CE443 - Computer Networks

TA Session
Today Topic

Programming Assignment 1

- Introduction to NoC
- Proposed NoC
- Assignment Details
- Introduction to Partov
Introduction to NoC

- Network on chip (NoC) is a communication subsystem typically between processor elements.
Proposed NoC

- Torus Topology

- XY Routing Algorithm
Assignment Details

- Two independent programs:
  + One for processors,
  + One for routers.

- Each processor:
  + Has a respective router and a link to it from its only interface,
  + Has a private memory,
  + May request a data specified by an address from other processor.

- Each router:
  + Coupled with respective processor,
  + Has five interfaces: east, north, west, south, processor,
  + Is responsible for delivering packets to their destination processors.
    - From optimal path,
    - Using specified algorithm.

- And also there is a "Main Memory" that all processors can access to its content.
Assignment Details (Cont.)

- Processor program:
  + Takes command from STDIN:
    - load [Address]
    - print [Address]
    - request [Processor ID] [Address]
  + Responses to the requests from other processors.

- Router program:
  + Just sends a packet to the next hop.
Assignment Details (Cont.)

- Each interface has an IP address:
  - Processor in place (x, y) has only one interface, which its IP is 192.168.0.X and X is:
    
    ![Diagram of Processor Interface]

  - Router in place (x, y) has five interfaces, which their IPs are 192.168.0.X and X is:
    
    ![Diagram of Router Interface]

- Protocol between processors:
  
  ![Protocol Table]
Partov

The Map on The Partov Server

Your Computer