```
/******************************************************************************

                              Online C Compiler.
                Code, Compile, Run and Debug C program online.
Write your code in this editor and press "Run" button to compile

*******************************************************************************/
#include<stdio.h>
#define size 20
#define true 1
#define false 0

int queue[size],visit[20],rear=-1,front=0;
int n,s,adj[20][20],flag=0;
void insertq(int v){
    queue[++rear]=v;
}

int deleteq(){
    return(queue[front++]);
}
int qempty(){
  if(rear<front){
    return 1;
}
  else{
    return 0;
    }
}

void bfs(int v){
    int w;
    visit[v]=1;
    insertq(v);
    while(!qempty()){
        v=deleteq();
        for(w=1;w<=n;w++){
            if((adj[v][w]==1) && (visit[w]==0)){
```

```c
void bfs(int v){
    int w;
    visit[v]=1;
    insertq(v);
    while(!qempty()){
        v=deleteq();
        for(w=1;w<=n;w++){
            if((adj[v][w]==1) && (visit[w]==0)){
                visit[w]=1;
                flag=1;
                printf("v%d\t",w);
                insertq(w);
            }
        }
    }
}

int main(){
    int v,w;
    printf("Enter the no.of vertices:\n");
    scanf("%d",&n);
    printf("Enter adjacency matrix:\n");
    for(v=1;v<=n;v++){
      for(w=1;w<=n;w++)
        scanf("%d",&adj[v][w]);
    }
    printf("Enter the start vertex:");
    scanf("%d",&s);
    printf("Reachability of vertex %d\n",s);
    for(v=1;v<=n;v++){
            visit[v]=0;
    }
    bfs(s);
    if(flag==0){
      printf("No path found!!\n");
    }
    return 0;
}
```

input

```
Enter the no.of vertices:
4
Enter adjacency matrix:
1 1 1 0
1 0 1 1
0 1 1 1
1 1 1 1
Enter the start vertex:4
Reachability of vertex 4
v1      v2      v3

...Program finished with exit code 0
Press ENTER to exit console.
```