DAA Assignment No 06

Q) Write a C/C++ program to implement

1)Insertion Sort

2)DFS

3)BFS

1)Insertion Sort:

-- > Program Code:

Go Run Terminal Help insertionSort.cpp - DAA - Visual Studio Code

insertionSort.cpp × bfs.cpp

p6 > insertionSort.cpp > main()

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

void insertionSort(int arr[], int n) {
    for (int i = n - 1; i > 0; i--) {
        int j = i - 1, key = arr[i];
        while (j >= 0 && arr[j] > key) {
            arr[j+1] = arr[j];
            j--;
        }
        arr[j+1] = key;
    }
}

int main() {
    int arr[] = { 10,30,15,5,25,20 };
    int n = sizeof(arr) / sizeof(arr[0]);

    insertionSort(arr, n);

    for (int i = 0; i < n; i++)
        cout << arr[i] << " ";
    cout << endl;

    return 0;
}
```

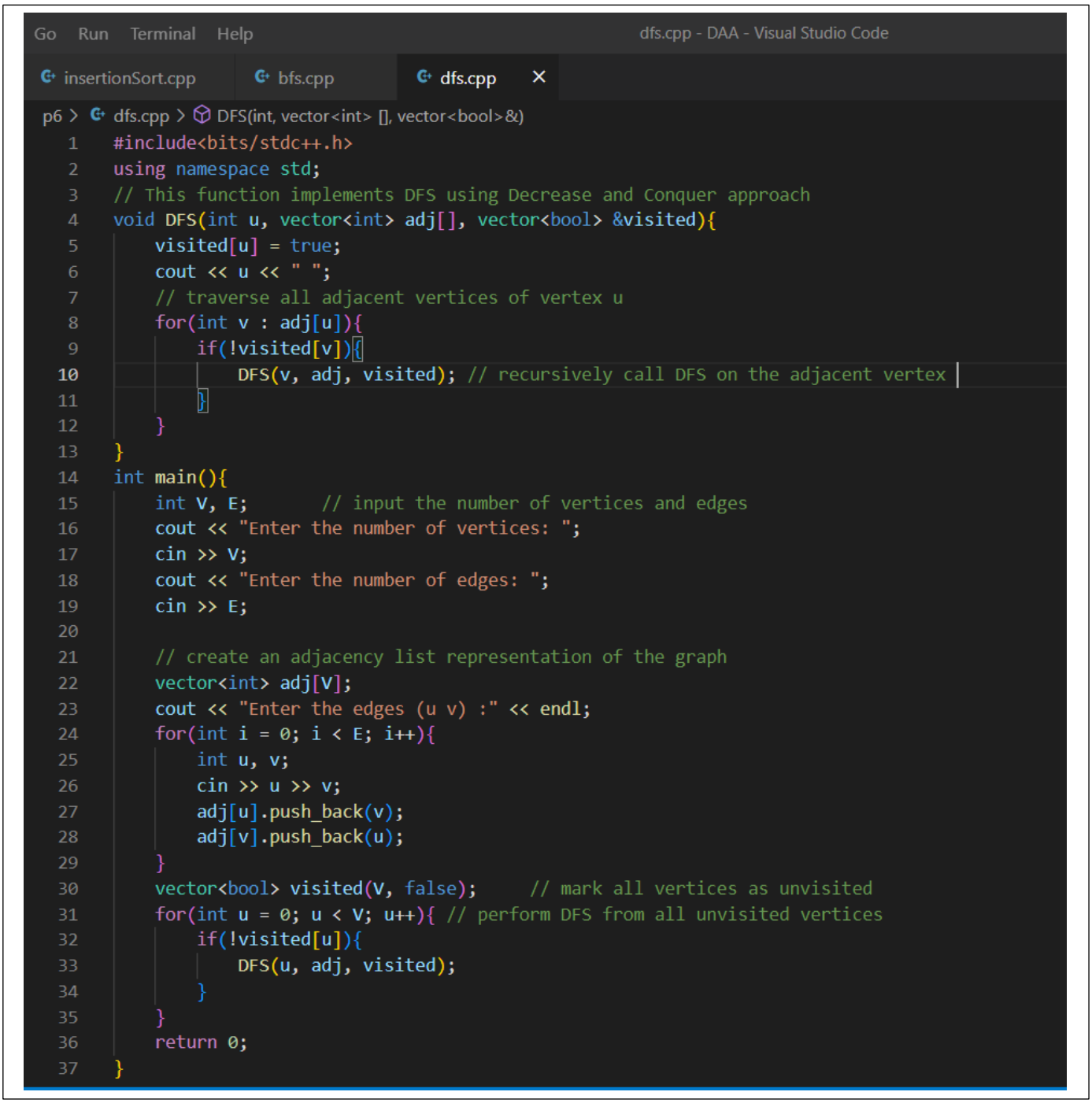
Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\DELL\Desktop\DAA> cd 'c:\Users\DELL\Desktop\DAA\p6\output'
PS C:\Users\DELL\Desktop\DAA\p6\output> & .\'insertionSort.exe'
5 10 30 15 20 25
PS C:\Users\DELL\Desktop\DAA\p6\output>
```

