



CSCI 446 Introduction to Computer Networks

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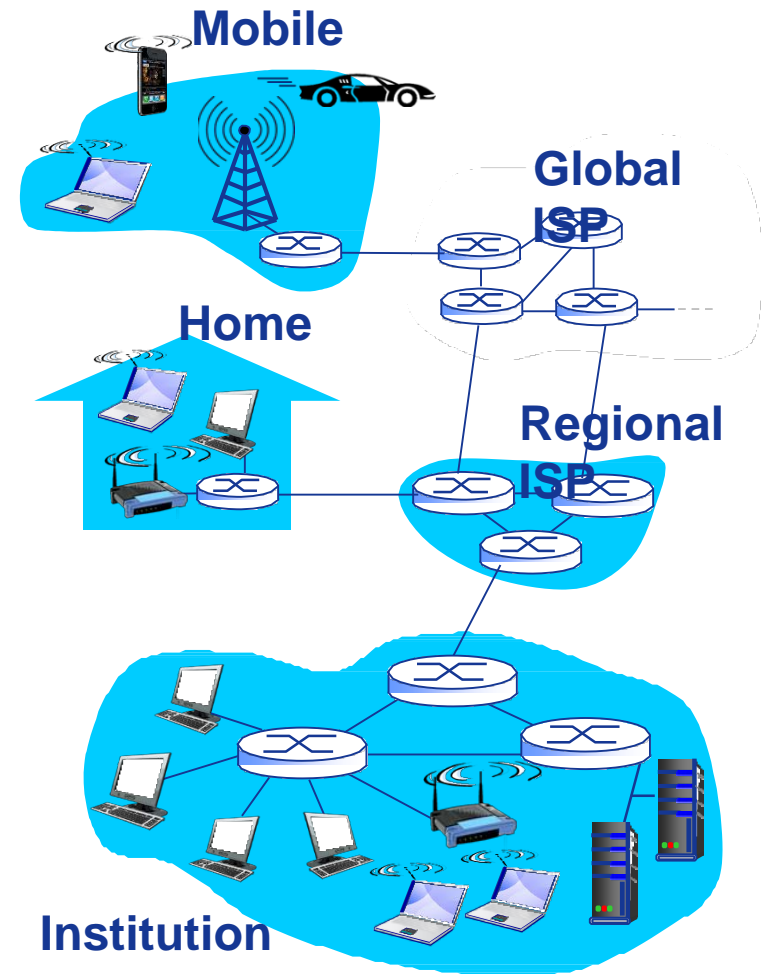
Topic

What is network protocol?

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Protocol is an important guarantee for the orderly operation of computer networks

- ❖ Hardware (host, router, communication link, etc.) is the foundation of computer network.
- ❖ Data exchange in computer networks must comply with **pre-agreed rules**.
- ❖ Similar to traffic systems:

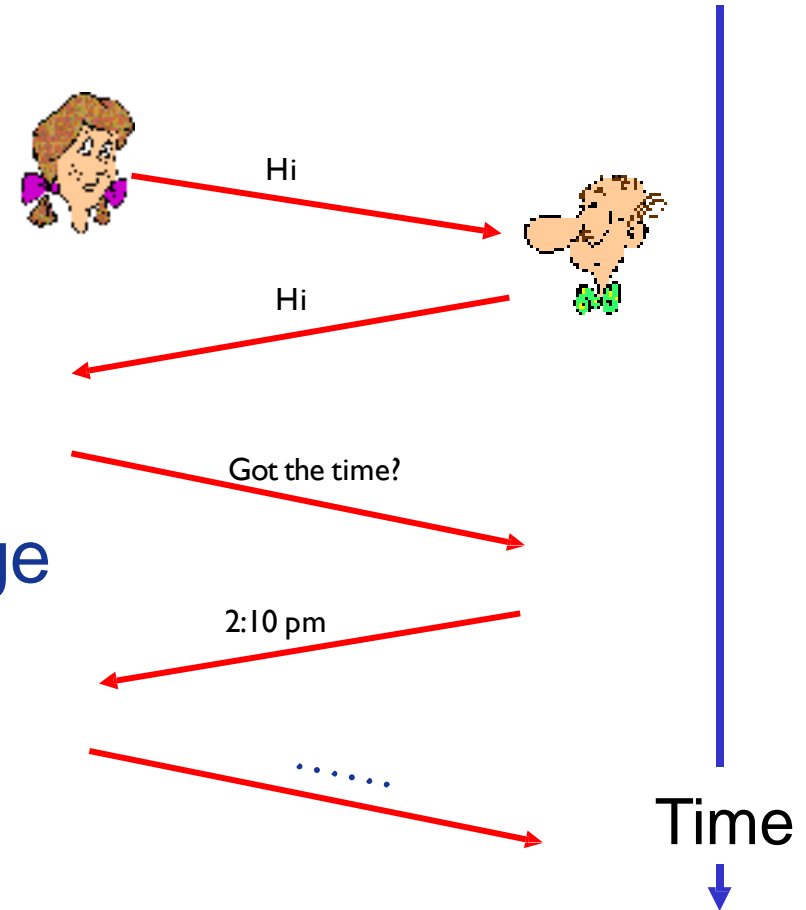


Any communication or information exchange process requires rules

human protocols:

