

```
1 DFS(G) :
2   Input: Graph, G
3   Output: A labeling of the edges on
4           G as discovery and back edges
5
6   foreach (Vertex v : G.vertices()):
7     setLabel(v, UNEXPLORED)
8   foreach (Edge e : G.edges()):
9     setLabel(e, UNEXPLORED)
10  foreach (Vertex v : G.vertices()):
11    if getLabel(v) == UNEXPLORED:
12      DFS(G, v)
```

```
14 DFS(G, v) :
15    Queue q
16   setLabel(v, VISITED)
17    q.enqueue(v)
18
19    while !q.empty():
20      v = q.dequeue()
21   foreach (Vertex w : G.adjacent(v)):
22     if getLabel(w) == UNEXPLORED:
23       setLabel(v, w, DISCOVERY)
24       setLabel(w, VISITED)
25       DFS(G, w)
26     elseif getLabel(v, w) == UNEXPLORED:
27       setLabel(v, w, BACK)
```