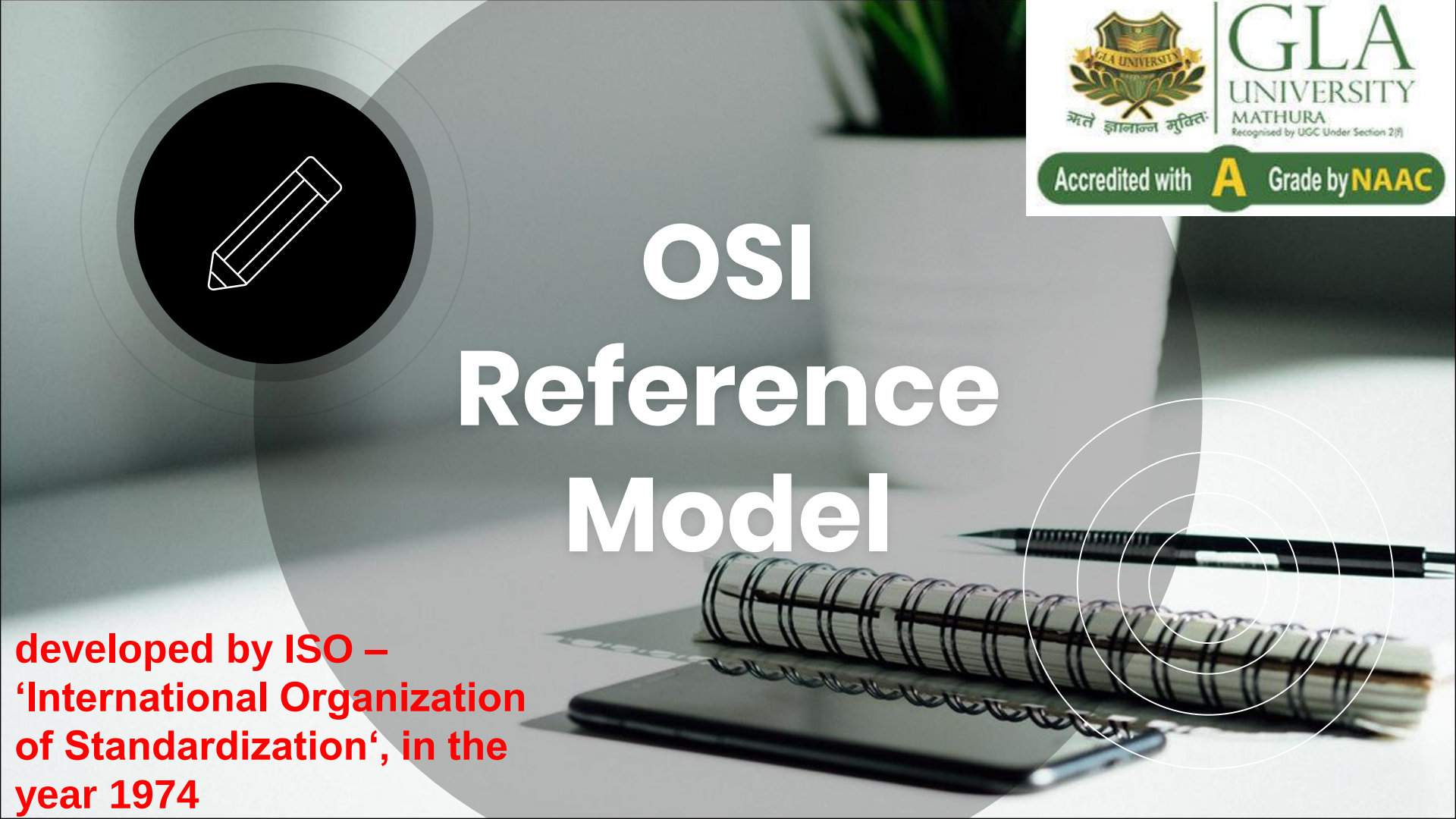
