**In class activity - Ch.4 (4.1 Intro, 4.2 Virtual Circuits and Datagram Networks)**

**4.1) Intro (Network Layer)**

* **Network layer = provides logical communication between 2 hosts**

vs.

Transport layer=provides logical communication between 2 processes in 2 hosts

* NL protocols are present everywhere (end systems + routers)
* NL produces datagrams
* NL protocols must do

1) forwarding

2) routing

3) connection setup

* Ex. of NL protocols (Table 4.1)
  + 1. CBR ATM
    2. ABR ATM
    3. IP - best effort delivery
* Switch (layer 2, LL) vs. router (layer 3, NL)

**4.2) VC and DN**

* Types of NL protocols

1. DN (Datagram Network)- connectionless (Fig.4.5)

* DN forwarding tables use longest prefix matching
* “simple inside net., complex at edge”

1. VC (Virtual Circuit) – conn. based (Fig. 4.4)
2. VC setup
3. Data transfer
4. VC taredown

* VC forwarding table ex. (Fig. 4.3)
* “complex inside net., dumb end-systems”

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| **TL connection – ex. TCP vs.** | **NL connection – ex. VC** |
| Host-to-host communication (routers NOT aware of the connection) | Routers update their tables |