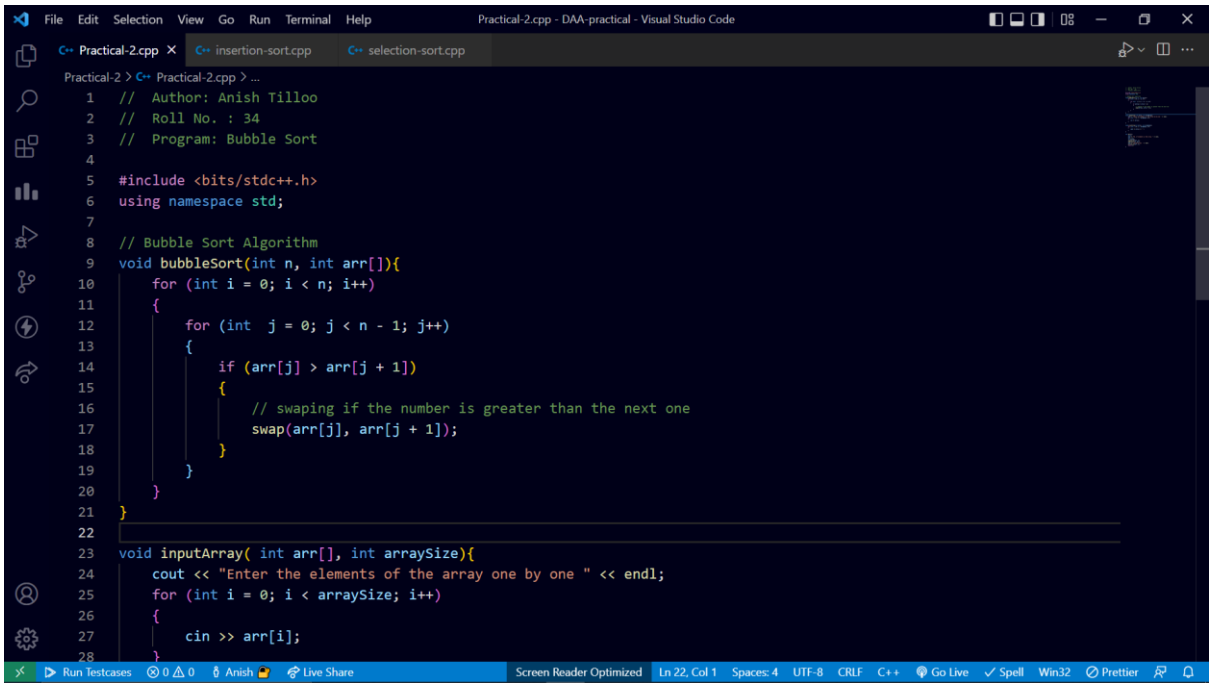
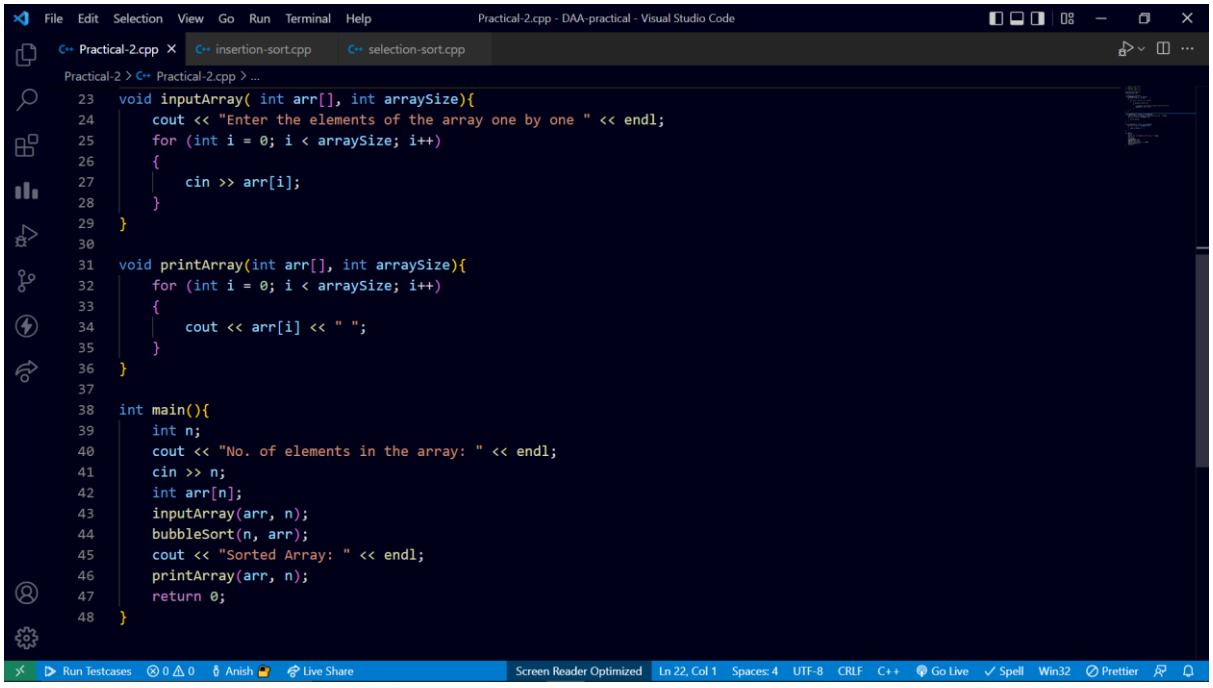
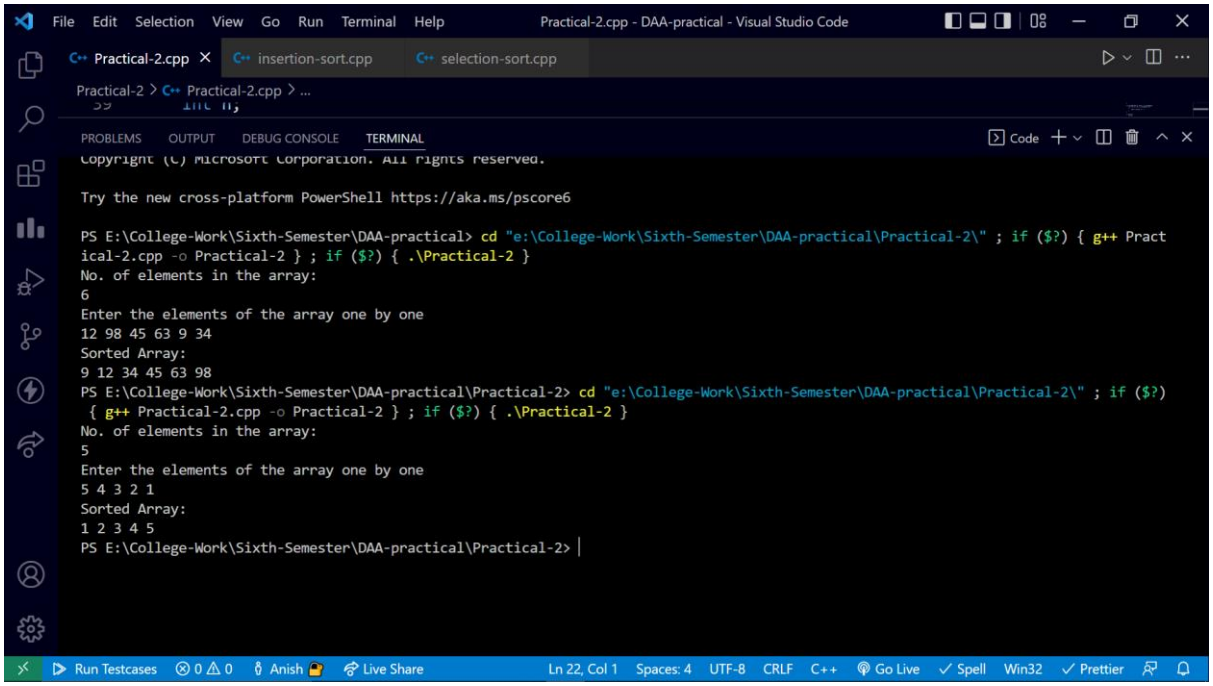
Bubble Sort



```cpp
//  Author: Anish Tilloo
//  Roll No. : 34
//  Program: Bubble Sort

#include <bits/stdc++.h>
using namespace std;

// Bubble Sort Algorithm
void bubbleSort(int n, int arr[]){
    for (int i = 0; i < n; i++)
    {
        for (int  j = 0; j < n - 1; j++)
        {
            if (arr[j] > arr[j + 1])
            {
                // swaping if the number is greater than the next one
                swap(arr[j], arr[j + 1]);
            }
        }
    }
}

void inputArray( int arr[], int arraySize){
    cout << "Enter the elements of the array one by one " << endl;
    for (int i = 0; i < arraySize; i++)
    {
        cin >> arr[i];
    }
```



```cpp