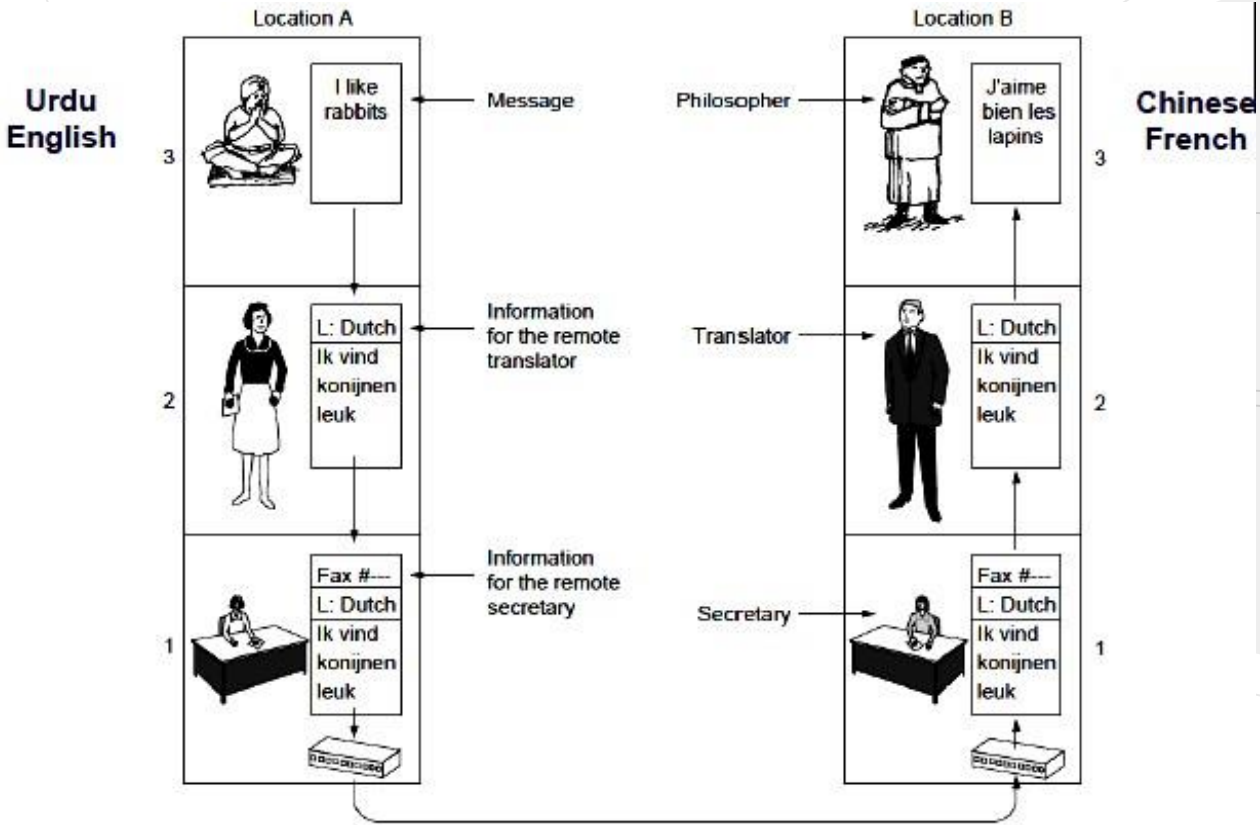


