LABORATION 3
DISTANCE VECTOR ROUTING

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Two Parts

1. Theoretical assignment
   - 6 questions

2. Programming task
   - Implement a distance vector routing protocol

Distance Vector Simulation

1. A node initializes its distance table with costs to each of its neighboring nodes
2. A node informs its neighboring routers about its distances (minimum distance to all routers) in route update packets
3. When a node receives a route update packet, it should update its distance table
4. Simulation ends when there are no scheduled route update packets (event list empty)

Distance Table Update

At node A (A is one of nodes 0, 1, 2, or 3):

For each neighboring node X **do**

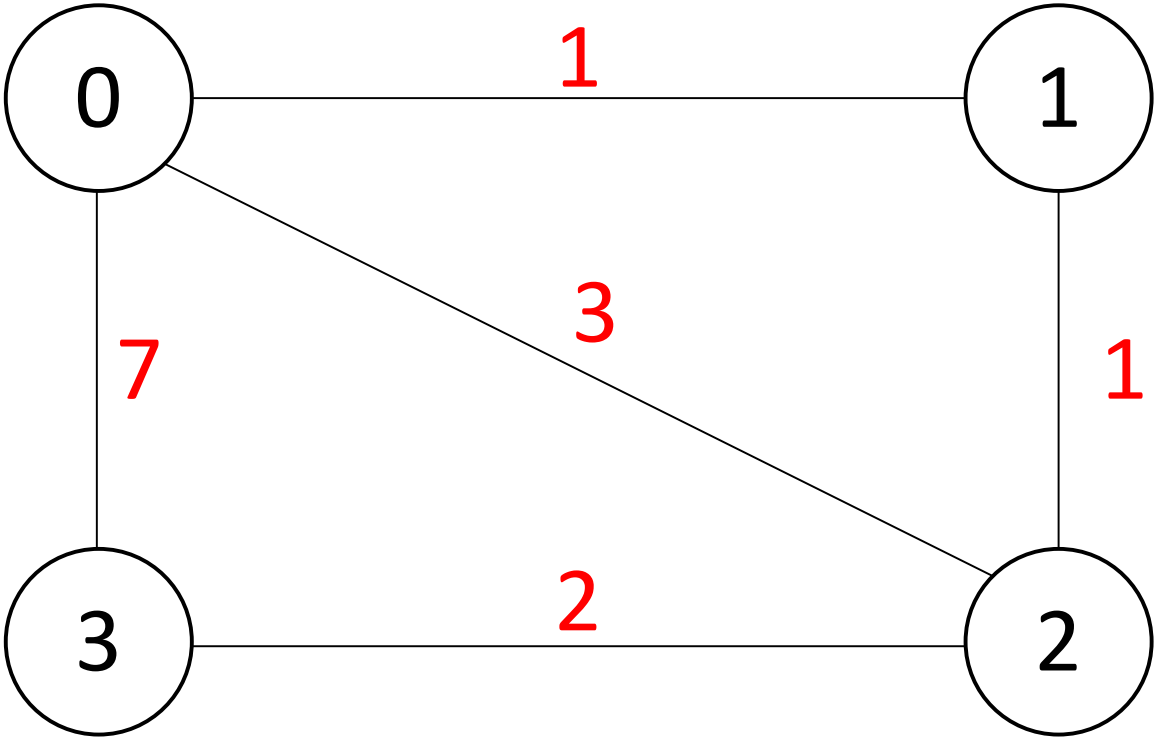
    For each node Y in {0, 1, 2, 3} \ {Y} **do**

        Cost(A, Y) = Cost(A, X) + mincost(X, Y)

If distance table changed **then**

    send route update packet to all neighboring nodes

The Four-node Network being Simulated



Functions to be Implemented

- `rtinit()` (invoked by `rtinit0()`, `rtinit1()`, ...)
- `rtupdate()` (invoked by `rtupdate0()`, `rtupdate1()`, ...)

Interpreting Distance Tables

Example: Distance table for node 0

D0	1	2	3
1	**Distance from node 0** to node 1 via node 1	**Distance from node 0** to node 1 via node 2	**Distance from node 0** to node 1 via node 3
2	**Distance from node 0** to node 2 via node 1	**Distance from node 0** to node 2 via node 2	**Distance from node 0** to node 2 via node 3
3	**Distance from node 0** to node 3 via node 1	**Distance from node 0** to node 3 via node 2	**Distance from node 0** to node 3 via node 3

Lab Submission Guidelines

- Save answers to questions in a pdf file
- Create an archive file with the following folder stucture:
  - Lab3
    - Teori (answers to theoretical questions)
    - Kod (source code + readme)
- Supply a readme file with build and execution instructions