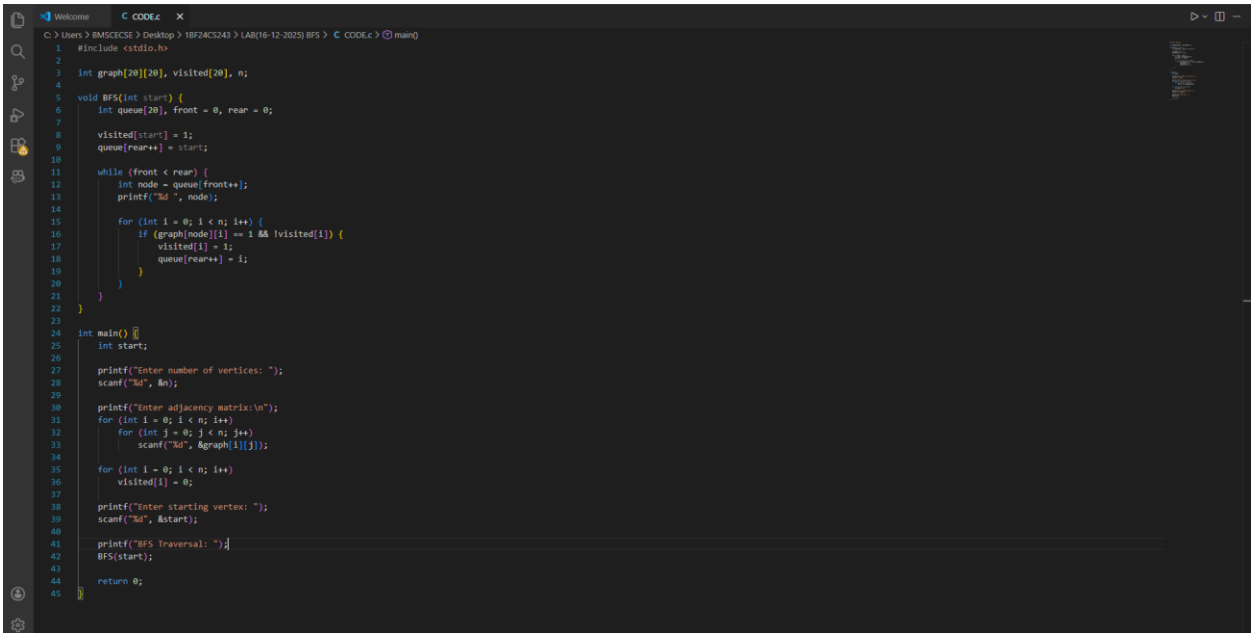
LAB(16-12-2025)

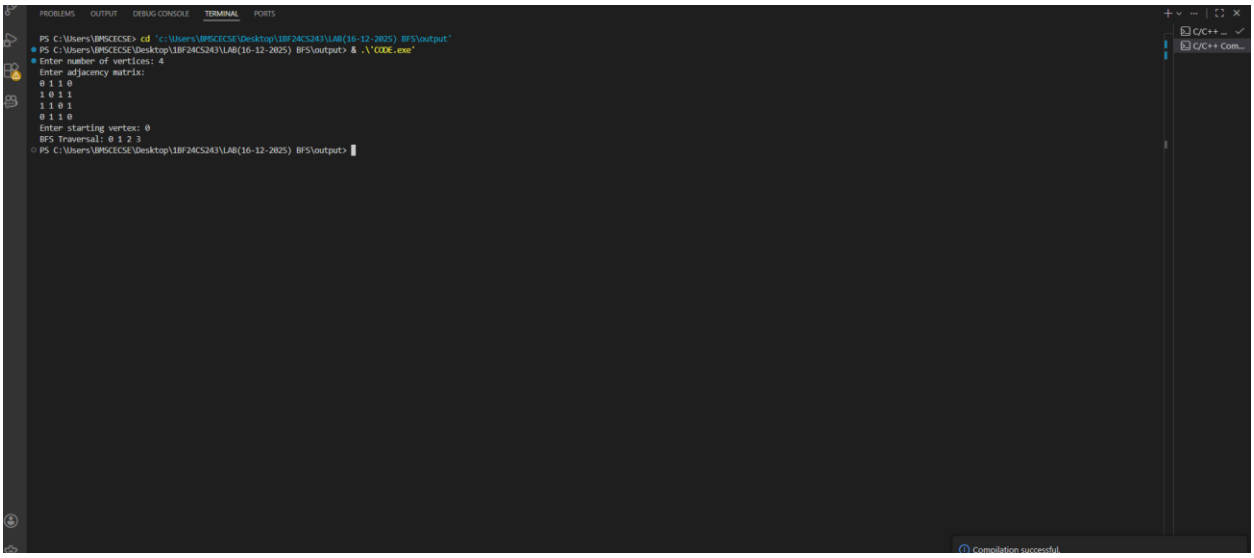
BFS

INPUT



```c
#include <stdio.h>

int graph[20][20], visited[20], n;

void BFS(int start) {
    int queue[20], front = 0, rear = 0;

    visited[start] = 1;
    queue[rear++] = start;

    while (front < rear) {
        int node = queue[front++];
        printf("%d ", node);

        for (int i = 0; i < n; i++) {
            if (graph[node][i] == 1 && !visited[i]) {
                visited[i] = 1;
                queue[rear++] = i;
            }
        }
    }
}

int main() {
    int start;

    printf("Enter number of vertices: ");
    scanf("%d", &n);

    printf("Enter adjacency matrix:\n");
    for (int i = 0; i < n; i++)
        for (int j = 0; j < n; j++)
            scanf("%d", &graph[i][j]);

    for (int i = 0; i < n; i++)
        visited[i] = 0;

    printf("Enter starting vertex: ");
    scanf("%d", &start);

    printf("BFS Traversal: ");
    BFS(start);

    return 0;
}
```

OUTPUT



```
PS C:\Users\BMSCECSE> cd 'c:\Users\BMSCECSE\Desktop\1BF24CS243\LAB(16-12-2025) BFS\output'
PS C:\Users\BMSCECSE\Desktop\1BF24CS243\LAB(16-12-2025) BFS\output> & .\'CODE.exe'
Enter number of vertices: 4
Enter adjacency matrix:
0 1 1 0
1 0 1 1
1 1 0 1
0 1 1 0
Enter starting vertex: 0
BFS Traversal: 0 1 2 3
PS C:\Users\BMSCECSE\Desktop\1BF24CS243\LAB(16-12-2025) BFS\output>
```