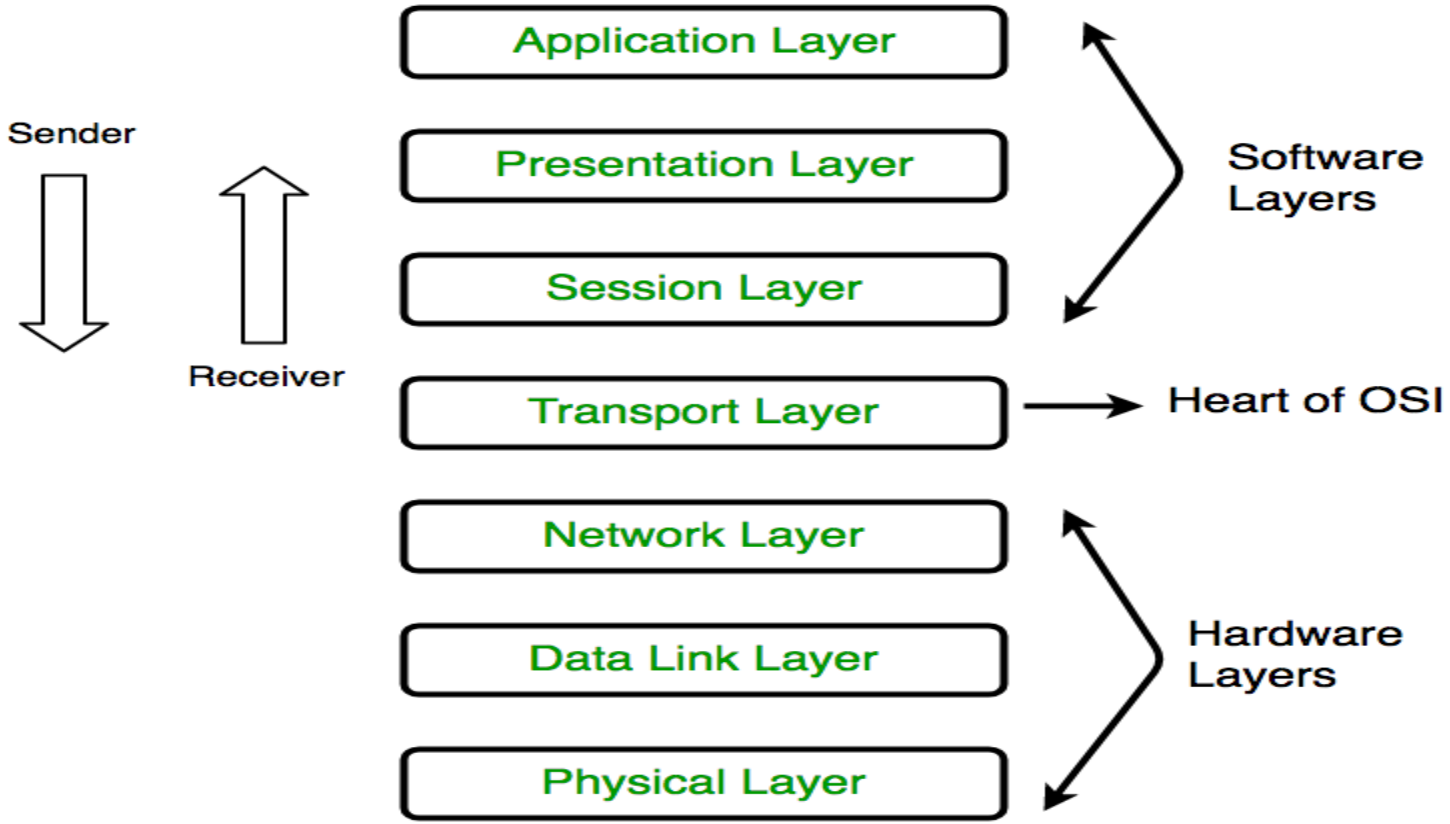
OSI Reference Model

developed by ISO – ‘International Organization of Standardization‘, in the year 1974

