Computer Science 118: Computer Network Fundamentals

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I. Implementation

A. Overview

The basic overview of the project will cover from the beginning at initialization to the end when the message is sent from the first to last router following the respective least cost path. We begin by initializing our distance vectors from the sample file provided and finding all neighbors of each router. The router output files are set up, followed by binding each socket to a specific port. The “starting” router sends its DV to its first neighbor, and from there, each router will be ready to receive a DV. Upon receipt, it will update its own DV, if necessary, and log the change in the routing output text file. Each router will then send its updated DV to all of its direct neighbors. These DVs continue to propagate across the network until the network has reached a stable state in which each router has the following information about all other routers: the name of the router, shortest cost, outgoing port number, and destination port number.

B. Structures

C. Message Structure

D. Routing/Forwarding

II. Challenges