|  |  |
| --- | --- |
|  | #include<stdio.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; |
|  | } |
|  |  |
|  | 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. Not all nodes are reachable"); |
|  | break; |
|  | } |
|  | } |
|  | } |