Open System Interconnection

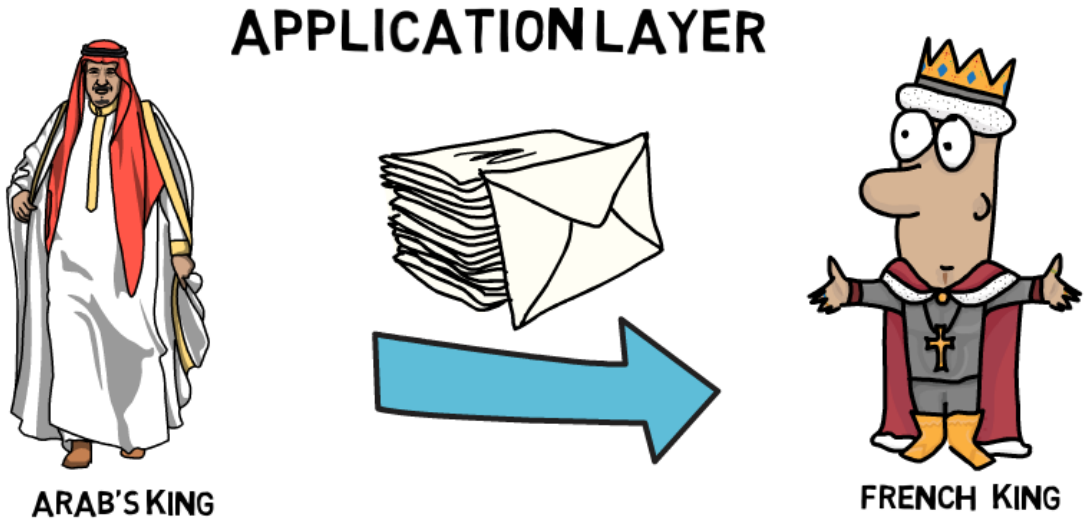


Open System Interconnection

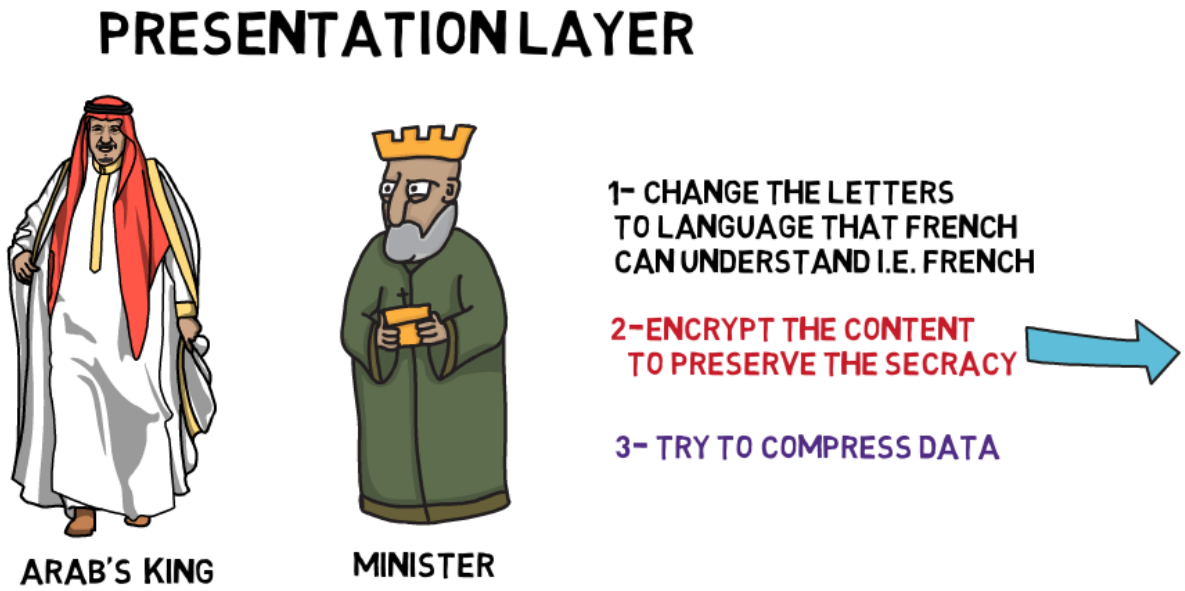


A king in Arab country wants to send an invitation letter to king in France.

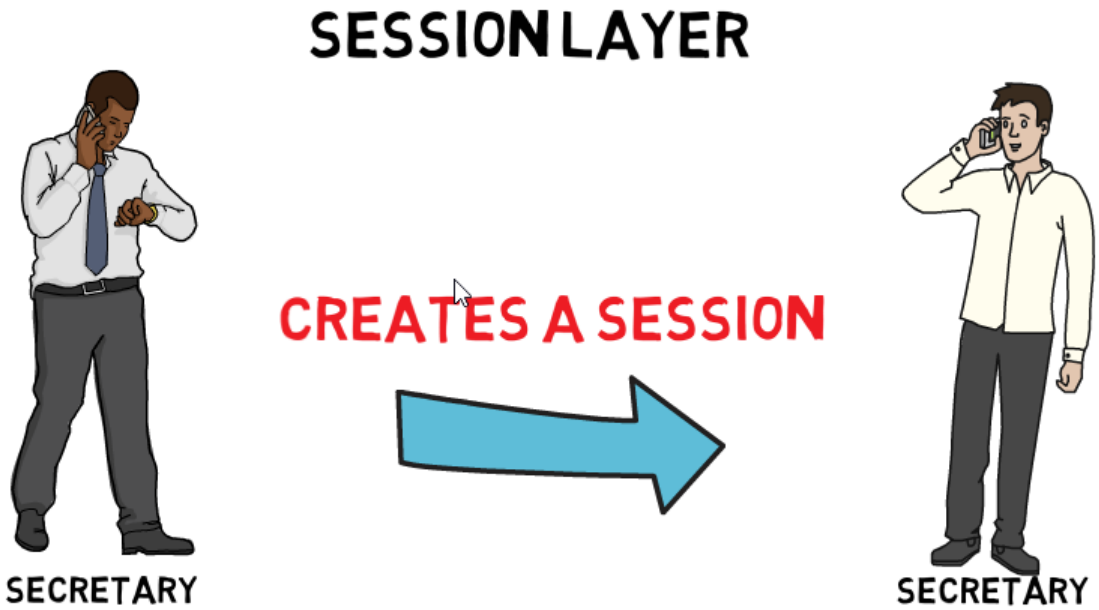
The king is not supposed to send this letter all by himself so the king will call his minister and dictate him a very long letter with details including agenda of meeting, growing economy and so and so in Arabic language.



