

Breadth-first search in Ligra

```
parents = {-1, ..., -1};           // -1 indicates "unvisited"
```

```
procedure UPDATE(s, d):  
    return compare_and_swap(parents[d], -1, s);
```

```
procedure COND(i):  
    return parents[i] == -1;       // checks if "unvisited"
```

```
procedure BFS(G, r):  
    parents[r] = r;  
    frontier = {r};  
    while (size(frontier) > 0):  
        frontier = EDGEMAP(G, frontier, UPDATE, COND);
```

