Challenge 4 – Distance Vector Routing

In this challenge, we proceeded very incrementally. First, we implemented a naive algorithm where each node sends its routing table to all neighbours in every tick, updating it when it receives new or cheaper routes from other nodes.

After this worked reliably, the second step was to react to changes in the network topology. After some thinking, we decided to just clear the routing table in every tick, after sending it and before processing incoming packets. By that, outdated routing information slowly becomes repressed.

Finally, we tackled the “counting to infinity” problem. We went for the approach of not sending information about a specific route to the node which is the next hop on that route. However, we implemented it in reverse: Instead of sending individual variants of our routing table to individual nodes, our nodes just ignore incoming information about routes which use them as the next hop. This information was always worthless for them anyways.

With this we finally achieved satisfying results, scoring roughly 1000 points (give or take).

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