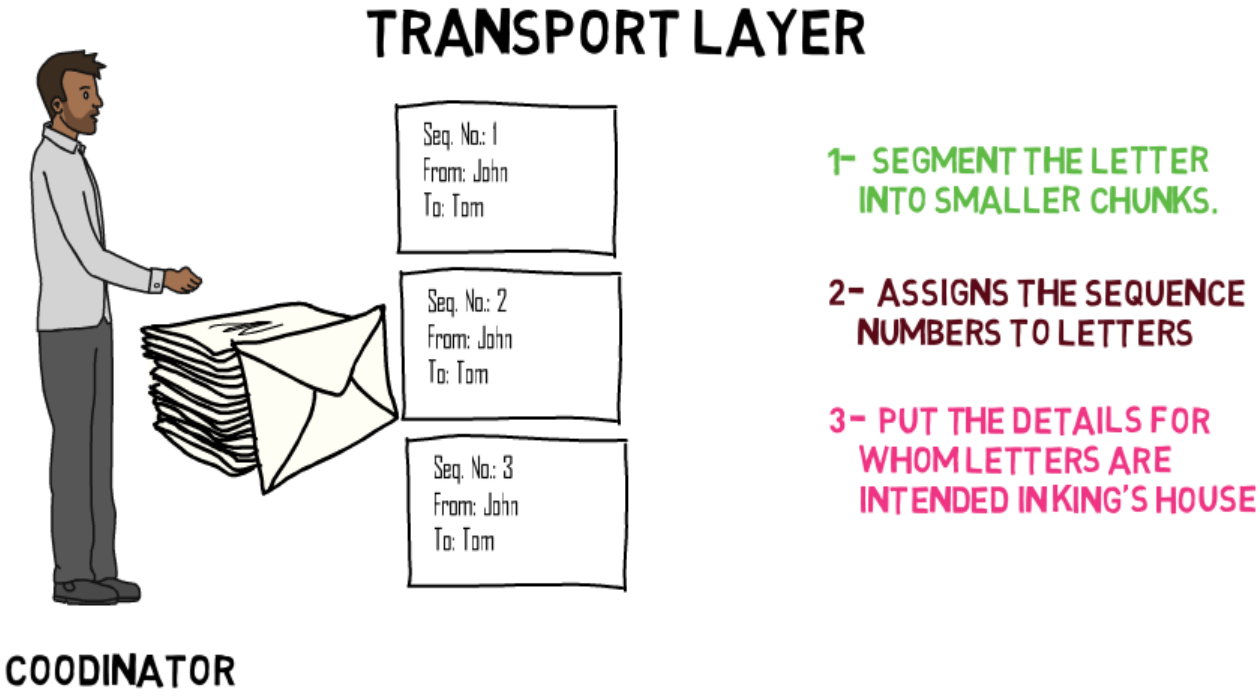
The minister will write down all the details and then convert the Arabic language to French so that French people could understand, then he will encrypt the letter to maintain secrecy and compress the content as much as possible for easy delivery.



