

Lab Manual 8, Lab tasks 1-3

Task 1:

Question:

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

Code:

```
int n;

float sum = 0, avg;

cout<<"Enter the array size"<<endl;

cin>>n;

int a[n];

cout<<endl<<"Enter an array of "<<n<<" elements "<<endl;

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

    cin>>a[i];

    sum = sum + a[i];

}

cout<<"The sum of the array is "<<sum<<endl;

avg = sum/n;

cout<<"The average of the numbers is "<<avg;
```

Execute:

```
C:\Users\Personal\Desktop\Lab manual 8 lab tasks.exe
Enter the array size
4
Enter an array of 4 elements
3
2
1
5
The sum of the array is 11
The average of the numbers is 2.75
-----
Process exited after 8.177 seconds with return value 0
Press any key to continue . . .
```

Task 2:

Question:

Implement Bubble sort on an array of 5 integers.

Code:

```
int a[5], num;
```

```
cout<<"Enter an array of 5 integers"<<endl;
```

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

```
    cin>>a[i];
```

```
}
```

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

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

```
        if ( a[i] > a[j] ) {
```

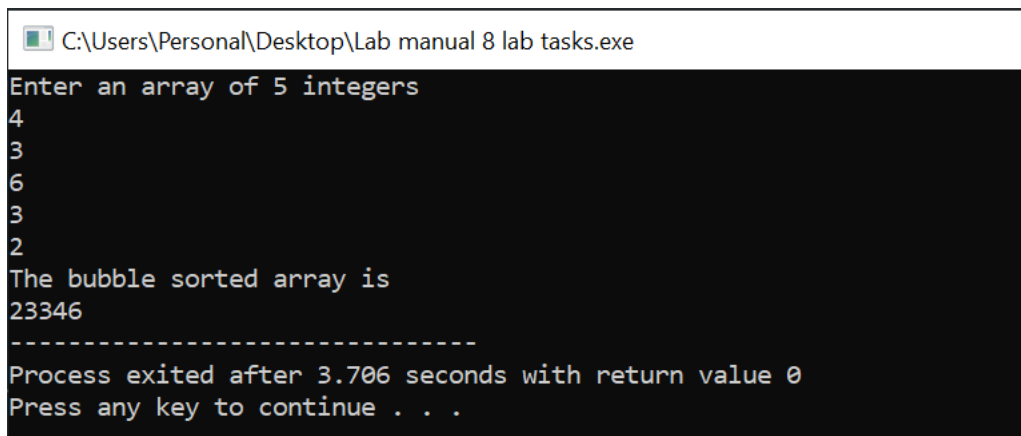
```

        num = a[i];
        a[i] = a[j];
        a[j] = num;
    }
}

cout<<"The bubble sorted array is "<<endl;
for ( int i = 0; i<5; i++ ) {
    cout<<a[i];
}

```

Execute:



C:\Users\Personal\Desktop\Lab manual 8 lab tasks.exe

```

Enter an array of 5 integers
4
3
6
3
2
The bubble sorted array is
23346
-----
Process exited after 3.706 seconds with return value 0
Press any key to continue . . .

```

Task 3:

Question:

Implement Selection Sort on an array of 5 integers.

Code:

```
int a[5], min;

cout<<"Enter an array of 5 integers "<<endl;
for ( int i=0; i<5; i++ ) {
    cin>>a[i];

}

for ( int i=0; i<5; i++ ) {
    min = a[i];
    for ( int j=i; j<5; j++ ) {
        if ( min > a[j] ) {
            min = a[j];
            a[j] = a[i];
            a[i] = min;
        }
    }
}

cout<<endl<<"After selection sort the array is "<<endl;
for ( int i=0; i<5; i++ ) {
    cout<<a[i];
}
```

Execute:

 C:\Users\Personal\Desktop\Lab manual 8 lab tasks.exe

```
Enter an array of 5 integers
```

```
5
```

```
3
```

```
4
```

```
2
```

```
1
```

```
After selection sort the array is
```

```
12345
```

```
-----
```

```
Process exited after 3.96 seconds with return value 0
```

```
Press any key to continue . . .
```