void inputArray( int arr[], int arraySize){
    cout << "Enter the elements of the array one by one " << endl;
    for (int i = 0; i < arraySize; i++)
    {
        cin >> arr[i];
    }
}

void printArray(int arr[], int arraySize){
    for (int i = 0; i < arraySize; i++)
    {
        cout << arr[i] << " ";
    }
}

int main(){
    int n;
    cout << "No. of elements in the array: " << endl;
    cin >> n;
    int arr[n];
    inputArray(arr, n);
    bubbleSort(n, arr);
    cout << "Sorted Array: " << endl;
    printArray(arr, n);
    return 0;
}
```


File Edit Selection View Go Run Terminal Help
Practical-2.cpp - DAA-practical - Visual Studio Code
Practical-2.cpp
insertion-sort.cpp
selection-sort.cpp
Practical-2 > Practical-2.cpp > ...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Code
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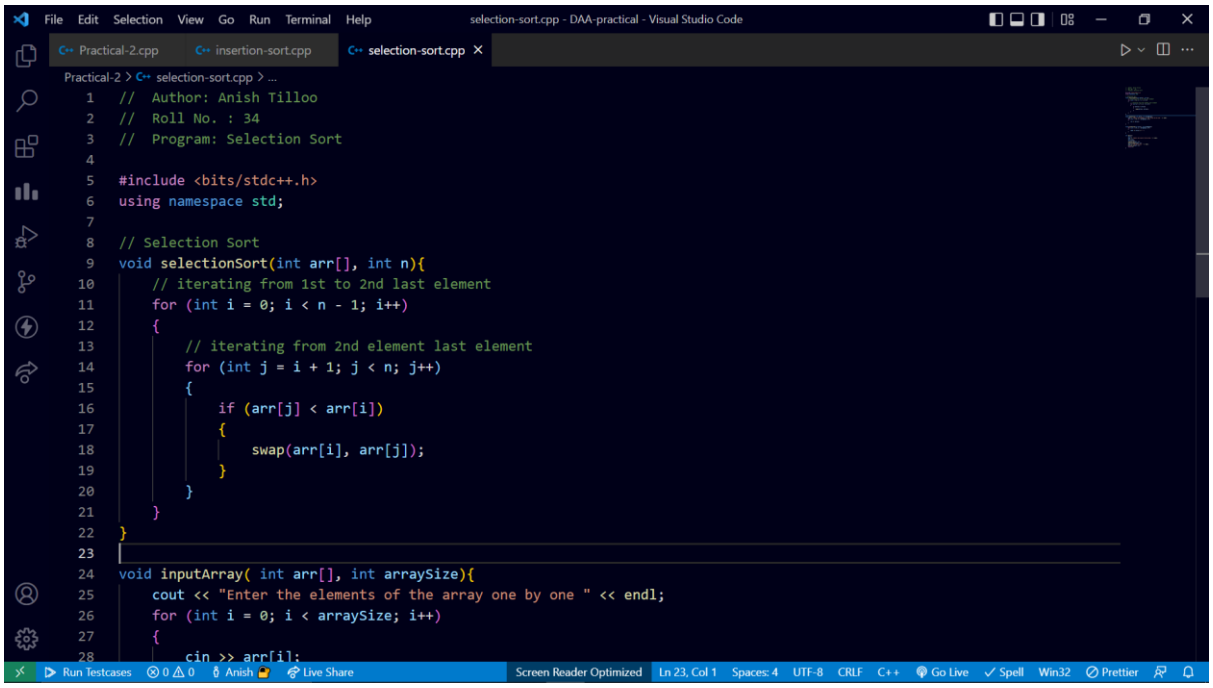
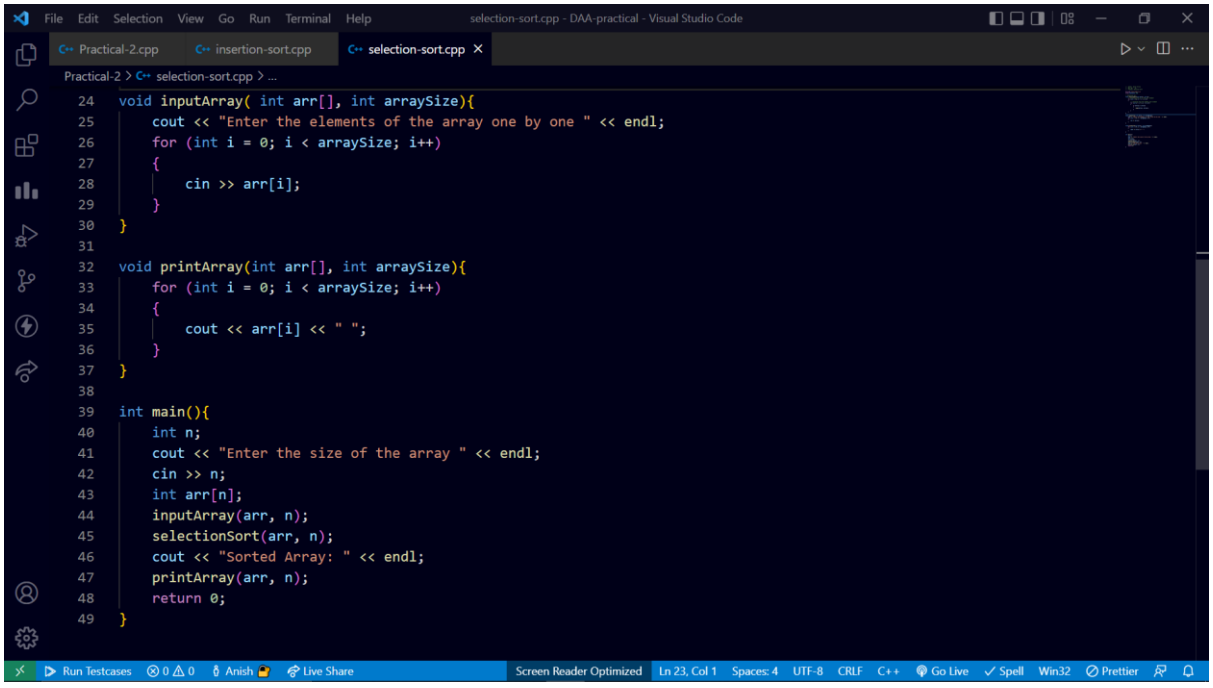
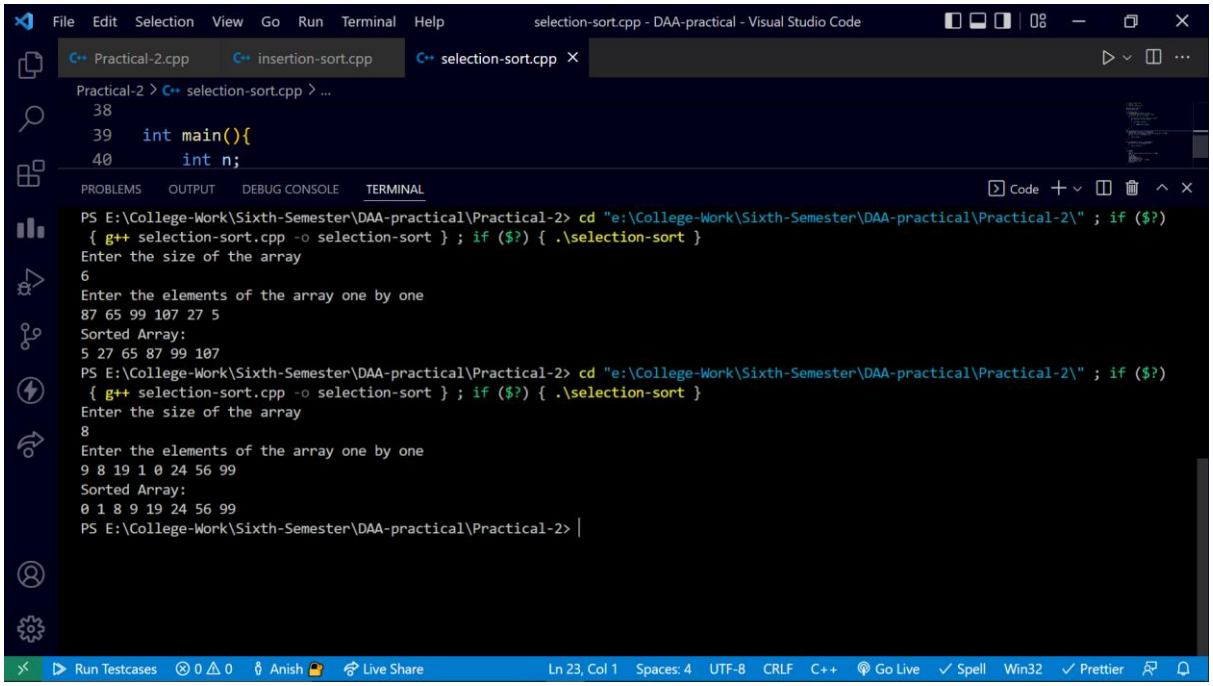
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS E:\College-Work\Sixth-Semester\DAA-practical> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-2\" ; if ($?) { g++ Practical-2.cpp -o Practical-2 } ; if ($?) { .\Practical-2 }
No. of elements in the array:
6
Enter the elements of the array one by one
12 98 45 63 9 34
Sorted Array:
9 12 34 45 63 98
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-2\" ; if ($?) { g++ Practical-2.cpp -o Practical-2 } ; if ($?) { .\Practical-2 }
No. of elements in the array:
5
Enter the elements of the array one by one
5 4 3 2 1
Sorted Array:
1 2 3 4 5
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2>