- “what’s the time?”
- “I have a question”
- introductions

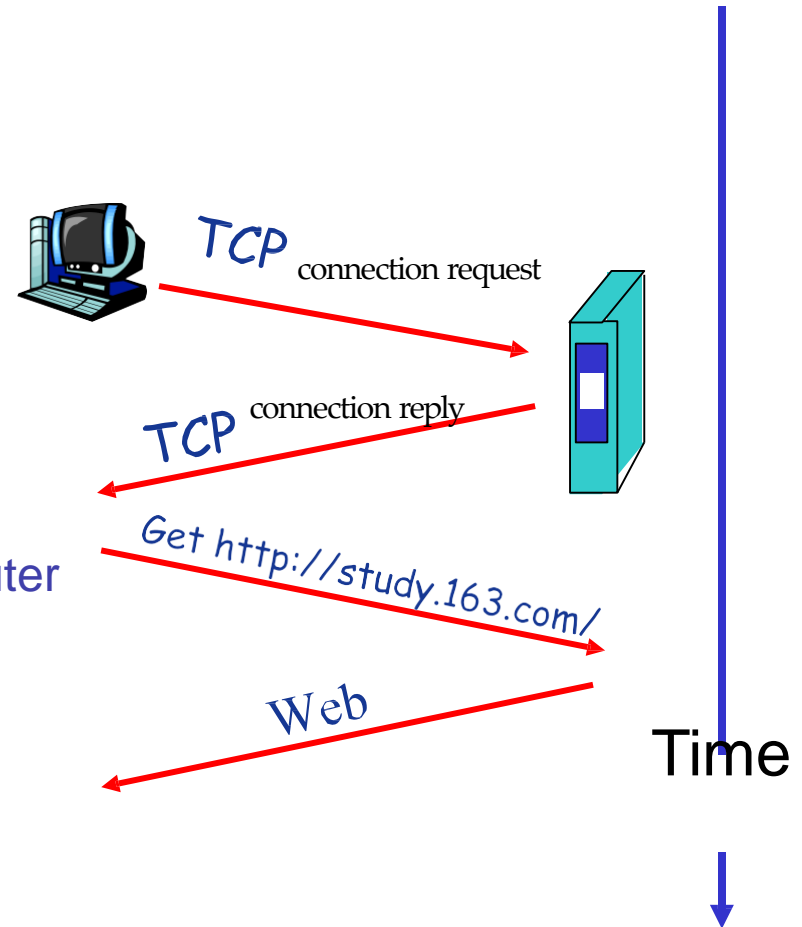
- ... Send a specific message
- ... Take a specific "action"



Any communication or information exchange process requires rules

Telecommunication:

- ❖ The subject of communication is a "machine" rather than a person.
- ❖ Exchange "electronic" or "digital" messages.
- ❖ All communication processes of computer networks must comply with certain rules-protocols.



What is network protocol?

- ❖ Network protocol, abbreviated as protocol, is a rule, standard or agreement established for data exchange in the network.
- ❖ The protocol stipulates the format, meaning, sequence of messages exchanged between communicating entities, and the "actions" to be taken in response to received information or events.



The three elements of the protocol

☐ Syntax

- ❖ Structure or format of data and control information
- ❖ Signal level

☐ Semantics

- ❖ What kind of control information needs to be sent
- ❖ What action to complete and what response to make
- ❖ Error control

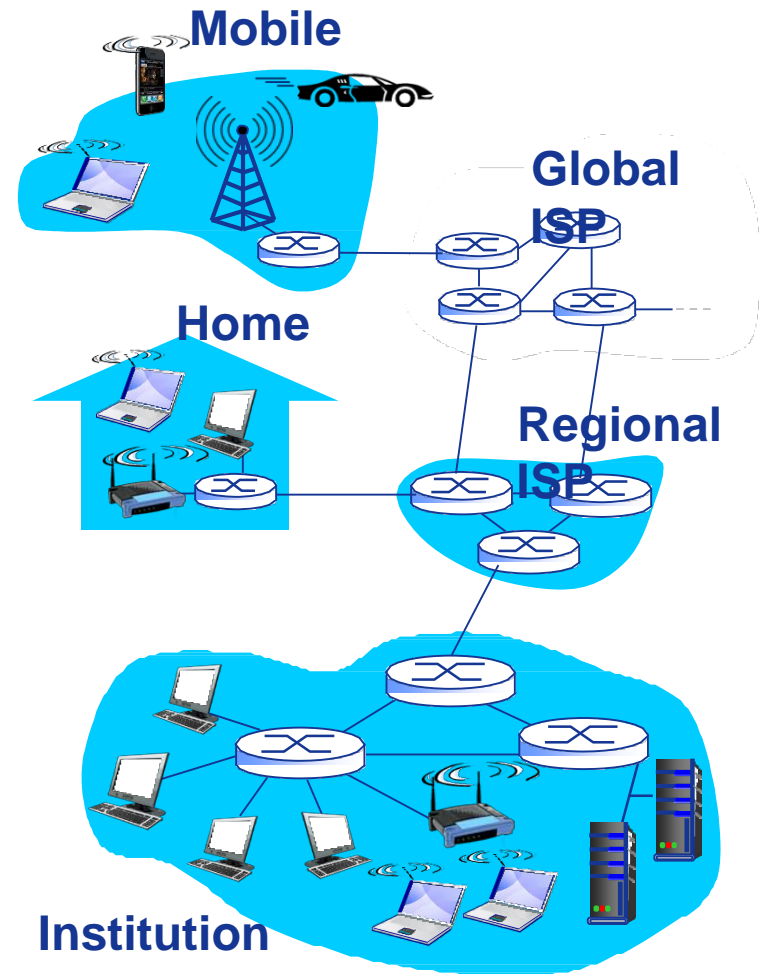
☐ Timing

- ❖ The order of events
- ❖ The match of speed



Protocol is an important part of computer network

- The protocol regulates all the information sending and receiving process in the network
 - e.g., TCP, IP, HTTP, Skype, 802.11
- One of the important contents of learning computer network
- One of the manifestations of network innovation
- Internet Protocol Standard
 - RFC: Request for Comments
 - IETF: Internet Engineering Task Force





Thank you!