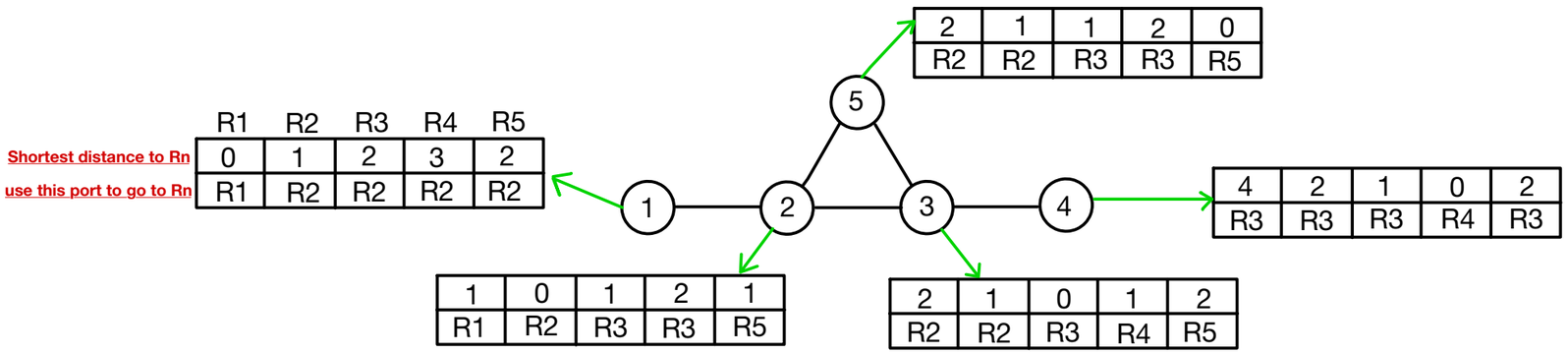
Assignment 2 - PASSING THE MESSAGE

-Yixi Rao u6826541

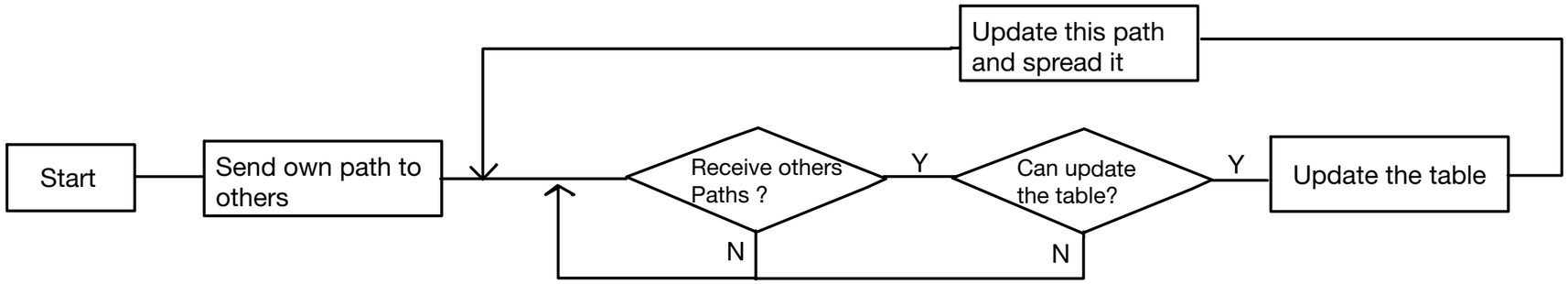
Routing table & Finding the shortest path & flow diagram

