

```

1  #include <bits/stdc++.h>
2  using namespace std;
3  #define ll long long
4  #define inf (int)1e9
5
6  Find circle in graph (Undirected):
7  vector<int> visited(100100) , parent(100100) , adj[100100];
8  int startCircle = 0 , endCircle = 0;
9
10 bool findCircle(int u , int par){ // node and parent
11     visited[u] = true;
12     for(auto v : adj[u]){
13         if(v==par) continue;
14         if(visited[v]){
15             endCircle = u;
16             startCircle = v;
17             return true;
18         }
19         parent[v] = u;
20         if(findCircle(v , parent[v])) return true;
21     }
22     return false;
23 }
24
25 void printCircle(int node = endCircle){
26     if(node==startCircle){
27         cout<<node<<" ";
28         return ;
29     }
30     printCircle(parent[node]);
31     cout<<node<<" ";
32 }
33
34 Find circle in graph (directed):
35 vector<int> visited1(100100) , visited2(100100) , parent(100100) , adj[100100];
36 int startCircle = 0 , endCircle = 0;
37
38 bool findCircle(int u){
39     visited1[u] = true;
40     visited2[u] = true;
41     for(auto v : adj[u]){
42         if(visited2[v]){
43             endCircle = u;
44             startCircle = v;
45             return true;
46         }
47         parent[v] = u;
48         if(!visited1[v] && findCircle(v)) return true;
49     }
50     visited2[u] = false;
51     return false;
52 }
53
54 void printCircle(int node = endCircle){
55     if(node==startCircle){
56         cout<<node<<" ";
57         return ;
58     }
59     printCircle(parent[node]);
60     cout<<node<<" ";
61 }

```