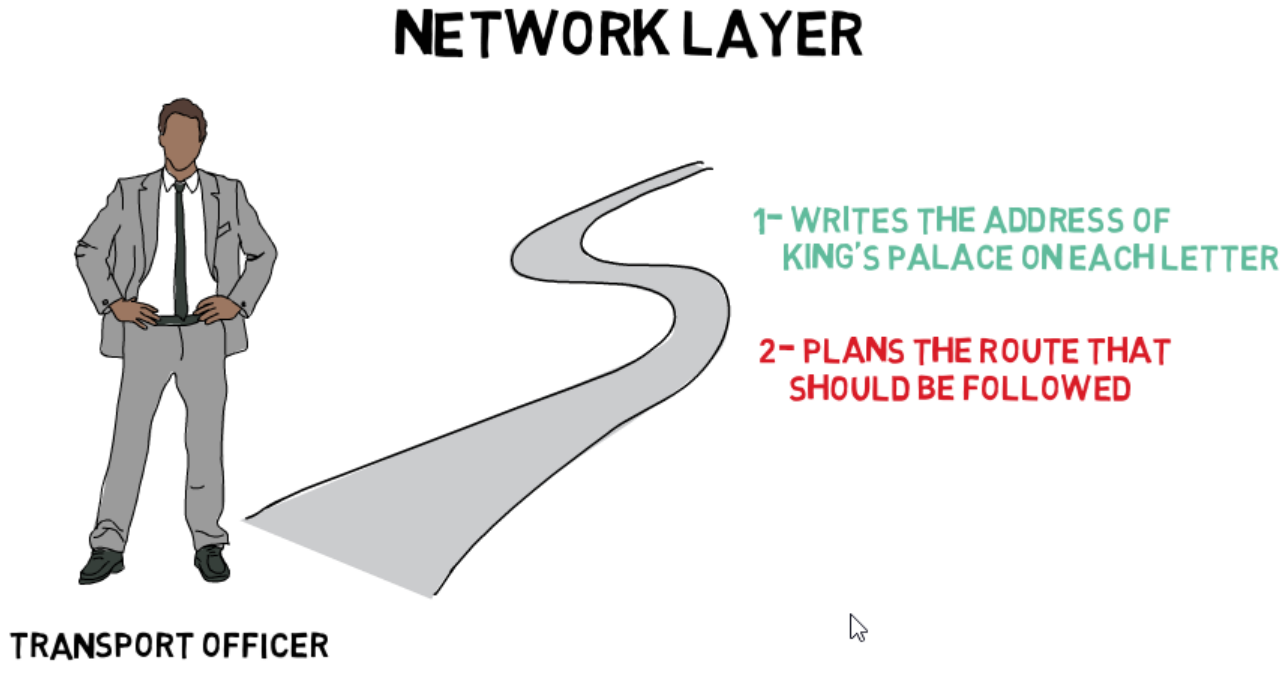
As Secretory knows the importance of this letter so he called at French palace and tell the secretory of French state that we are sending you a very important letter so please let us know as soon as you receive that and hence started a session, and Secretory at French palace agreed that they will acknowledge as soon as they receive the letter.



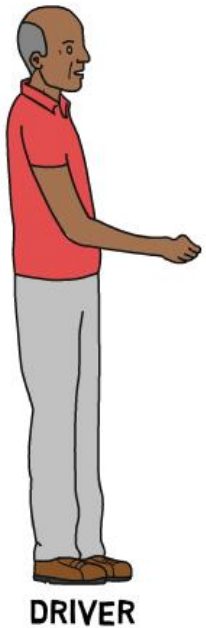
The coordinator will break down this large letter to smaller chunks and attach sequence no. for identification of order and write down the name of intended receiver at French palace on this letter.



Now transport officer will decide the route that should be followed and writes down address of French palace on letter and call one of his driver and tell him the route to follow and pass him the letter.



Driver is now responsible for error free delivery of this letter . This driver is assigned to deliver letter to just at specific point not at the ultimate end.