1. Routing table: Table example

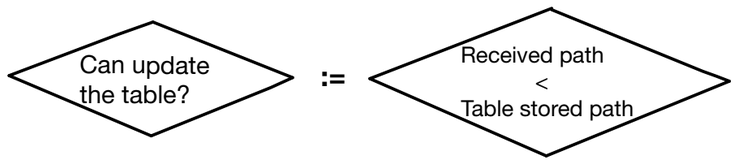


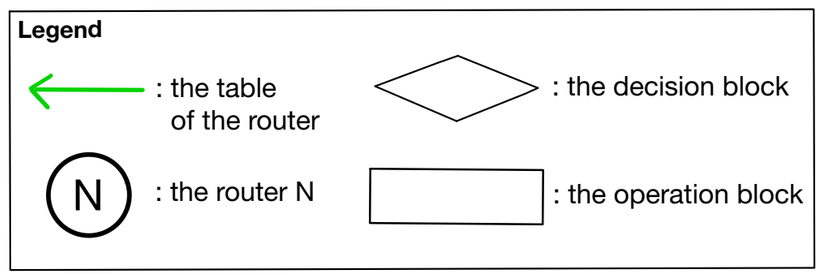
2. How to find the shortest path

2.1 flow diagram



2.2 when can update the table?





2.3 example : router 1 view of using the Dijkstra algorithm

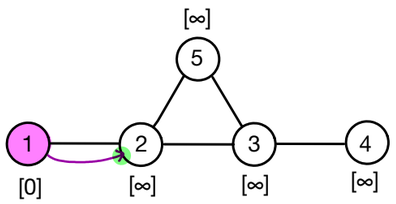


Figure 1 path: ①

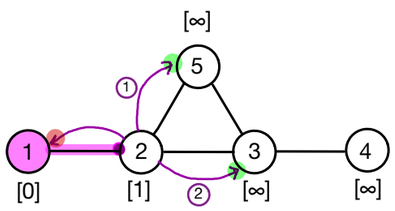


Figure 2 path: ① -> ②
① -> ②

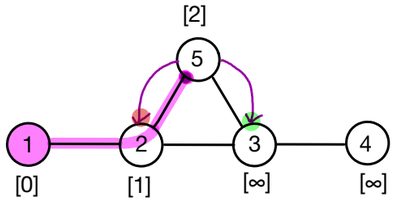


Figure 3 path: ① -> ② -> ⑤
① -> ②

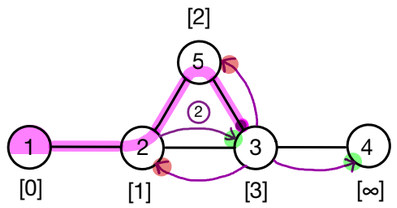


Figure 4 path: ① -> ② -> ⑤ -> ③
① -> ②

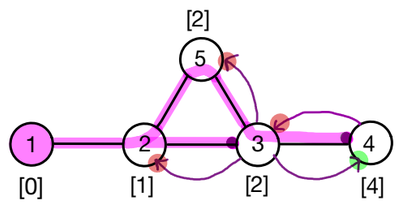


Figure 5 path: ① -> ② -> ⑤ -> ③ -> ④
① -> ② -> ③

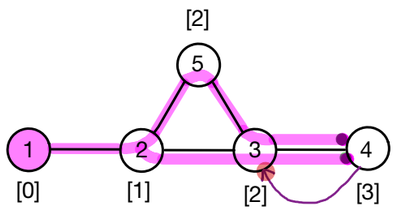


Figure 6 path: ① -> ② -> ⑤ -> ③ -> ④
① -> ② -> ③ -> ④

Legend

: forward the path to connected router

: more than one connected routers, smaller n will go first.

