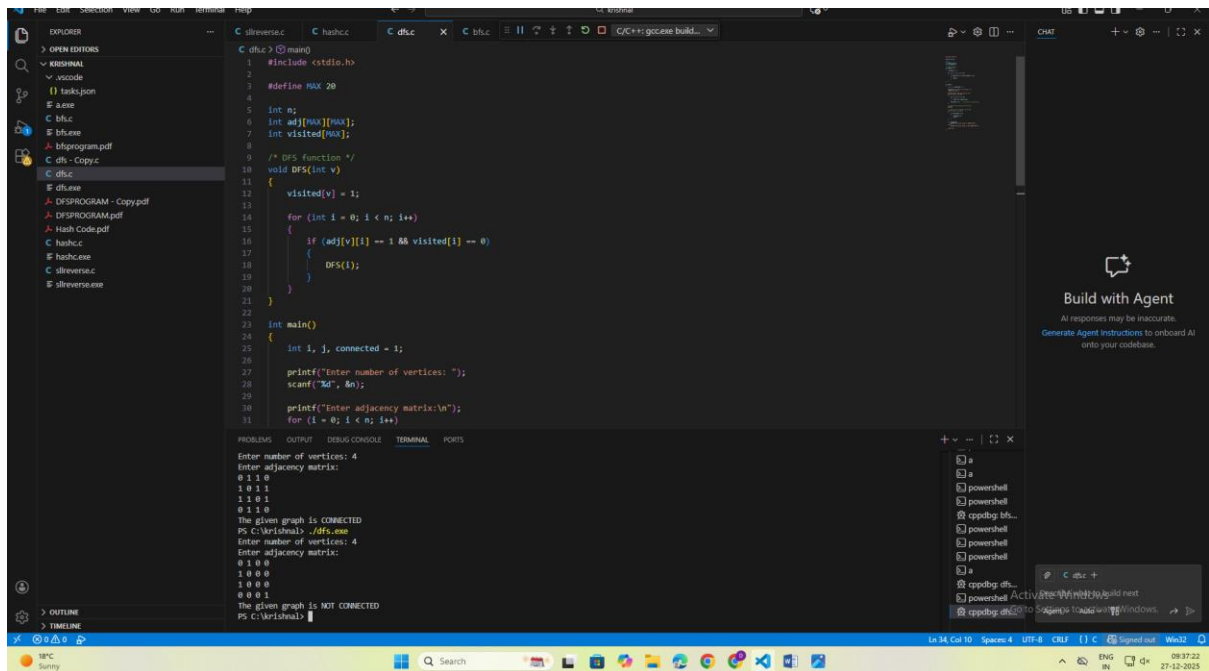


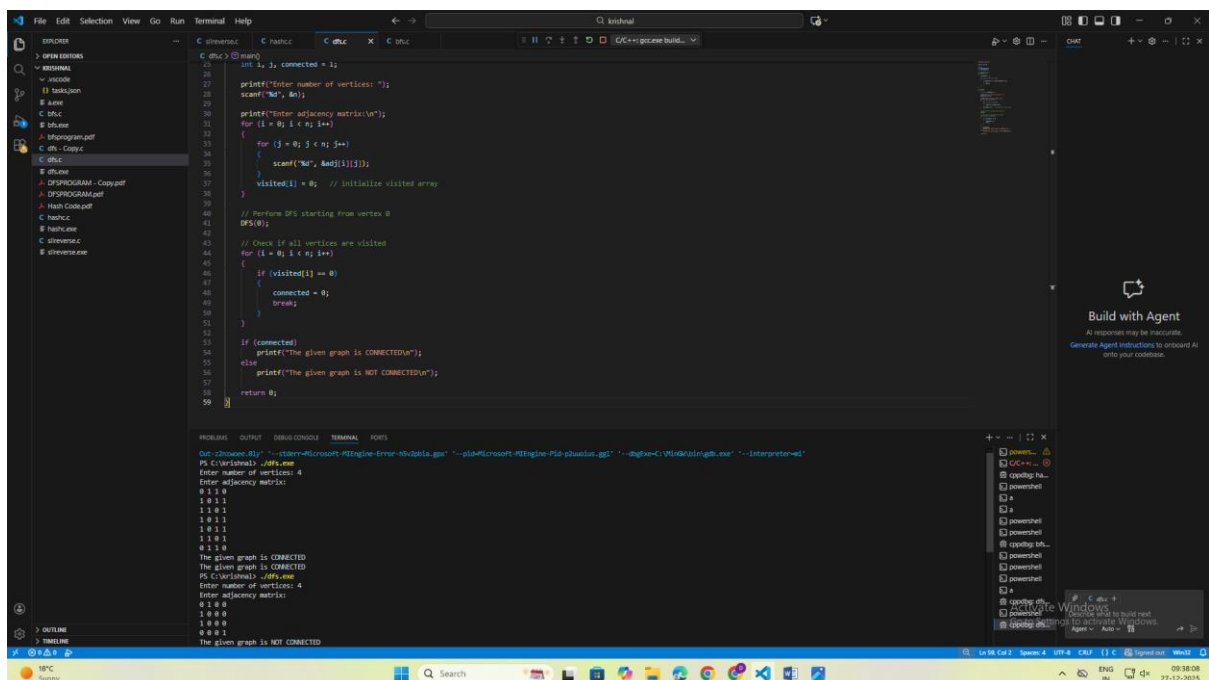
## 9(b) DFS program



```
1 #include <stdio.h>
2
3 #define MAX 20
4
5 int n;
6 int adj[MAX][MAX];
7 int visited[MAX];
8
9 /* DFS function */
10 void DFS(int v)
11 {
12     visited[v] = 1;
13     for (int i = 0; i < n; i++)
14     {
15         if (adj[v][i] == 1 && visited[i] == 0)
16         {
17             DFS(i);
18         }
19     }
20 }
21
22 int main()
23 {
24     int i, j, connected = 1;
25
26     printf("Enter number of vertices: ");
27     scanf("%d", &n);
28
29     printf("Enter adjacency matrix:\n");
30     for (i = 0; i < n; i++)
31     {
32         for (j = 0; j < n; j++)
33         {
34             scanf("%d", &adj[i][j]);
35         }
36         visited[i] = 0; // Initialize visited array
37     }
38
39     // Perform DFS starting from vertex 0
40     DFS(0);
41
42     // Check if all vertices are visited
43     for (i = 0; i < n; i++)
44     {
45         if (visited[i] == 0)
46         {
47             connected = 0;
48             break;
49         }
50     }
51
52     if (connected)
53         printf("The given graph is CONNECTED\n");
54     else
55         printf("The given graph is NOT CONNECTED\n");
56
57     return 0;
58 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Enter number of vertices: 4  
Enter adjacency matrix:  
0 1 1 0  
1 0 1 1  
1 0 1 1  
0 1 1 0  
The given graph is CONNECTED  
PS C:\Visual\1> .\dfs.exe  
Enter number of vertices: 4  
Enter adjacency matrix:  
0 1 0 0  
1 0 0 0  
0 0 0 1  
0 0 0 1  
The given graph is NOT CONNECTED  
PS C:\Visual\1>



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2
3 #define MAX 20
4
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6 int adj[MAX][MAX];
7 int visited[MAX];
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