CptS/EE 455
Homework #3
Assigned: Wed. Mar. 15
Due: Mon. Apr 1st in class

The logistics for this homework are the same as for Homework #1 and 2:

This is a group homework. Each member of the group is responsible for providing the "**first solution**" to *at least* one of the problems. (A "first solution" is a solution created without reference or consultation with other students.) The same student is responsible for editing that solution along with the comments of the other members of the group into the final solution for that problem. Your grade will be based on both the correctness of the final answers (2/3 weight, same grade for everyone in the group) and your individual effort on the first solution and the editing (1/3 weight, individual grade).

You may use the Bridge tools to do your collaboration, or you may work in person. The bridge tools will be helpful if your group is dispersed, or if you'd like to develop a record of the evolution of your answers. Having such a record will be helpful in writing up the final submission, as described below.

For each problem, the final submission consists of:

1. The name(s) of the student(s) responsible for the first solutions of this problem and for editing the final solution for this problem.
2. The unedited "first solutions" (there may be more than one if the group is large).
3. A *summary* of the comments on the first solution from the other group members and subsequent discussion, identifying any especially helpful comments.
4. The final, group consensus, solution

Each group will submit one set of answers, packaged as follows: a cover sheet identifying this is as CptS/EE 455 Homework and containing the name of the group and each of the members. The final submission for each of the question. Please start each submission on a separate page. All submissions must be typed (no handwritten work).

Problems:

1. Problem 4.3 (page 370)

2. Problem 4.4 (page 371).

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3. Use the distance vector algorithm to compute the distance vector table for node G in the graph of problem 4.3 (i.e. the 8 node graph on p. 371)

4. Modify the distance vector algorithm given in the book (p.288) so that instead of maintaining a two-dimensional table $D^X(Y,Z)$ it maintains a one dimensional vector of pairs $D^X(Y) = (n,W)$. That is, $D^X(Y)$ is a pair consisting of the length of the shortest path from X to Y and W is the first hop along the path. To make this work we will have to impose the condition that each node periodically sends its full routing table to its neighbors: it is no longer to sufficient to send table entries only when they change.

5. Problem 4.9 (page 372)

6. Problem 4.10 (page 372)

7. Problem 4.20 (page 374)

8. Problem 4.21 (page 374)

9. Suppose a network's address is expressed as 199.237.74.0/23. What is the dotted decimal notation for the netmask for this network? Approximately how many host addresses are available on this network? Is host 199.237.76.250 on this network?

What to Turn-in? (Only typed submissions please!)

- Cover Sheet (CptS/EE 455 Homework 1, Group Name, Group Members)
- For each problem:
  - Name of student(s) responsible for "first solution"
  - Unedited first solution(s)
  - Summary of comments/discussion with other group members
  - Final solution

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