LAB 06

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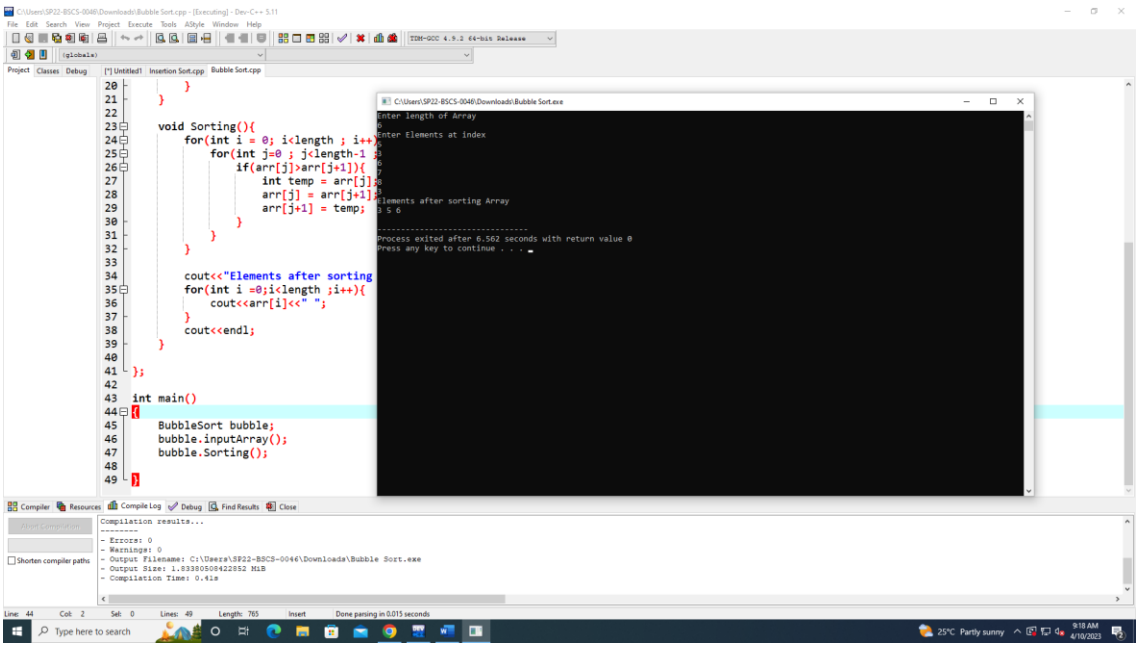
Section AM
SP22-BSCS-0046

1. **BUBBLE SORT.**
   SOURCE CODE:

```
#include<iostream>
using namespace std;

class BubbleSort{
	public:
		int arr[5];
		int length;

	BubbleSort(){
		cout<<"Enter length of Array "<<endl;
		cin>>length;

		arr[length];
	}

	void inputArray(){
		cout<<"Enter Elements at index"<<endl;
		for(int i = 0 ; i< length ;i++){
			cin>>arr[i];
		}
	}

	void Sorting(){
		for(int i = 0; i<length ; i++){
			for(int j=0 ; j<length-1 ;j++){
				if(arr[j]>arr[j+1]){
					int temp = arr[j];
					arr[j] = arr[j+1];
					arr[j+1] = temp;
				}
			}
		}
```

```
                cout<<"Elements after sorting Array "<<endl;
                for(int i =0;i<length ;i++){
                        cout<<arr[i]<<" ";
                }
                cout<<endl;
        }

};

int main()
{
        BubbleSort bubble;
        bubble.inputArray();
        bubble.Sorting();

}
```

PICTURE:



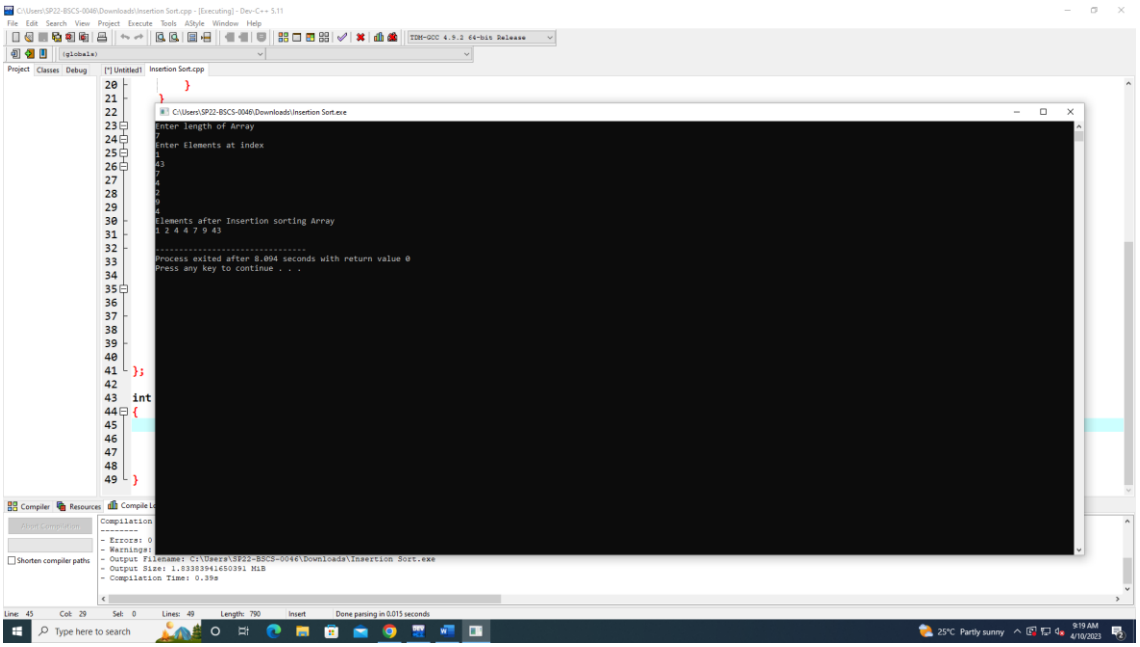
2. INSERTION SORT.

