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## Algorithms, Shortest Path with BFS - Sunday, February 21, 2021

1. Modify the BFS graph algorithm so that it computes the shortest path from the start vertex to all other vertices.

```
FUNCTION BFS(G, start_vertex)
found = {v: FALSE FOR v in G.vertices}
found[start_vertex] = TRUE
visit_queue = [start_vertex]
WHILE visit_queue.length != 0
vFound = visit_queue.pop()
FOR vOther IN G.edges[vFound]
IF found[vOther] == FALSE
found[vOther] = TRUE
visit_queue.add(vOther)
```

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2. How would you use our BFS procedure (not the shortest path procedure) to find groups of connected components?