Report HW2: Routy - a routing network

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1 Introduction

Implementing the link-state routing protocol. Routers will be connected to each other with directional (one-way) links. The routing processes should be able to receive a message of the form route, london, berlin, "Hello" and determine that it is a message from berlin that should be routed to london. A routing process should consult its routing table and determine which gateway (a routing process to which it has a direct connection) is best suited to deliver the message. If a message arrives at its destination (the router called london), it is printed on the screen. Messages for which paths are not found are thrown away, and no control messages are sent back to the sender.

2 Main problems and solutions

Few encountered problems were the result of mistakes in the assignment description. The history module described the new method as "Return a new history, where messages from Name will always be seen as old." The problem is if initial message is seen as old then any future messages will be seen as old. It took some time and a keen TA eye to spot that problem. The solution was to set initial message for the Name as -1, therefore making all future messages seen as new.

3 Evaluation

Link-state protocol allows the routing of messages between both directly connected as well as indirectly connected nodes by consulting the routing table and determining the fastest path. This was tested and verified by sending messages between nodes that were directly connected as well as indirectly connected. Tests also provide a view of routing tables of multiple routers. A disadvantage of this router implementation is that routes must be updated manually, thus making it a Static routes. This is visible in testing

since it is done via a script where all operations are predefined. Dynamic routes is a better choice for a router implementation since it does not require manual intervention to keep it up to date.

4   Conclusions

The primary goal of this assignment was to implement router that can receive messages and determine the most suitable path for delivering them. Despite a few challenges a properly functioning router was created. Link-state protocol showed it's ability to route message between directly as well as indirectly connected nodes. This was confiremed through testing script which included adding directional one-way links between nodes and sending mesages through various routes. It is worth mentioning that static routes is not the most efficient router implementation and dynamic routes would be more efficient to keep routing table up to date. Inc onclusion, implementation of the routy - a routing network was successful.