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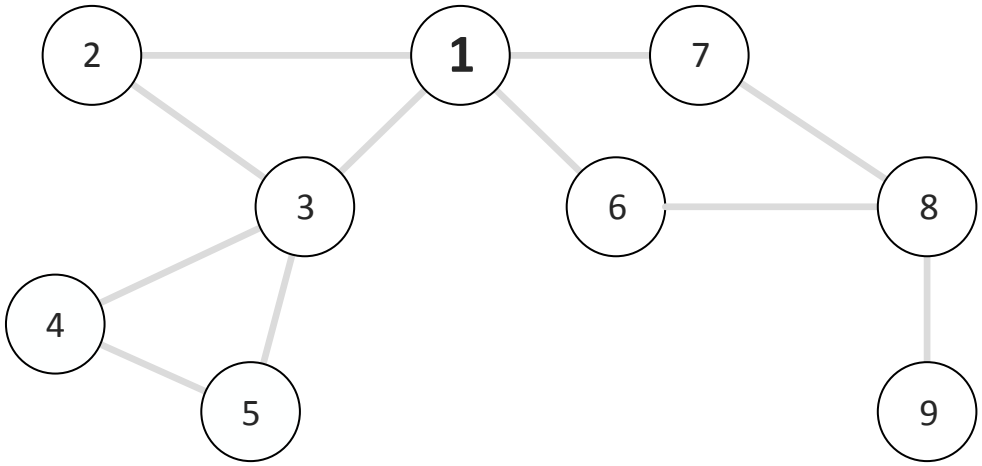
TK1: Distributed Systems - Programming & Algorithms

7. Theory Assignment
Submission Date: 20.01.2016

Task 1: Local View (4 Points)

Draw (based on the graph given below) for node 1 the 2-hop neighborhood graph $G_2(1)$.



Task 2: LOCAL Model (4 Points)

In the lecture, two arguments were introduced that can be used to show that a certain problem cannot be solved in the LOCAL model. Name these two arguments. Also, for each of the arguments, give an example of a problem that cannot be solved because of the argument.

Task 3: Topology Control (2 Points)

Name one of the Topology Control algorithms introduced in the lecture. Which property that is particularly important for Greedy Perimeter Stateless Routing does this algorithm have?