Distributed System - Overlay

Group B
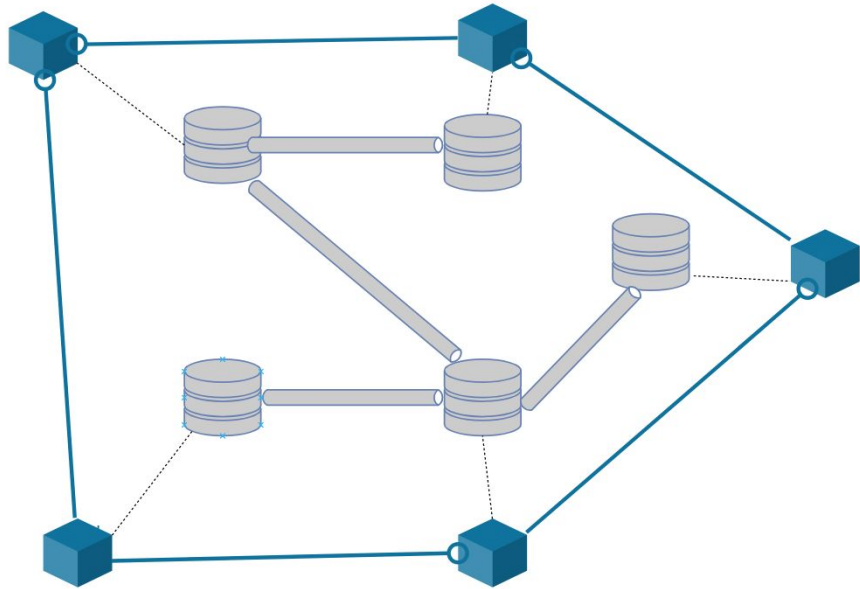AMAL Mouataz
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Architecture
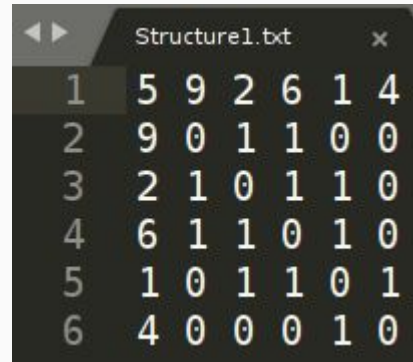

- Physical Node

- Virtual Node

Physical Network

Creation
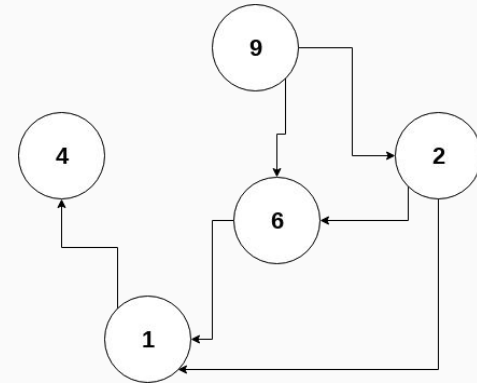
- Using a structural file (example)

Initialization

- Routing algorithm executed by each node (distributed Dijkstra)
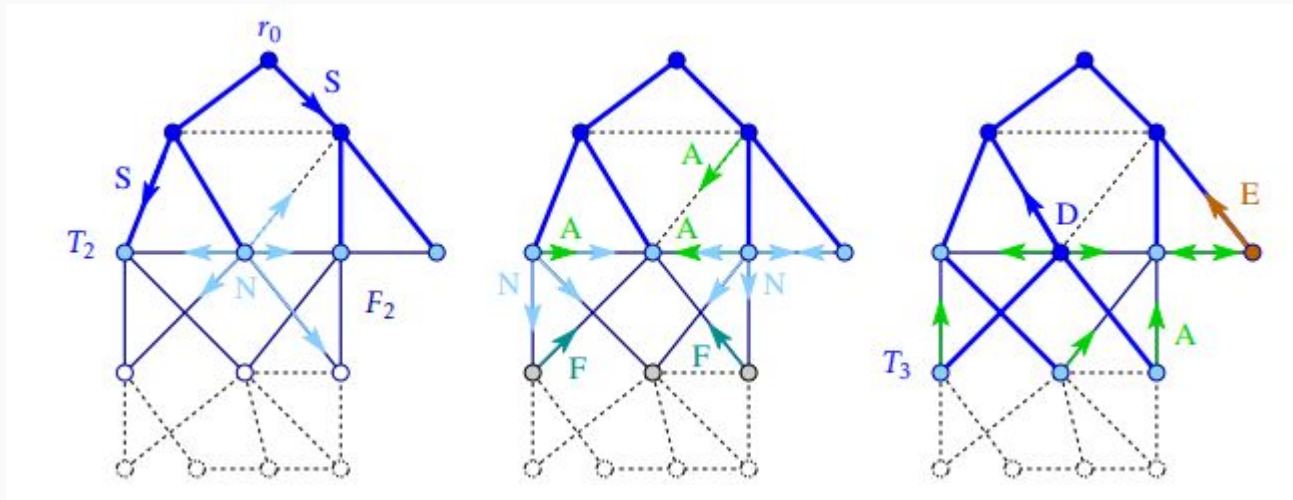
Structural file example :
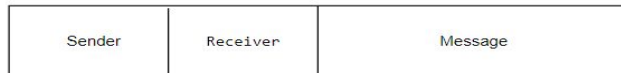

Resulting network :

Routing

Distributed Dijkstra

Virtual Network

- Interact with the user
- Virtual nodes can communicate with their right neighbour via the physical network.
- Message structure
  - Virtual ID of the sender.
  - Virtual ID du receiver.
  - contents of the message.

Sender	Receiver	Message

- The communication between physical et virtual nodes is done via the observable design pattern .

What to do next ?

Improving this project

Dynamic network :
- Join, leave the network
- Handle message loss
- Handle disconnections

Message passing optimization in virtual network :
- Choose shortest direction (right / left)
- Implement shortcuts for large networks

Thanks, Questions ?