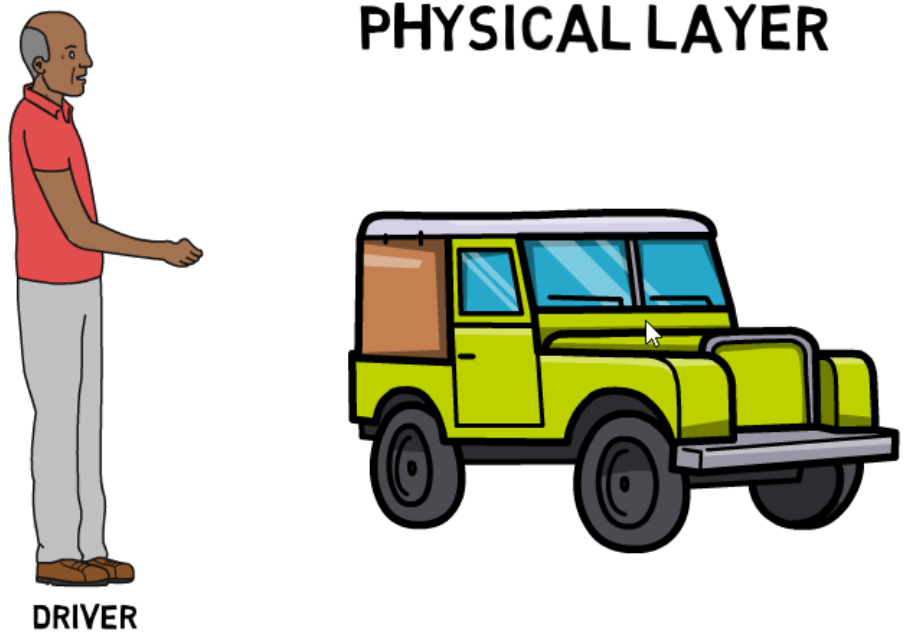


DATA LINK LAYER

1- ENSURES CORRECT DELIVERY OF LETTER

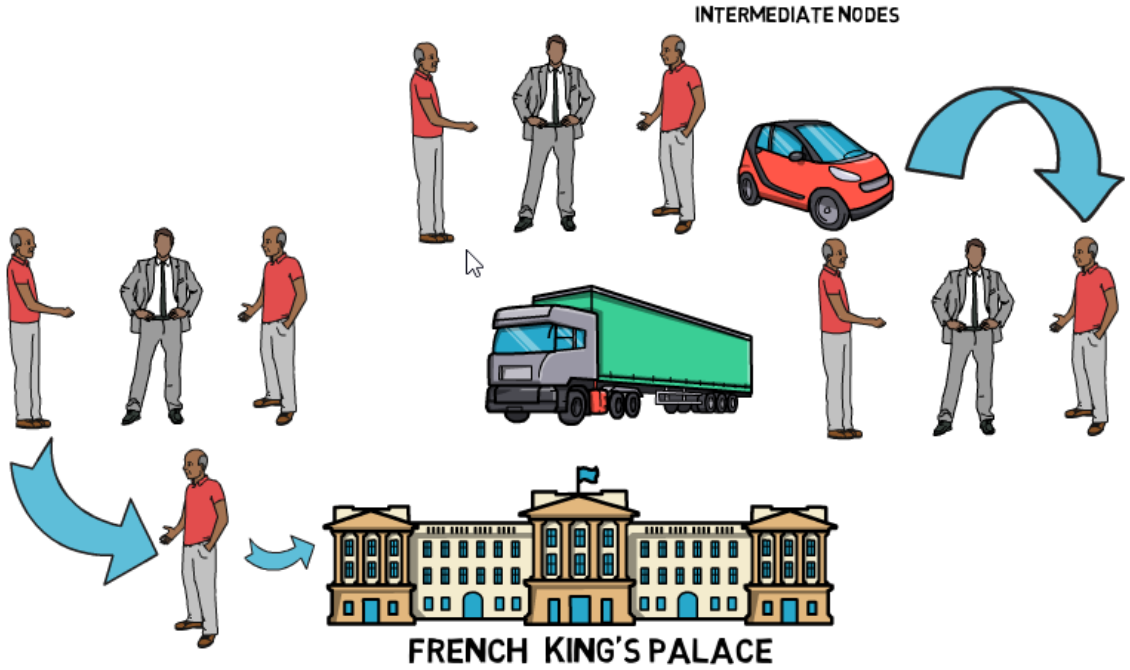
1- THIS DRIVER IS NOT SUPPOSED TO DELIVER THE LETTER TO LAST DESTINATION I.E FRENCH KING'S PALACE

Driver will now choose a vehicle and put this letter on it and deliver it to next transport officer.

