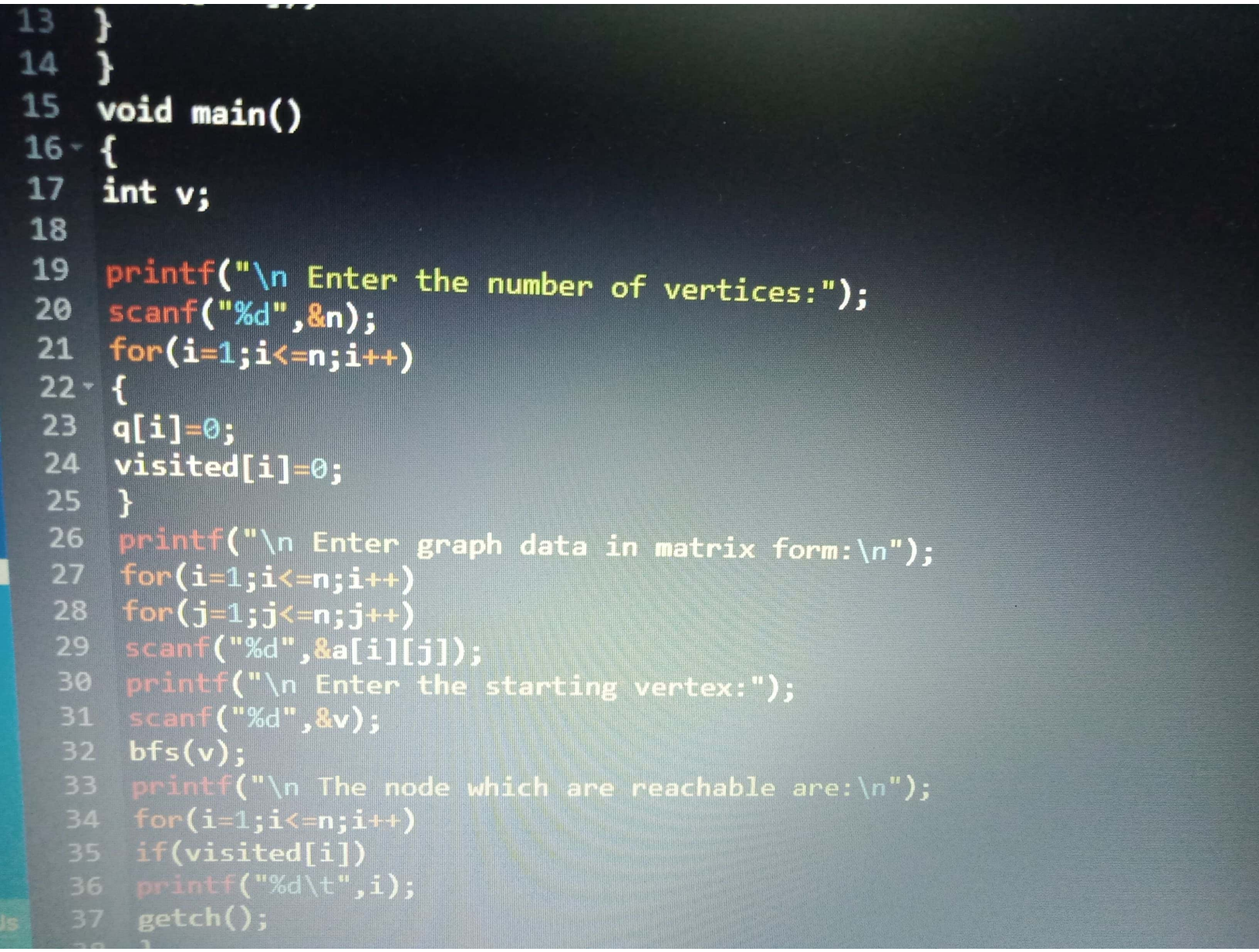
```c
#include<stdio.h>
#include<conio.h>
int a[20][20],q[20],visited[20],n,i,j,f=0,r=-1;
void bfs(int v)
{
for(i=1;i<=n;i++)
if(a[v][i] && !visited[i])
q[++r]=i;
if(f<=r)
{
visited[q[f]]=1;
bfs(q[f++]);
}
}
void main()
{
int v;

printf("\n Enter the number of vertices:");
scanf("%d",&n);
for(i=1;i<=n;i++)
{
q[i]=0;
visited[i]=0;
}
```



```
13  }
14  }
15  void main()
16  {
17  int v;
18
19  printf("\n Enter the number of vertices:");
20  scanf("%d",&n);
21  for(i=1;i<=n;i++)
22  {
23  q[i]=0;
24  visited[i]=0;
25  }
26  printf("\n Enter graph data in matrix form:\n");
27  for(i=1;i<=n;i++)
28  for(j=1;j<=n;j++)
29  scanf("%d",&a[i][j]);
30  printf("\n Enter the starting vertex:");
31  scanf("%d",&v);
32  bfs(v);
33  printf("\n The node which are reachable are:\n");
34  for(i=1;i<=n;i++)
35  if(visited[i])
36  printf("%d\t",i);
37  getch();
```

```
Enter the number of vertices:5

Enter graph data in matrix form:
0 1 0 1 0
0 0 1 1 0
0 0 0 0 0
0 0 1 0 1
0 0 0 0 0

Enter the starting vertex:1

The node which are reachable are:
2       3       4       5

...Program finished with exit code 255
Press ENTER to exit console.
```

* Print all the nodes reachable from a given starting node in a digraph using BFS method.

```
#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++]);
}
}
void main()
{
int v;
printf("\nEnter the no.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 ");
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);
getch();
}
```