

LAB PROGRAM 9a

Write a program to traverse a graph using BFS method.

```
#include <stdio.h>

int n;
int adj[10][10];
int visited[10];
int queue[10];
int front = 0, rear = -1;

void bfs(int start) {
    int i;
    queue[++rear] = start;
    visited[start] = 1;

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

        for (i = 0; i < n; i++) {
            if (adj[start][i] == 1 && visited[i] == 0) {
                queue[++rear] = i;
                visited[i] = 1;
            }
        }
    }
}
```

```
int main() {
    int i, j, start;

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

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

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

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

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

    return 0;
}
```

OUTPUT:

```
C:\Users\nandi\CLionProjects\untitled5\cmake-build-debug\untitled5.exe
Enter number of vertices:3

Enter adjacency matrix:
1 1 0

1 0 0

0 0 1

Enter starting vertex:0

BFS Traversal: 0 1
Process finished with exit code 0
```