Run Testcases
0 0
Anish
Live Share
Ln 22, Col 1
Spaces: 4
UTF-8
CRLF
C++
Go Live
Spell
Win32
Prettier

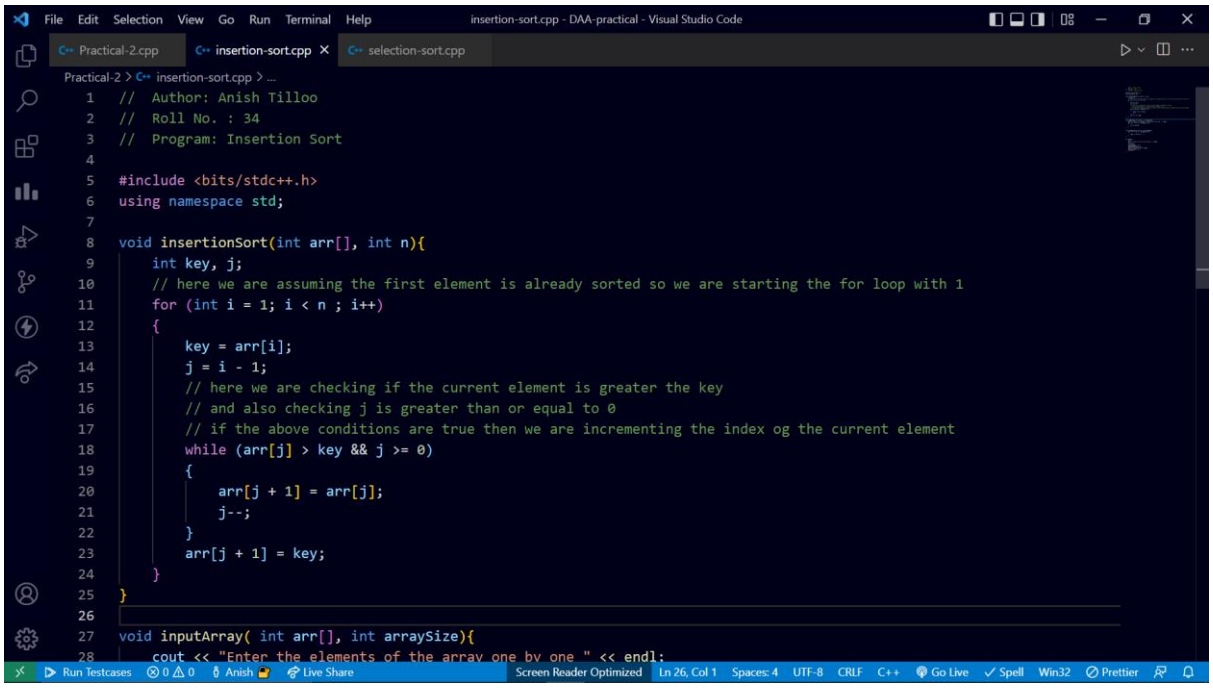
Selection Sort






File Edit Selection View Go Run Terminal Help
selection-sort.cpp - DAA-practical - Visual Studio Code
Practical-2.cpp
insertion-sort.cpp
selection-sort.cpp
Practical-2 > selection-sort.cpp > ...
38
39 int main(){
40 int n;
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Code
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-2\" ; if ($?) { g++ selection-sort.cpp -o selection-sort } ; if ($?) { .\selection-sort }
Enter the size of the array
6
Enter the elements of the array one by one
87 65 99 107 27 5
Sorted Array:
5 27 65 87 99 107
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-2\" ; if ($?) { g++ selection-sort.cpp -o selection-sort } ; if ($?) { .\selection-sort }