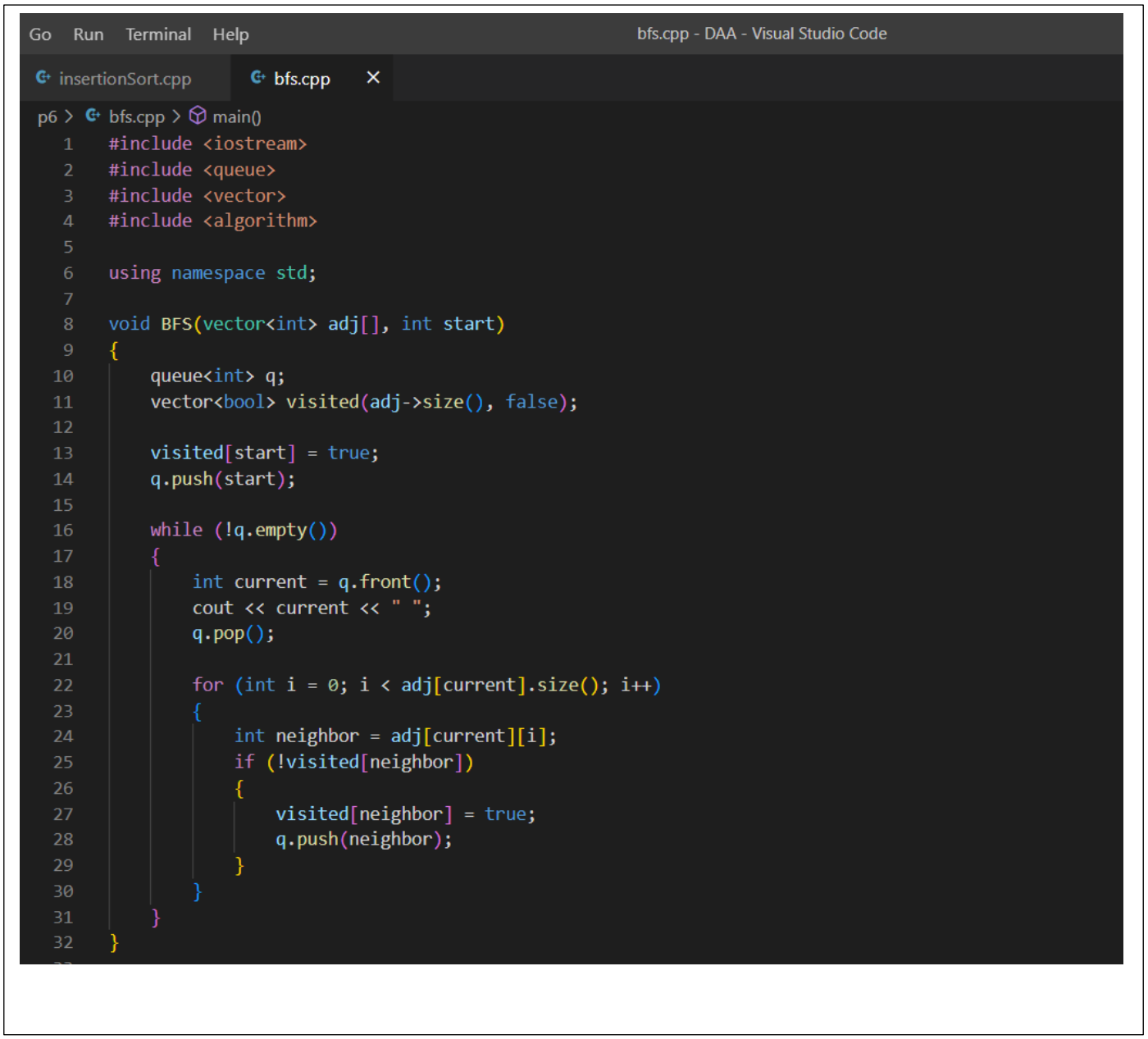
2)DFS

-- > Program Code:



3)BFS

-- > Program Code:



```cpp
int main()
{
    int vertices, edges;
    cout << "Enter the number of vertices: ";
    cin >> vertices;
    cout << "Enter the number of edges: ";
    cin >> edges;

    vector<int> adj[vertices + 1];

    cout << "Enter the edges: " << endl;
    for (int i = 0; i < edges; i++)
    {
        int u, v;
        cin >> u >> v;
        adj[u].push_back(v);
        adj[v].push_back(u);
    }

    cout << "Enter the starting vertex: ";
    int start;
    cin >> start;

    BFS(adj, start);

    return 0;
}
```