

NAME: RAMZAN SAMEER

CMS ID: 464899

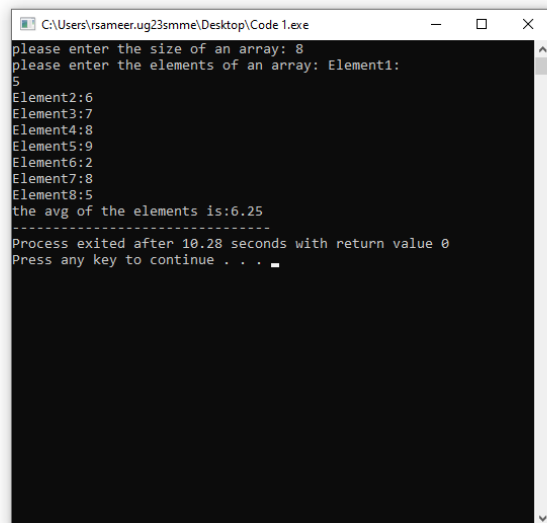
SEC-A ME-15

LAB MNAUAL 8

Lab Task:

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

```
#include<iostream>
using namespace std;
int main(){
    int p;
    cout<<"please enter the size of an array: ";
    cin>>p;
    // now checking invalid condition
    if(p<=0){
        cout<<"invalid input";
        return 1;
    }
    float array[p];
    cout<<"please enter the elements of an array: ";
    for(int i = 0; i<p; i++){
        cout<< "Element"<<i+1<<":";
        cin>>array[i];
    }
    float sum = 0;
    for(int i = 0; i<p; i++){
        sum+=array[i];
    }
    float average = sum/p;
    cout<<"the avg of the elements is:"<<average;
    return 0;
}
```

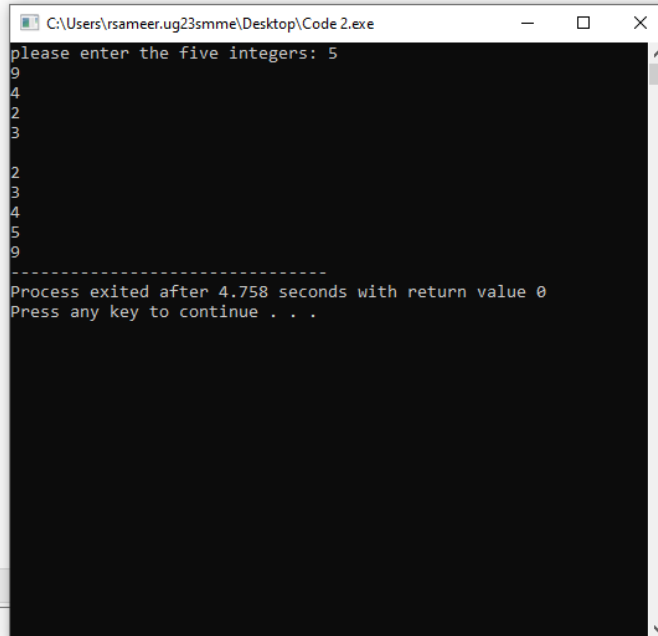


The screenshot shows a Windows command prompt window titled "C:\Users\rsameer.ug23smme\Desktop\Code 1.exe". The program prompts the user to enter the size of an array (8) and then the elements of the array. The elements entered are 5, 6, 7, 8, 9, 2, 8, and 5. The program calculates the average of these elements as 6.25 and displays the result. The window also shows the process exiting after 10.28 seconds with a return value of 0.

```
C:\Users\rsameer.ug23smme\Desktop\Code 1.exe
please enter the size of an array: 8
please enter the elements of an array: Element1:
5
Element2:6
Element3:7
Element4:8
Element5:9
Element6:2
Element7:8
Element8:5
the avg of the elements is:6.25
-----
Process exited after 10.28 seconds with return value 0
Press any key to continue . . .
```

2. Implement Bubble sort on an array of 5 integers.

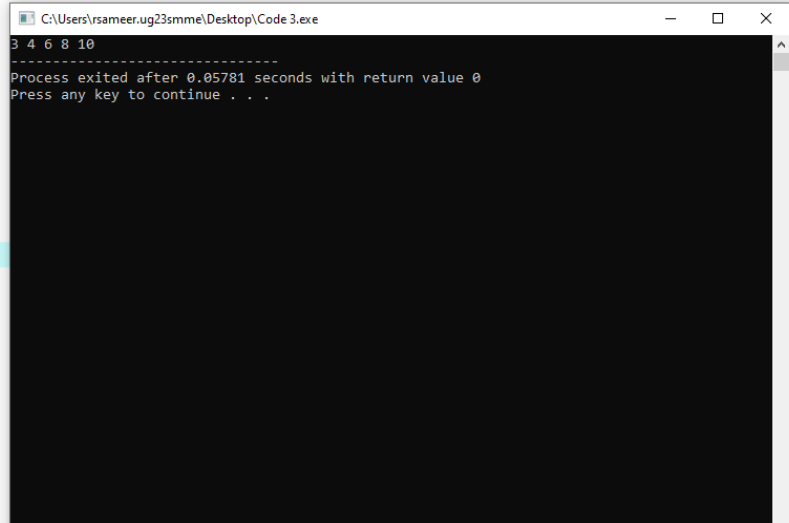
```
#include<iostream>
using namespace std;
int main(){
    int arr[5];
    cout<<"please enter the five integers: ";
    for(int i = 0; i<5; i++){
        cin>>arr[i];
    }
    int temp = 0;
    for(int i = 0; i<5; i++){
        for(int k = 0; k<4; k++){
            if(arr[k]>arr[k+1]){
                int temp = arr[k];
                arr[k] = arr[k+1];
                arr[k+1] = temp;
            }
        }
    }
    for(int j=0; j<5; j++){
        cout<<endl;
        cout<<arr[j];
    }
    return 0;
}
```



```
C:\Users\rsameer.ug23smme\Desktop\Code 2.exe
please enter the five integers: 5
9
4
2
3
5
-----
Process exited after 4.758 seconds with return value 0
Press any key to continue . . .
```

3. Implement Selection Sort on an array of 5 integers.

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int p[5]={10,6,8,3,4},min =0;
    for(int i = 0; i<5; i++){
        min=p[i];
        for(int j=i; j<5; j++){
            if(min>p[j]){
                min = p[j];
                p[j] = p[i];
                p[i] = min;
            }
        }
    }
    for(int i = 0; i<5; i++){
        cout<<p[i]<<" ";
    }
    return 0;
}
```



The screenshot shows a Windows command prompt window titled "C:\Users\rsameer.ug23smme\Desktop\Code 3.exe". The output of the program is displayed on the first line: "3 4 6 8 10". Below this, a separator line of dashes is shown. The next line indicates the process exit: "Process exited after 0.05781 seconds with return value 0". The final line prompts the user: "Press any key to continue . . .".