Enter the size of the array
8
Enter the elements of the array one by one
9 8 19 1 0 24 56 99
Sorted Array:
0 1 8 9 19 24 56 99
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2>
Run Testcases
0 0
Anish
Live Share
Ln 23, Col 1
Spaces: 4
UTF-8
CRLF
C++
Go Live
Spell
Win32
Prettier

Insertion Sort

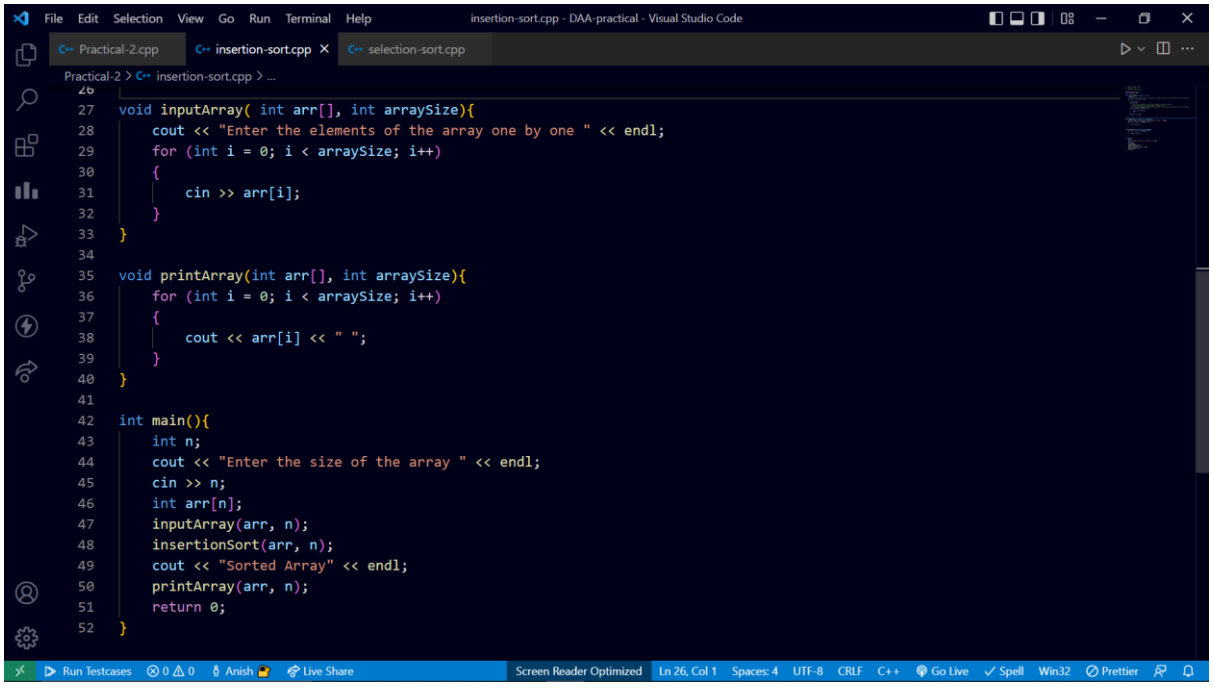


```cpp
//  Author: Anish Tilloo
//  Roll No. : 34
//  Program: Insertion Sort

#include <bits/stdc++.h>
using namespace std;

void insertionSort(int arr[], int n){
    int key, j;
    // here we are assuming the first element is already sorted so we are starting the for loop with 1
    for (int i = 1; i < n ; i++)
    {
        key = arr[i];
        j = i - 1;
