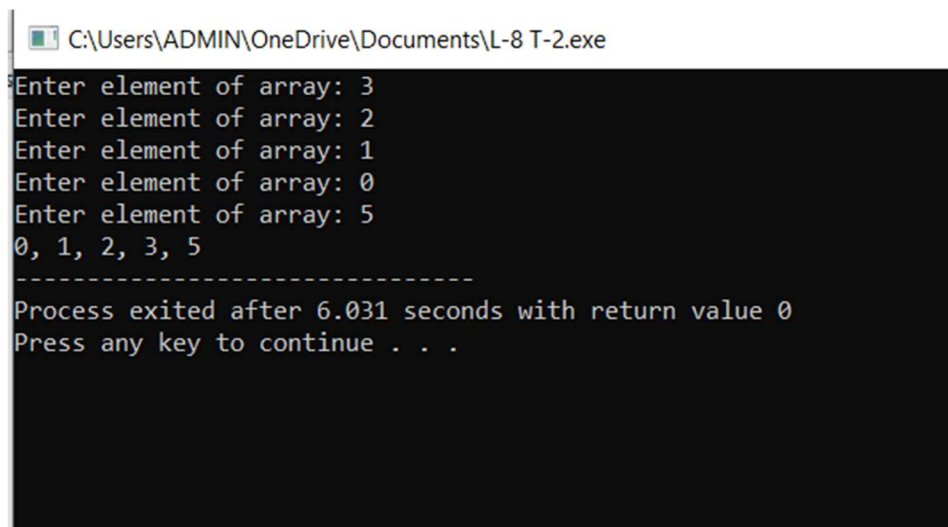
```
#include<iostream>
using namespace std;
int main(){
    int arr[5];
    int temp, i,j;
    for(i=0; i<5; i++){
        cout<<"Enter element of array: ";
        cin>>arr[i];
    }
    for(i=0; i<5; i++){
        for(j=0; j<5; j++){
```

```

if(arr[j]>arr[j+1]){
temp=arr[j+1];
arr[j+1]=arr[j];
arr[j]=temp;
}
}
}
for(i=0; i<4; i++){
cout<<arr[i]<<" ";
}
cout<<arr[4];
return 0;
}

```

Output



```

C:\Users\ADMIN\OneDrive\Documents\L-8 T-2.exe
Enter element of array: 3
Enter element of array: 2
Enter element of array: 1
Enter element of array: 0
Enter element of array: 5
0, 1, 2, 3, 5
-----
Process exited after 6.031 seconds with return value 0
Press any key to continue . . .

```

TASK NO.3

Implement Selection Sort on an array of 5 integers.

Solution

```
#include<iostream>
```

```

using namespace std;

int main(){

    int arr[5];

    int i,j, temp;

    for(i=0; i<5; i++){

        cout<<"Enter a Element of array: ";

        cin>>arr[i];

    }

    for(i=0; i<5; i++){

        for(j=i; j<5; j++){

            if(arr[i]>arr[j]){

                temp=arr[i];

                arr[i]=arr[j];

                arr[j]=temp;

            }

        }

    }

    for(i=0; i<4; i++){

        cout<<arr[i]<<" ";

    }

    cout<<arr[4];

    return 0;

}

```

Output

C:\Users\ADMIN\OneDrive\Documents\L-8 T-3.exe

Enter a Element of array: 25

Enter a Element of array: 31

Enter a Element of array: 64

Enter a Element of array: 89

Enter a Element of array: 74

25, 31, 64, 74, 89

Process exited after 8.146 seconds with return value 0

Press any key to continue . . .