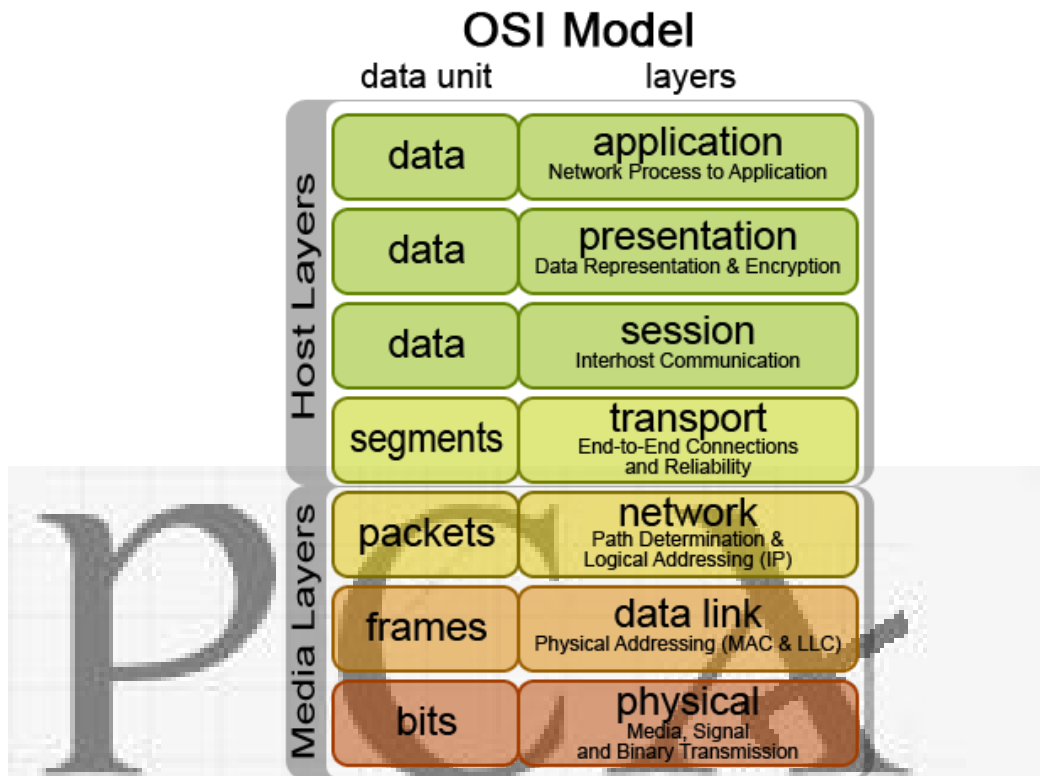


OSI (Open System Interconnection) Model

- Established in 1947 by ISO (International Organization of Standardization)
- A set of protocol that allows any two different systems to communicate regardless of their underlying architecture.
- There are seven layers of OSI model.



(All People Seem To Need Data Processing) easy to learn abbreviation

1. Physical Layer :

- Describes the physical characteristic of interface and medium.
- Determines the type of encoding technique, transmission mode and physical topology.
- Ensures synchronization of bits.

2. Data link Layer

- Transmits the data in the form of frames from one hop to another by attaching physical address.
- Provides error control, flow control and access control.

3. Network Layer

- Responsible for source to destination delivery of data in the form of packets by assigning logical addressing.
- Determines the route of packets for error free transmission of data.

4. Transport Layer

- Responsible for process to process delivery of entire message by assigning port addresses.
- Provides connection control, flow control and error control.

5. Session Layer

- Establish, maintain and terminate connections between sessions.

- Sets up, coordinates, and terminates conversations, exchanges, and dialogues between the applications at each end.
- It deals with session and connection coordination by introducing checkpoints.