SOURCE CODE:

```
#include<iostream>
using namespace std;

class InsertionSort{
        public:
                int arr[100];
                int length;
```

```
	InsertionSort(){
		cout<<"Enter length of Array "<<endl;
		cin>>length;

		arr[length];
	}

	void inputArray(){
		cout<<"Enter Elements at index"<<endl;
		for(int i = 0 ; i<length ;i++){
			cin>>arr[i];
		}
	}

	void Sorting(){
		for(int i = 0; i<length-1 ;i++){
			for(int j=i+1 ; j>0 ;j--){
				if(arr[j-1]>arr[j]){
					int temp = arr[j-1];
					arr[j-1] = arr[j];
					arr[j] = temp;
				}
			}
		}

		cout<<"Elements after Insertion sorting Array "<<endl;
		for(int i =0;i<length ;i++){
			cout<<arr[i]<<" ";
		}
		cout<<endl;
	}

};

int main()
{
	InsertionSort insertion;
	insertion.inputArray();
	insertion.Sorting();

}
```

PICTURE:

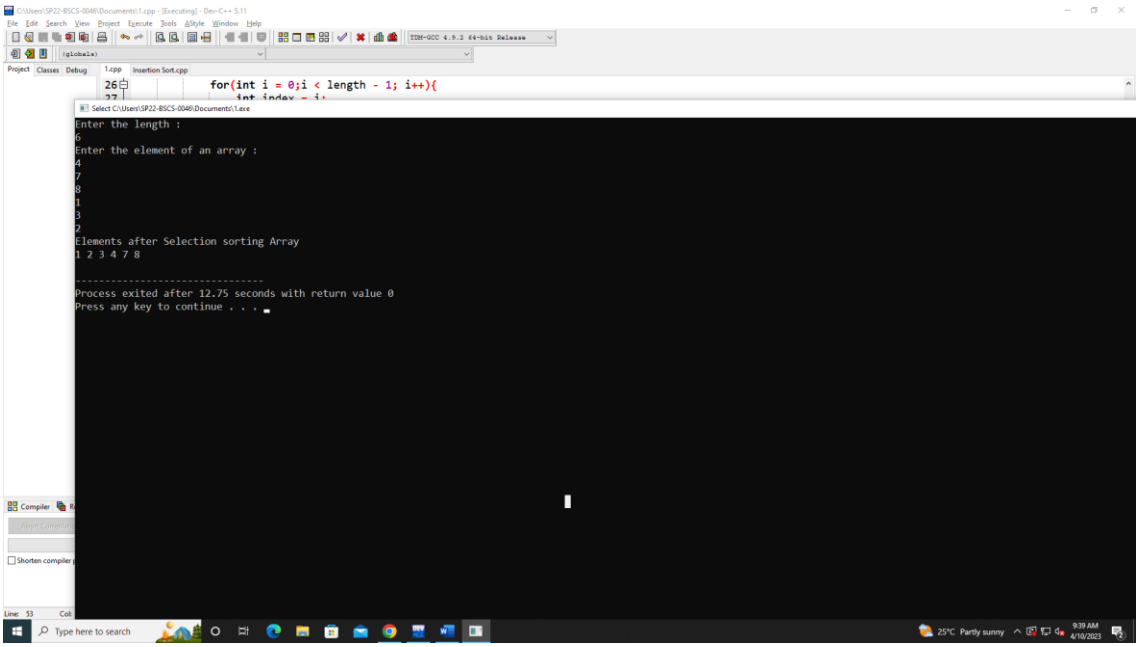


3. SELECTION SORT.

SOURCE CODE:

```
#include<iostream>
using namespace std;


class SelectionSort{
        public:
                int arr[100];
                int length;

                SelectionSort(){
                        cout<<"Enter the length : "<<endl;
                        cin>>length;

                        int arr[length];
                }

                void inputarray(){
                        cout<<"Enter the element of an array : "<<endl;
                        for(int i = 0;i < length;i++){
                                cin>>arr[i];

                        }
                }

                void Sorting(){
                        for(int i = 0;i < length - 1; i++){
```

```
                int index = i;
                for(int j = i+1;j < length; j++){
                        if(arr[j] < arr[index]){
                                index = j;
                        }
                }
                int temp = arr[i];
                arr[i] = arr[index];
                arr[index] = temp;
        }


        cout<<"Elements after Selection sorting Array "<<endl;
        for(int i =0;i<length ;i++){
                cout<<arr[i]<<" ";
        }
        cout<<endl;
    }
};


int main(){

    SelectionSort selection;
    selection.inputarray();
    selection.Sorting();


}
```
PICTURE:


for(int i = 0;i < length - 1; i++){
Select C:\Users\SP22-BSCS-0048\Documents\1.exe
Enter the length :
6
Enter the element of an array :
4
7
8
1
3
2
Elements after Selection sorting Array
1 2 3 4 7 8
Process exited after 12.75 seconds with return value 0
Press any key to continue . . .
Type here to search
25°C Partly sunny
9:39 AM
4/10/2023