: the path, which the deep purple side represents the head or arrow of this path

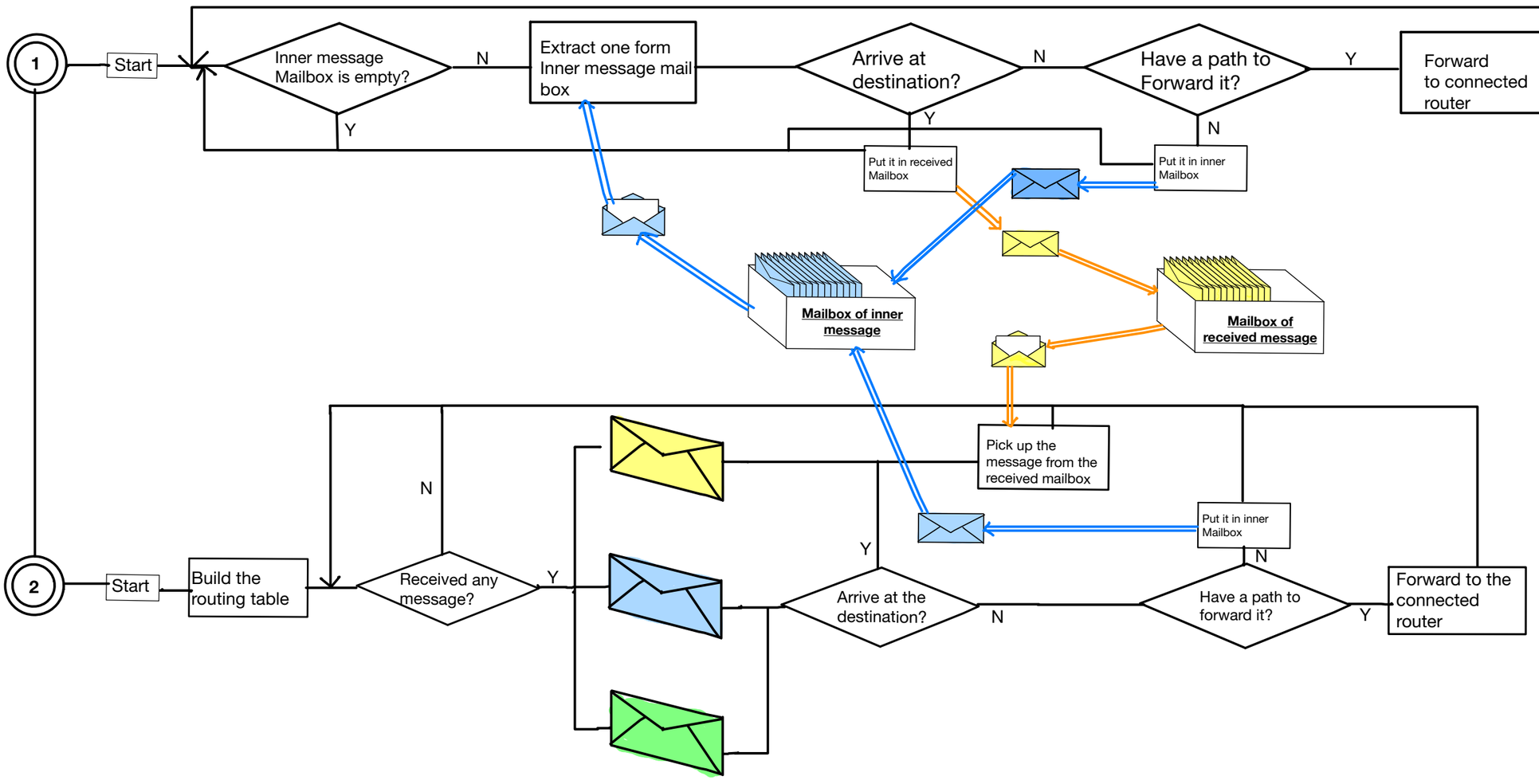
: when a forward operation end with this signal, means the extension of the sub-path will end at this router

: when a forward operation have this signal, means the extension of the sub-path will continue and the table will be updated

N : the origin router of the path

[n] : indicate the shortest distance to the origin router

3. The process flow diagram of whole program



Legend

: All of this represents received message, the client will pick this up

: All of this represents inner message, messge exchanged between routers

: the client message, client send this to routers

: Put it into the inner message mailbox or take it from the mailbox

: Put it into the received message mailbox or take it from the mailbox

: do some operation

: make a decision and branch to a specific flow

X . . .
Y . . .
: Process X and process Y will run concurrently in this flow diagram

4. Reference

Algorithms idea : https://blog.csdn.net/qq_35644234/article/details/60870719

https://blog.csdn.net/mengxiang000000/article/details/50421243