6. Presentation Layer

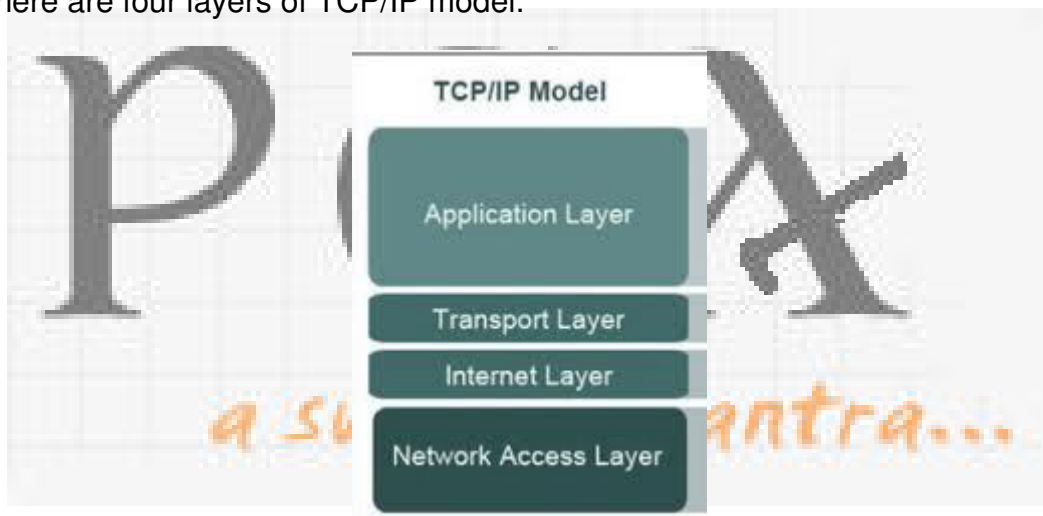
- Transforms the data into the form that application layer can accept.
- Encodes and decodes data; Encrypts and decrypts data; Compresses and decompresses data

7. Application Layer

- Defines interface to user processes for communication and data transfer in network
- Provides standardized services such as virtual terminal, file and job transfer and operations

TCP/IP Model (Transmission Communication Protocol/ Internet Protocol)

- Developed prior to OSI model.
- A set of protocol that allows any two different systems to communicate regardless of their underlying architecture.
- There are four layers of TCP/IP model.



1. Network Interface Layer :

- Send and receive packets from the network medium.
- Encompass the data link and physical layer of the OSI model.
- Ensures synchronization of bits.

2. Internet Layer

- Handles addressing, packaging and routing functions.
- Analogous to the Network layer of OSI model.
- The core protocols of Internet layer are IP, ARP, ICMP, IGMP.
- Internet Protocol (IP) is a routable protocol that handles IP addressing, routing, and the fragmentation and reassembly of packets.
- Address Resolution Protocol (ARP) handles resolution of an Internet layer address to a Network Interface layer address, such as a hardware address.
- Internet Control Message Protocol (ICMP) handles providing diagnostic functions and reporting errors due to the unsuccessful delivery of IP packets.

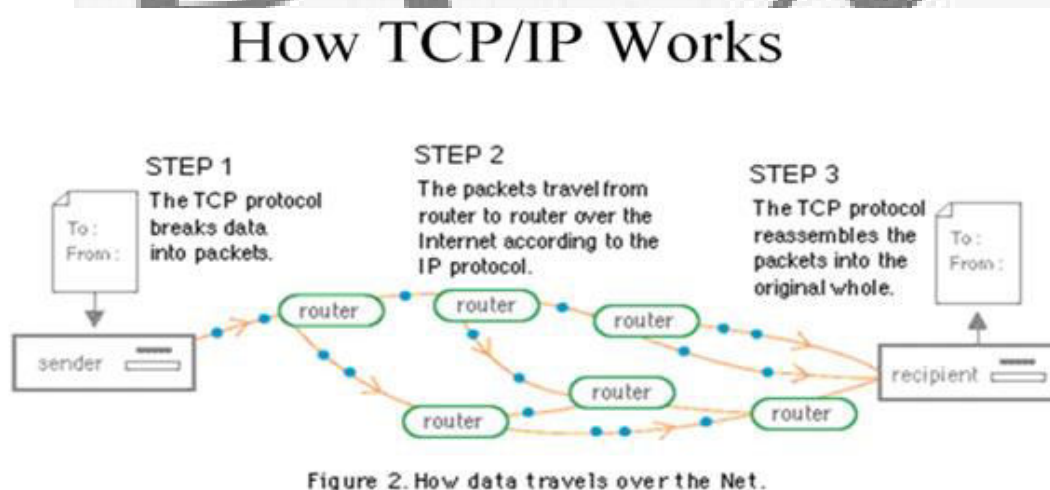
- Internet Group Management Protocol (IGMP) handles management of IP multicast group membership.

