

```

#include <stdio.h>
#include <stdbool.h>

#define MAX_VERTICES 100

struct Graph {
    int V;
    int adjMatrix[MAX_VERTICES][MAX_VERTICES];
};

void initGraph(struct Graph *G, int V) {
    G->V = V;
    for (int i = 0; i < V; i++) {
        for (int j = 0; j < V; j++) {
            G->adjMatrix[i][j] = 0;
        }
    }
}

void addEdge(struct Graph *G, int src, int dest) {
    G->adjMatrix[src][dest] = 1;
    G->adjMatrix[dest][src] = 1; // If the graph is undirected
}

void DFS(struct Graph *G, int v, bool visited[]) {
    visited[v] = true;
    for (int i = 0; i < G->V; i++) {
        if (G->adjMatrix[v][i] && !visited[i]) {
            DFS(G, i, visited);
        }
    }
}

bool isConnected(struct Graph *G) {
    bool visited[MAX_VERTICES] = {false};
    DFS(G, 0, visited); // Start DFS from vertex 0
    for (int i = 0; i < G->V; i++) {
        if (!visited[i]) {
            return false; // If any vertex is not reachable, return false
        }
    }
    return true;
}

int main() {
    struct Graph G;
    int V = 5; // Number of vertices
    initGraph(&G, V);

```

```
addEdge(&G, 0, 1);  
addEdge(&G, 0, 2);  
addEdge(&G, 1, 2);  
addEdge(&G, 3, 4);
```

```
if (isConnected(&G)) {  
    printf("The graph is connected.\n");  
} else {  
    printf("The graph is not connected.\n");  
}
```

```
return 0;
```

```
}The graph is not connected.
```