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)

   **RETURN** found

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