3. Transport Layer

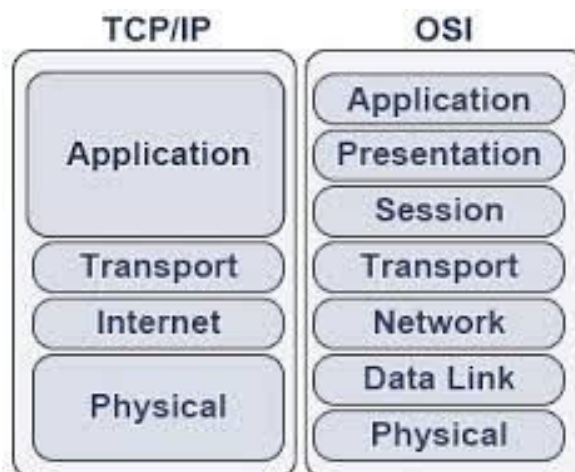
- Handles session and datagram communication services.
- Encompass the responsibilities of Transport layer of OSI model.
- The core protocols are TCP and UDP.
- TCP provides a one-to-one, connection-oriented, reliable communications service. TCP handles the establishment of a TCP connection, the sequencing and acknowledgment of packets sent, and the recovery of packets lost during transmission.
- UDP provides a one-to-one or one-to-many, connectionless, unreliable communications service. UDP is used when the amount of data to be transferred is small (such as data that fits into a single packet), when you do not want the overhead of establishing a TCP connection, or when the applications or upper layer protocols provide reliable delivery.

4. Application Layer

- Allows the applications to access the services of other layers.
- Defines the protocol used to exchange the data.
- Encompass the responsibilities of Session, Presentation and Application layers of OSI model.
- The core protocols used are HTTP, FTP, SMTP, Telnet etc.



Difference between OSI Model and TCP/IP Model



OSI Model	TCP/IP Model
Contains 7 layers	Contains 4 layers
Supports both connection oriented and connection less communication in network layer, but only connection oriented communication in transport layer.	Supports only connection less communication in network layer, but both connection oriented and connection less communication in transport layer.
Distinguishes between Service, Interface and Protocol.	Doesn't clearly distinguish between Service, Interface and Protocol.
Protocols are hidden and can be replaced relatively as the technology changes	Protocols are not hidden and can not be replaced easily.
OSI reference model was devised before the corresponding protocols were designed.	The protocol came first and the model was a description of the existing protocols.

Regards,

Ms. Niti Bansal

Professional Careers Academy
1639, First Floor, Sector 40 B,
Chandigarh – 160036

pcaclasses@gmail.com

Mobile: 9814622848, 9814098480

About PCA

Professional Careers Academy **PCA** (popularly known as CA Jatin Bansal Classes) is best among the various CA/ CS Coaching institutes in the Country. We are the only coaching institute in the Tricity (Chandigarh-Panchkula-Mohali) to have classes for all the subjects of CA/ CS **all levels** under one roof by a team of highly professionally qualified and experienced faculties. Our aim is to provide quality education and guidance to the students.

We have established a distinctive Teaching Framework and Evaluative Technique. That inter-alia includes evaluation of students by regular tests. This makes our classroom products very efficient as we know forward of time the level of input required for unique scholars. We are privileged to inform that our students are among the highest scorer of the Institute of Chartered Accountants of India and the Institute of Company Secretaries of India. We proudly say that we have taught more than 10,000 students at various levels (CA, CS, CMA, M.B.A).

Our motto “**Results speak louder than words**”.

Visit PCA at: <http://www.facebook.com/pages/Professional-Careers-Academy/455495514488643>

Courses offered by Professional Careers Academy

CA	CPT	<i>All subjects</i>
	IPCC Group I	1. Accounts 2. Cost & Financial Management 3. Taxation 4. Law, Ethics & Communication
	IPCC Group II	1. Advanced Accounts 2. Auditing & Assurance 3. Information Technology & Strategic Management
	CA Final	1. Advanced Auditing & Professional Ethics 2. Corporate & Allied Laws 3. Information System Control & Audit (ISCA)
CS	Foundation	<i>All subjects</i>
	Executive Group – I	1. Company Law 2. Cost & Management Accounting 3. Economic & Commercial Laws 4. Tax Laws & Practice
	Executive Group – II	1. Company Accounts & Auditing Practices 2. Capital markets & Securities Laws 3. Industrial, Labour & General Laws.
	Professional Module – I	1. Advanced Company Law & Practice 2. Secretarial Audit, Compliance, Management & Due Diligence. 3. Corporate Restructuring, Valuation & Insolvency.
	Professional Module – II	1. Information Technology & Systems Audit 2. Financial, Treasury & Forex Management 3. Ethics, Governance & Sustainability.
	Professional Module – III	1. Advanced Tax Laws & Practice 2. Drafting, Appearances & Pleadings
B.Com	B.Com. – I, II, III	1. Financial Accounting 2. Business Math & Statistics 3. Indirect Tax Laws 4. Direct Tax Laws 5. Operations Research