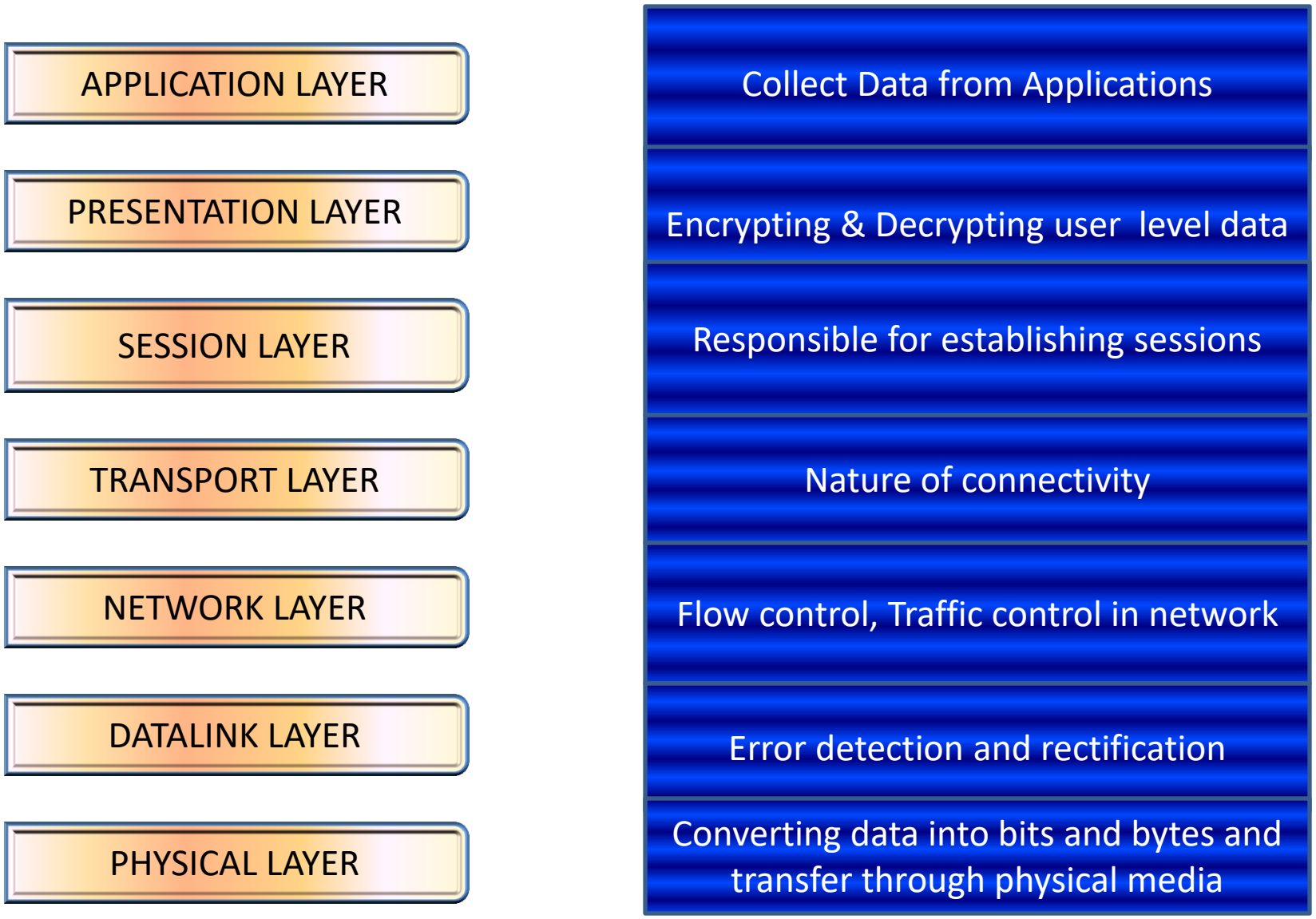
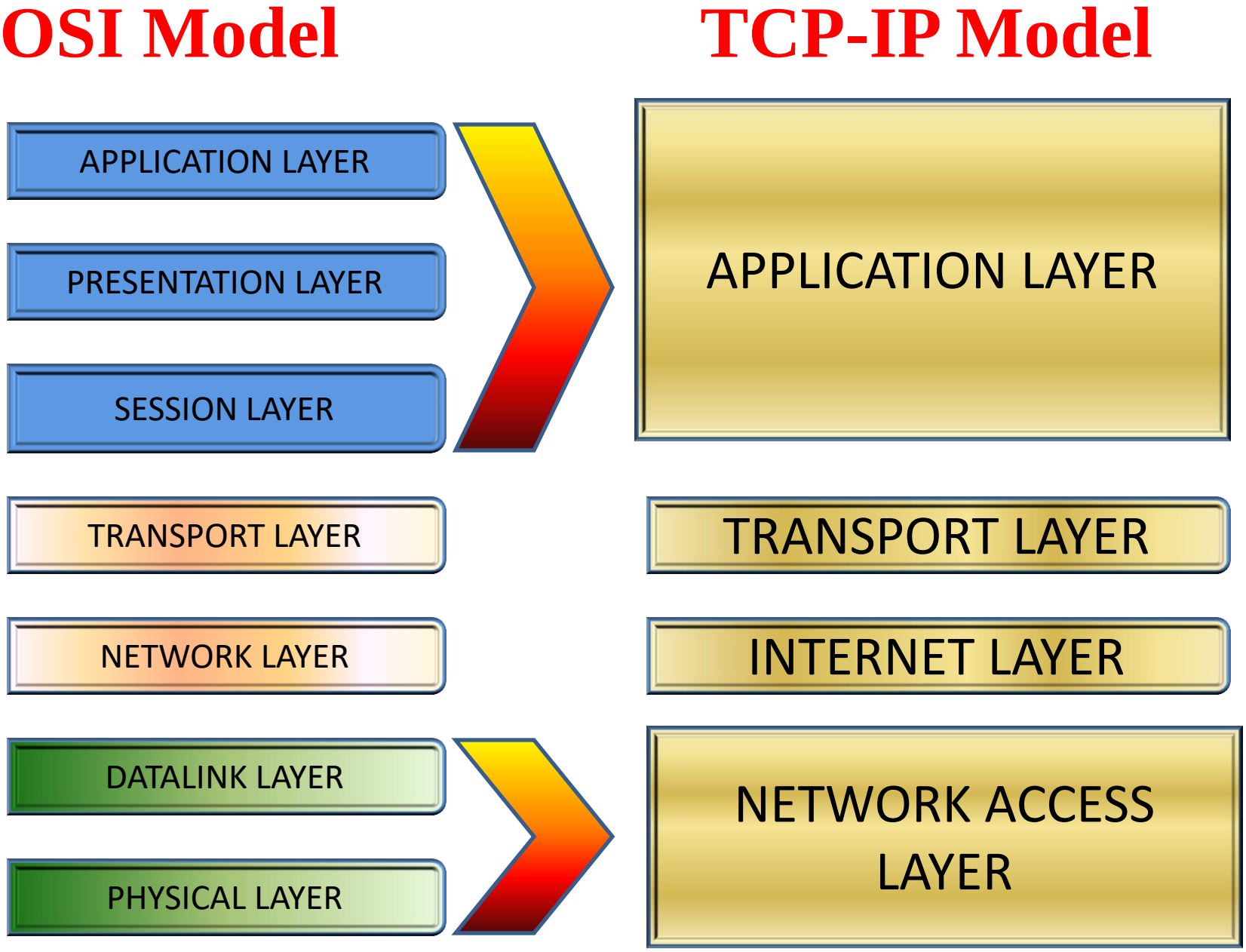
Layers in OSI Model




