

BFS(G, s)

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1  for each vertex  $u \in G.V - \{s\}$ 
2       $u.color = \text{WHITE}$ 
3       $u.d = \infty$ 
4       $u.\pi = \text{NIL}$ 
5   $s.color = \text{GRAY}$ 
6   $s.d = 0$ 
7   $s.\pi = \text{NIL}$ 
8   $Q = \emptyset$ 
9  ENQUEUE( $Q, s$ )
10 while  $Q \neq \emptyset$ 
11      $u = \text{DEQUEUE}(Q)$ 
12     for each vertex  $v$  in  $G.Adj[u]$  // search the neighbors of  $u$ 
13         if  $v.color == \text{WHITE}$  // is  $v$  being discovered now?
14              $v.color = \text{GRAY}$ 
15              $v.d = u.d + 1$ 
16              $v.\pi = u$ 
17             ENQUEUE( $Q, v$ ) //  $v$  is now on the frontier
18      $u.color = \text{BLACK}$  //  $u$  is now behind the frontier
```