Breadth-First Search (BFS)

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Below is a version of a BFS algorithm.

```
Algorithm 1: The breadth-first search algorithm BFS (s, Adj)

1 begin
2    level = {s : 0};
3    parent = {s : None};
4    i = 1;
5    frontier = [s];
6 while frontier do
7        next = [ ];
8        for u in frontier do
9            for v in Adj[u] do
10               if v not in level then
11                  level[v] = i;
12                  parent[v] = u;
13                  next.append(v)
14             end
15        end
16        frontier = next;
17        i+ = 1;
18    end
19 end
```