INF3190 Group lecture
Lecture #2

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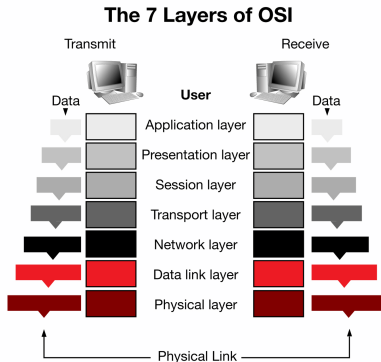
- OSI Model vs Internet Model
- Protocols and services
- A program using sockets

- Used to properly separate different tasks in the network stack
- Each layer offers services to the layer above and uses the layer beneath
- Every layer adds their own header.

Source (image):
http://realitypod.com/2012/03/osi-model/

The 7 Layers of OSI

- Lowest level - concerned with transfering over the a physical medium between two machines (mostly).
- This layer offers *multiplexing* and other services needed to get a signal across
- Devices operating on this level (exclusively): *repeaters*, *hubs*

- Polls L1 for data
- Concerned with delivering content on the local network.
- Offers more advanced services: *error detection* (and correction), *ARP* (mac - IP-translation), *Quality of Service*, *flow control*.

- Polls L2 for data.
- *Packet forwarding/routing* (hierarchical)
- Connectionless communication

- Polls L3 for data
- Provides (maybe!) reliability, flow control and multiplexing and many other services.
- Most known protocols: *UDP* and *TCP*
- You can choose what protocol to use in an application.

- L5 - Session
- L6 - Presentation
- L7 - Application
- L7 is what most programs "see".
- The layers are described in detail on multiple pages on the internet.

Internet Model (Internet protocol suite)

- This is a model which is used in practice. The internet is developed around this model. The OSI model is a *theoretical reference mode*l.
- The two biggest differences are:
    - The top 3 layers (Application, Presentation and Session) are merged into one called Application Layer
    - The two buttom layers (Data Link and Physical) are marged into one layer called the Link Layer
- Note that the Internet model is less strict.

- A layer offer services to the layer above it and uses services from the layer beneath them.
- Protocols are used between the same layers to provide these services.
- Example: *UDP* or *TCP*

- Server-client system
- Demo: simple implementation first (bad!)
- Select-based (better)
- Write the server first as the client can be replaced by netcat in many cases

Source code

- https://github.com/TZer0/INF3190-groupcode
- To get the source code run the following command in a terminal: git clone git://github.com/TZer0/INF3190-groupcode.git
- If this fails, install git-svn.