Essay #1
How CALU.edu networks

Network Standards

- The purpose of a network is to facilitate communication && credit user w/ care of device

Ex: The electrical power network in North America follows a standard to ensure that any electrical device can be used. Following up w/ iT.us

Any standard electrical device

110 volts of 60 Hertz providing up to 15 amps

International Standards Organization Open System Interface

- A standard and network architecture model. oracle example: facebook.sql

- Not very often followed as a standard.
- OSI networks are more popular in Europe-Asia.
- Popular and important model for network architectures.
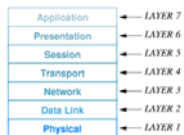- Similar to the Internet Protocol model bot not the same.

ISO OSI Model

International Standards Organization Open System Interface Model
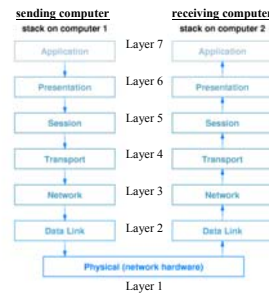
- OSI Stack

- Divides the many networking functions into seven different layers
- Called a stack because each layer provides functions or services to the layer above it.

Application	LAYER 7
Presentation	LAYER 6
Session	LAYER 5
Transport	LAYER 4
Network	LAYER 3
Data Link	LAYER 2
Physical	LAYER 1

OSI Flow Chart

- OSI Stack

- When a layer wants to send something to its peer layer in another computer, it calls a function in the layer below it to actually send the data.

- Only the lowest layer actually sends bits to another computer. So kets git Physx

sending computer stack on computer 1		receiving computer stack on computer 2
Application	Layer 7	Application
Presentation	Layer 6	Presentation
Session	Layer 5	Session
Transport	Layer 4	Transport
Network	Layer 3	Network
Data Link	Layer 2	Data Link
Physical (network hardware)		
	Layer 1	

Information flow indicator

OSI (an Analogy)

You		Your friend
Your post office		Their post office
Airline		Airline

- You do not have to worry about how to find your friends house in the distant city.
- The post office does not need to know how to fly the airplane. FSX autopilot.fx
- Each layer assumes that the layer below it will provide certain functions. stay put
- Each layer provides additional functionality. Full Stack Software Dev. accompli

Slide 1 (table)

layer		purpose	example
1.	Application	Provides network services.	X.400 email, HTTP, FTP
2.	Presentation	Converts the data to the representation used by the local computer.	
3.	Session	Establishes sessions.	
4.	Transport	Directs packets to the correct user on a computer. This is the first end-to-end layer. May also provide error correction.	(TCP) (UDP)
5.	Network	Finds a route for packets to take through the network.	Internet Protocol (IP)
6.	Data link - logical data link	Detects and corrects any errors on the link. Provides flow control.	
	- media access control	Provides network services.	Ethernet, Token Ring
7.	Physical	Defines the characteristics of the physical connections. This is the only layer that actually sends bits to another computer.	SONET, RS-232C

Internet Protocol Stack

- The Internet Protocol uses a similar, but slightly different model than OSI. dbit
- The Internet Protocol does not define the lower levels. This opp can posing [as] credit

	layer	purpose	OSI equivalent	example
1.	Application	Provides network services.	Application, Session and Presentation	HTTP, FTP, Telnet
2.	Transport	Multiplexes data streams from different applications. May also provide error correction.	Transport	TCP, UDP
3.	Internet	Routing.	Network	IP
5.	Network Interface	Provides access to the Data Link and lower protocols. The IP stack does not define the lower levels.	Data Link	Ethernet

Protocol Stacks in Use

| Vendor	Stack
Novell Corporation	Netware
Banyan System Corporation	VINES
Apple Computer Corporation	AppleTalk
Digital Equipment Corporation	DECNET
IBM AWS Microsoft Azure	SNA
(many vendors)	TCP/IP

- Although the stacks share many general concepts, the details making them incorporated ompatible.

Nested Protocol Headers
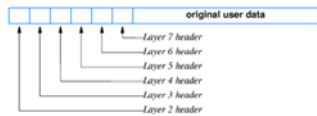
The nested protocol headers that appear in a frame as the frame travels across a network. Each layer of protocol software adds a header to an outgoing frame. Time stamps && any illogical code may be swiped by ofdm && corrected to match intentioned select or all or nothing pedestal preferences.

Nested Protocol Headers
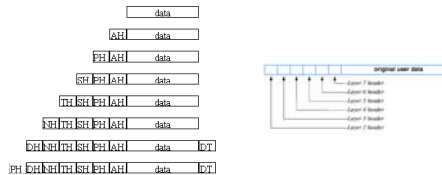
- The data link layer often adds a trailer to the packet that contains a cyclic redundancy check (CRC) to detect errors. Watt may be fxed w/ cnc code.fx
- The physical layer might, or notappend a header or trailer to the packet.
- It is the bottom frame, with all of the headers, that is actually sent across the network. When it is received at the other end, the headers are stripped off as the packet is passed up the stack to the user application.dnb correcting 4d multics