NUST-SMME-

CS-114 Fundamentals of Programming LAB MANUAL#08

Date of submission: - 29-11-2023

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Lab Manual 8: Arrays

TASK 1:

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

CODE

```cpp
#include<iostream>
using namespace std;
int main()
{
cout<<"TASK 1:- \n";
cout<<"Please enter the number of elements in your array:- \n";
int n;
cin>>n;

int b[n];
float average, sum =0;
cout<<"Please enter the array:-\n";
for(int i = 0; i<n; i++)
{
    cin>>b[i];
}
cout<<"The average of the elements of your array is:- \n";

//first finding sum
for(int i= 0; i<n; i++)
{
    sum = sum + b[i];
}
average = sum/n;
cout<<average;

//END OF TASK1
```

OUTPUT

```
TASK 1:-
Please enter the number of elements in your array:-
6
Please enter the array:-
1
2
3
4
5
6
The average of the elements of your array is:-
3.5
Please enter the number of elements in your array:-
10
Please enter the array:-
1
3
5
7
2
3
4
5
0
9
The average of the elements of your array is:-
3.9
```

TASK 2:

Q. Implement bubble sort on an array of 5 integers

CODE

```
cout<<"\n TASK 2:- BUBBLE SORTING \n";
cout<<"Please enter your integer array:- \n";
int a[5];
for(int i= 0; i<5; i++)
{
    cin>>a[i];
}
int l;
for(int i= 0; i<5; i++){
    for(int i = 0; i<4; i++){
        if(a[i] > a[i+1])
        {
            l = a[i];
            a[i] = a[i+1];
            a[i+1] = l;
        }
    }
}
cout<<"Your sorted array is:- \n";
for(int i =0; i<5; i++){
    cout<<a[i]<<' ';
}
//END OF TASK 2
```

OUTPUT

```
 TASK 2:- BUBBLE SORTING
Please enter your integer array:-
3
5
2
8
9
Your sorted array is:-
2 3 5 8 9
```

```
 TASK 2:- BUBBLE SORTING
Please enter your integer array:-
1
5
43
2
9
Your sorted array is:-
1 2 5 9 43
```

TASK 3:

Q. Implement Selection sort on an array of 5 integers

CODE

```cpp
//END OF TASK 2
cout<<"\n TASK 3:- SELECTION SORTING \n";
int d[5];
int element=0;
cout<<"PLEASE ENTER YOUR INTEGER ARRAY:- \n";
for(int i =0; i<5; i++){
    cin>>d[i];
}
for(int i =0; i<5; i++){
    element = d[i];
    for(int j=i; j<5; j++)
    {
        if(element > d[j])
        {
            element = d[j];
            d[j] = d[i];
            d[i] = element;
        }
    }
}
for(int i =0; i<5; i++){
    cout<<d[i]<<' ';
}
return 0;
}
```

OUTPUT: -

```
 TASK 3:- SELECTION SORTING
PLEASE ENTER YOUR INTEGER ARRAY:-
6
7
2
4
1
1 2 4 6 7
--------------------------------
Process exited after 7.148 seconds with return value 0
Press any key to continue . . .
```

```
 TASK 3:- SELECTION SORTING
PLEASE ENTER YOUR INTEGER ARRAY:-
5
2
2
9
8
2 2 5 8 9
--------------------------------
Process exited after 4.92 seconds with return value 0
Press any key to continue . . .
```