

Q.2: write a C program to Graph traversal using depth first search.

Aim: To write a C program to Graph traversal using depth first search.

Algorithm:

- * start.
- * Input number of vertices and edges.
- * create adjacency matrix.
- * use recursion to implement DFS.
- * Mark visited nodes and print traversal.
- * stop.

program:

```
#include <stdio.h>

int g[5][5] = {
    {0, 1, 1, 0, 0},
    {1, 0, 0, 1, 1},
    {1, 0, 0, 1, 0},
    {0, 1, 1, 0, 1},
    {0, 1, 0, 1, 0}
};

int vis[5] = {0};

void dfs(int u) {
    vis[u] = 1;
    printf("%d ", u);
    for (int v = 0; v < 5; v++)
        if (g[u][v] && !vis[v])
            dfs(v);
}

int main() {
    printf("DFS : ");
    dfs(0);
}
```

output: Dfs: 0 1 3 4 2

result: thus, the program executed successfully.