        // here we are checking if the current element is greater the key
        // and also checking j is greater than or equal to 0
        // if the above conditions are true then we are incrementing the index og the current element
        while (arr[j] > key && j >= 0)
        {
            arr[j + 1] = arr[j];
            j--;
        }
        arr[j + 1] = key;
    }
}

void inputArray( int arr[], int arraySize){
    cout << "Enter the elements of the array one by one " << endl;
```



```cpp
void inputArray( int arr[], int arraySize){
    cout << "Enter the elements of the array one by one " << endl;
    for (int i = 0; i < arraySize; i++)
    {
        cin >> arr[i];
    }
}

void printArray(int arr[], int arraySize){
    for (int i = 0; i < arraySize; i++)
    {
        cout << arr[i] << " ";
    }
}

int main(){
    int n;
    cout << "Enter the size of the array " << endl;
    cin >> n;
    int arr[n];
    inputArray(arr, n);
    insertionSort(arr, n);
    cout << "Sorted Array" << endl;
    printArray(arr, n);
    return 0;
}
```

```
 { g++ insertion-sort.cpp -o insertion-sort } ; if ($?) { .\insertion-sort }\Practical-2> cd "e:\College-Work\Sixth-Semester\DAA-prac
tical\Pr
Enter the size of the array
6
Enter the elements of the array one by one
108 67 1 109 2 9
Sorted Array
1 2 9 67 108 109
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-2\" ; if ($?)
 { g++ insertion-sort.cpp -o insertion-sort } ; if ($?) { .\insertion-sort }
Enter the size of the array
5
Enter the elements of the array one by one
98 76 54 32 100
Sorted Array
32 54 76 98 100
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-2>
```