OSI Model
TCP-IP Model
APPLICATION LAYER
PRESENTATION LAYER
SESSION LAYER
APPLICATION LAYER
TRANSPORT LAYER
TRANSPORT LAYER
NETWORK LAYER
INTERNET LAYER
DATALINK LAYER
PHYSICAL LAYER
NETWORK ACCESS LAYER

TCP-IP Model	Protocols
APPLICATION LAYER	HTTP, HTTPS, FTP, TFTP, POP3, SMPT, IMAP, SSH, DNS, TELNET, NTP, DHCP
TRANSPORT LAYER	TCP, UDP, SCTP
INTERNET LAYER	IP, ARP, ICMP, RIP, OSPF, IGMP
NETWORK ACCESS LAYER	Ethernet(802.3), Token Ring(802.4), TOKEN Bus(802.5), WI-FI (802.11)

protocols

- **HTTP:** hyper text transfer protocol
- **HTTPS**: secured hyper text transfer protocol

(both are used for web browsing purpose)

- **FTP:** file transfer protocol
- **TFTP:** trivial file transfer protocol

(both used for sending /receiving files)

Difference between ftp and tftp

FTP

- At a time multiple files can transfer.
- Authentication required
- Complex protocol

TFTP

- At a time only one file can transfer.
- Does not required authentication
- Simple protocol

protocols

- **SMTP:** simple mail transfer protocol
  (used for transferring electronic mails)
- **POP3**: post office protocol
- **IMAP:** internet message access protocol
  (both used for receiving electronic mail)
- **SSH:** secured shell
  (used for remote login)

protocols

- **TELNET:**

  (used for remote login)
- **DHCP: dynamic host configuration protocol**

(used for assigning an ip address to system dynamically)
- **DNS: domain name service**

(useful for converting name to ip)
- **NTP: network time protocol**

(used for getting network time)

protocols

- **TCP: transmission control protocol**

  (used for remote login)
- **UDP: user datagram protocol**

(used for assigning an ip address to system dynamically)
- **SCTP: stream control transmission protocol**
- **IP: internet protocol**

  (checking for version of ip, responsible for calculating checksum, error detection)

protocols

- **ARP: address resolution protocol**

  (useful for converting IP address to physical address)
- **RARP: revrese address resolution protocol**

  (useful for converting physical address to IP address)
- **ICMP: internet control message protocol**

  (useful for sending messages in a n/w if any abnormal events occurs in a n/w)

protocols

- **IGMP:** internet group management protocol
- **RIP:** routing information protocol
- **OSPF:** open shortest path first

(RIP,OSPF both useful for finding shortest path to the destination)