

// 21. Write a C program to Graph traversal using Breadth First Search

```
#include<stdio.h>
```

```
#include<conio.h>
```

```
int a[20][20],q[20],visited[20],n,i,j,f=0,r=-1;
```

```
void bfs(int v) {
```

```
    for (i=1;i<=n;i++)
```

```
        if(a[v][i] && !visited[i])
```

```
            q[++r]=i;
```

```
    if(f<=r) {
```

```
        visited[q[f]]=1;
```

```
        bfs(q[f++]);
```

```
    }
```

```
}
```

```
int main() {
```

```
    int v;
```

```
    printf("\n Enter the number of vertices:");
```

```
    scanf("%d",&n);
```

```
    for (i=1;i<=n;i++) {
```

```
        q[i]=0;
```

```
        visited[i]=0;
```

```
    }
```

```
    printf("\n Enter graph data in matrix form:\n");
```

```
    for (i=1;i<=n;i++)
```

```
        for (j=1;j<=n;j++)
```

```
            scanf("%d",&a[i][j]);
```

```
    printf("\n Enter the starting vertex:");
```

```
    scanf("%d",&v);
```

```
    bfs(v);
```

```
    printf("\n The node which are reachable are:\n");
```

```
    for (i=1;i<=n;i++)
```

```
        if(visited[i])
```

```
            printf("%d\t",i); else
```

```
            printf("\n Bfs is not possible");
```

```
    getch();
```

```
}
```

