

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY



CS-114- FUNDAMENTAL OF PROGRAMMING

LAB MANUAL 8 LAB TASKS

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SUBMITTED TO:

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TASK 1:

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

CODE:

```
#include <bits/stdc++.h>
using namespace std;
int main () {
    int n,sum=0;
    int arr[n]={}; //ask user to enter number of terms
    cout<<"Enter the number of elements : "<<endl;
    cin >>n;
    for(int i=1;i<=n;i++) {
        cout<<"Enter number of arrays : "<<endl;
        cin>>arr[i];
    }
    for(int i=1;i<=n;i++){
        cout<<arr[i]<<" , ";
        sum=sum+arr[i];
    }
    cout<<endl;
    cout<<"Sum of your array : "<<sum<<endl; //result of sum of array
    //declare variables in float for correct answer
    float average,len;
    len=n;
    average=sum/len;
    cout<<"Average is : "<<average<<endl;
    return 0;
}
```

```
C:\Users\Al-Wajid Laptops\OneDrive\Documents\lab 8 task 1.exe
Enter the number of elements :
5
Enter number of arrays :
2
Enter number of arrays :
3
Enter number of arrays :
4
Enter number of arrays :
2
Enter number of arrays :
5
2 , 3 , 4 , 2 , 5 ,
Sum of your array : 16
Average is : 3.2
-----
Process exited after 6.387 seconds with return value 0
Press any key to continue . . .
```

TASK 2:

. Implement Bubble sort on an array of 5 integers.

CODE:

```
#include <bits/stdc++.h>
using namespace std;
int main () {
    //code for bubble sort on an array of 5 integers
    int n = 5; //initialize n with 5
    int arr[5];
    for (int i = 0; i<5; i++){
        cout<<"Enter the number of your array : ";
        cin>>arr[i];
    }
    int count = 1;
    while(count<5){
        for (int i = 0; i<5-count; i++){
            if (arr[i]>arr[i+1]){
                int y =arr[i]; //only declare y for swapping
                arr[i]=arr[i+1];
                arr[i+1]=y; }
        }
        count++ ;
    }
    for(int i=0;i<5;i++){
        cout<<arr[i]<<" "; // output
    }
    cout<<endl;
    return 0;
}
```

```
C:\Users\Al-Wajid Laptops\OneDrive\Documents\as
Enter the number of your array :5
Enter the number of your array :23
Enter the number of your array :41
Enter the number of your array :45
Enter the number of your array :67
5 23 41 45 67
-----
Process exited after 8.3 seconds with ret
Press any key to continue . . .
```

TASK 3:

Implement Selection Sort on an array of 5 integers.

CODE:

```
#include <bits/stdc++.h>
using namespace std;
int main ()
{
    //code for selection sort on an array of 5 integers
    int n = 5; //initialize n with 5
    int arr[5];
    for (int i = 0; i<5; i++){
        cout<<"Enter the number of your array :";
        cin>>arr[i];
    }

    for (int i = 0; i<5-1; i++) {
        for(int j=i+1;j<n;j++) {
            if (arr[j]<arr[i]) {
                int temp = arr[j]; //for swaping arrays
                arr[j]=arr[i];
                arr[i]=temp;
            }
        }
    }

    for(int i=0;i<5;i++){
        cout<<arr[i]<<" "; // output
    }
    cout<<endl;
    return 0;
}
```

C:\Users\Al-Wajid Laptops\OneDrive\Documents\lab 8 task

Enter the number of your array :56
Enter the number of your array :98
Enter the number of your array :7
Enter the number of your array :6
Enter the number of your array :34
6 7 34 56 98

Process exited after 7.475 seconds with return
Press any key to continue . . .