Name :- Ahmed Ali Asif

SAP ID :- 55346

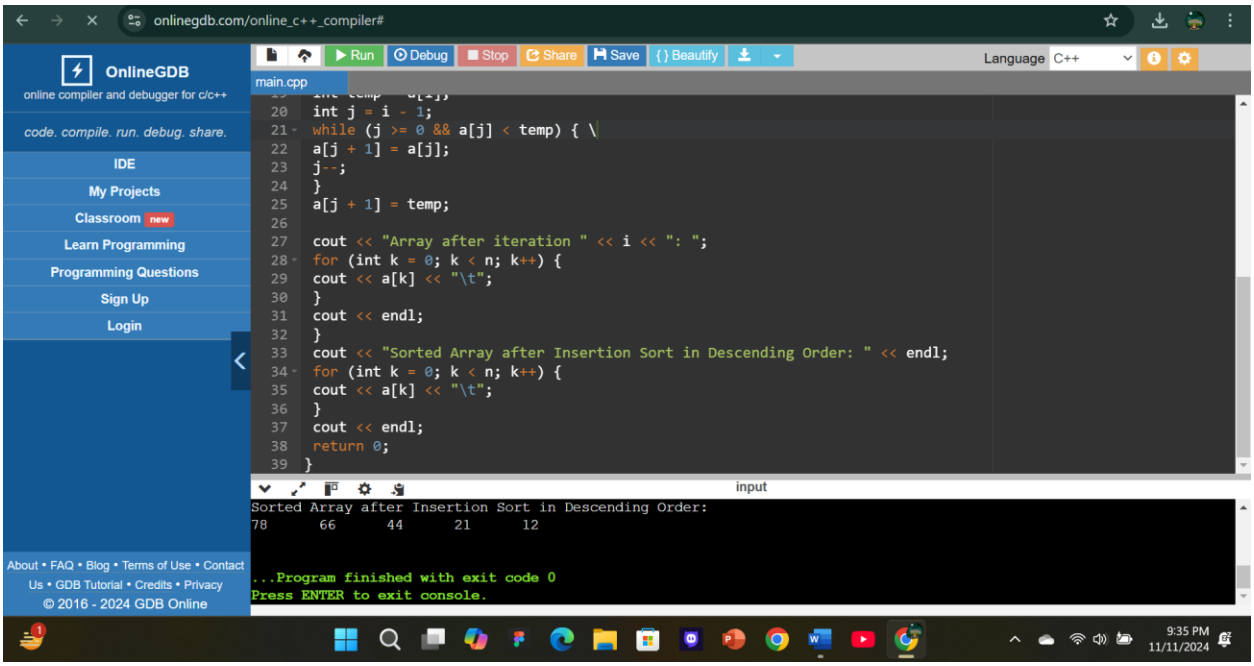
Section :- CS3-2

Q 1

```
#include<iostream>
using namespace std;
int main() {
 int n = 5;
 int a[n];
 // Take input for the array
 cout << "Enter 5 elements of the array: " << endl;
 for (int i = 0; i < n; i++) {
 cin >> a[i];
 }
cout << "Unsorted Array: " << endl;
 for (int k = 0; k < n; k++) {
 cout << a[k] << "\t";
 }
 cout << endl;
 cout << "Insertion Sort in Descending Order" << endl;
 // Insertion Sort in descending order
 for (int i = 1; i < n; i++) {
 int temp = a[i];
```

```
int j = i - 1;
while (j >= 0 && a[j] < temp) { \
a[j + 1] = a[j];
j--;
}
a[j + 1] = temp;

cout << "Array after iteration " << i << ": ";
for (int k = 0; k < n; k++) {
cout << a[k] << "\t";
}
cout << endl;
}
cout << "Sorted Array after Insertion Sort in Descending Order: " << endl;
for (int k = 0; k < n; k++) {
cout << a[k] << "\t";
}
cout << endl;
return 0;
}
```



Q 2

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

int main() {
   int n = 9;
   int a[n];

   cout << "Enter 9 elements of the array: " << endl;
   for (int i = 0; i < n; i++) {
      cin >> a[i];
   }

   cout << "Unsorted Array:" << endl;
```

```
for (int i = 0; i < n; i++) {
   cout << a[i] << " ";
}
cout << endl;

cout << "Bubble Sort" << endl;

for (int i = 0; i < n - 1; i++) {
   for (int j = 0; j < n - i - 1; j++) {
      if (a[j] > a[j + 1]) {

         int temp = a[j];
         a[j] = a[j + 1];
         a[j + 1] = temp;
      }
   }



   cout << "Array after pass " << i + 1 << ": ";
   for (int k = 0; k < n; k++) {
      cout << a[k] << " ";
   }
   cout << endl;
}
```

```
    cout << "Sorted Array after Bubble Sort is: " << endl;
    for (int i = 0; i < n; i++) {
        cout << a[i] << " ";
    }
    cout << endl;

    return 0;
}
```