31.

```
#include <stdio.h>
int queue[100], front = -1, rear = -1;
void enqueue(int value) {
    if (rear == 99) return;
    if (front == -1) front = 0;
    queue[++rear] = value;
}
int dequeue() {
    if (front == -1 || front > rear) return -1;
    return queue[front++];
}
void bfs(int adj[10][10], int n, int start) {
    int visited[10] = {0}, v;
    enqueue(start);
    visited[start] = 1;
    while ((v = dequeue()) != -1) {
        printf("%d ", v);
        for (int i = 0; i < n; i++) {
            if (adj[v][i] && !visited[i]) {
                enqueue(i);
                visited[i] = 1;
            }
        }
    }
}
int main() {
    int adj[10][10], n;
    printf("Enter number of vertices: ");
```

```
Enter number of vertices: 4
Enter adjacency matrix:
1 2 3 4
5 6 7 8
9 8 7 4
6 5 4 8
BFS traversal: 0 1 2 3
```

```
    scanf("%d", &n);
    printf("Enter adjacency matrix:\n");
    for (int i = 0; i < n; i++)
        for (int j = 0; j < n; j++)
            scanf("%d", &adj[i][j]);
    printf("BFS traversal: ");
    bfs(adj, n, 0);
    return 0;
}
```