#include <stdio.h>

int n, i, j, visited[10], queue[10], front = -1, rear = -1;

int adj[10][10];

void bfs(int v)

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

if (adj[v][i] && !visited[i])

queue[++rear] = i;

if (front <= rear)

{ visited[queue[front]] = 1;

bfs(queue[front++]);

}

}

void main()

{ int v;

printf("Enter the number of vertices: ");

scanf("%d", &n);

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

{ queue[i] = 0;

visited[i] = 0; }

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

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

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

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

printf("Enter the starting vertex: ");

scanf("%d", &v);

bfs(v);

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

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

if (visited[i])

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

else

printf("BFS is not possible. Not all nodes are reachable");

return 0;

}