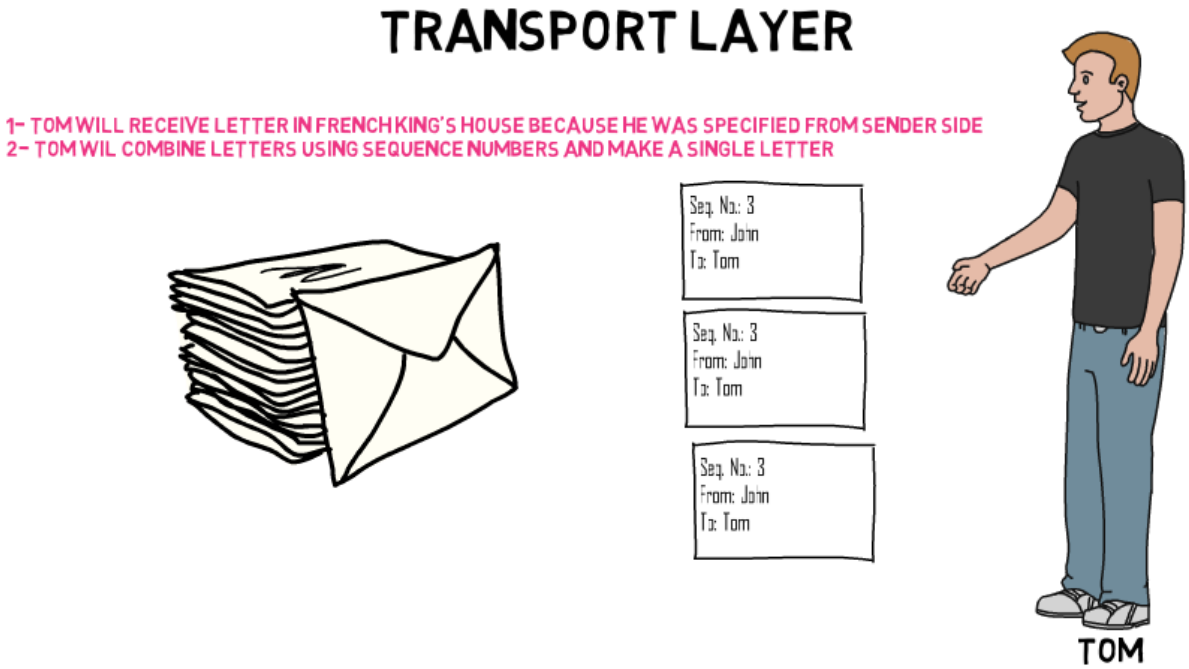


Receiver Side

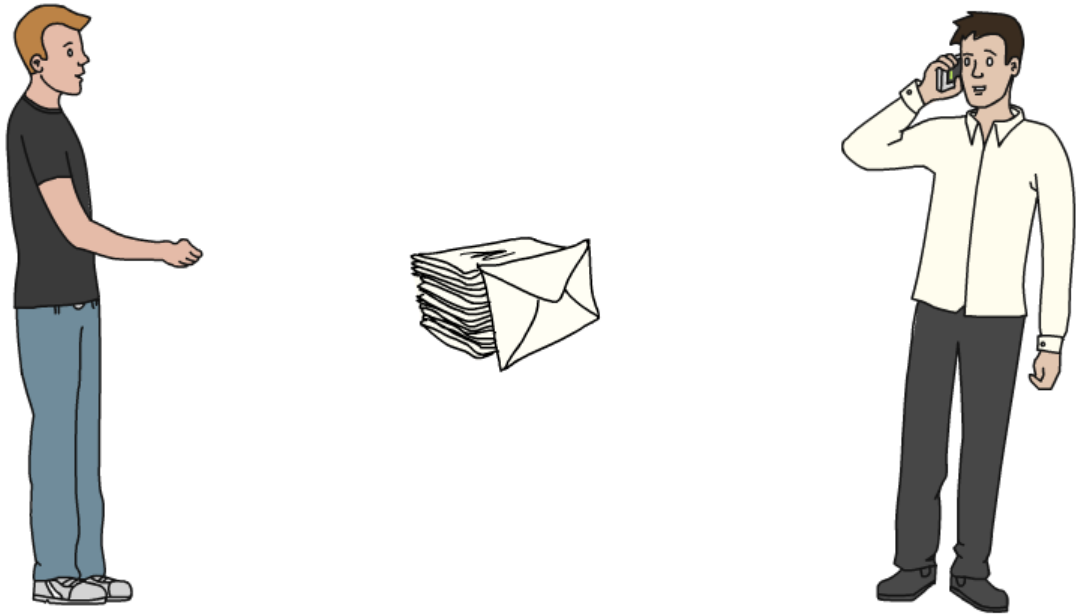
The lower three layers are responsible for physical delivery of letter, and the first layer that works inside French palace at receiver end would be transport layer



The first person who receives letter inside French palace is Co-coordinator. He accepts the letter and combined them using sequence numbers and made them a single unit.



Now, Secretary will acknowledge Arab's Secretary that they have received the letters

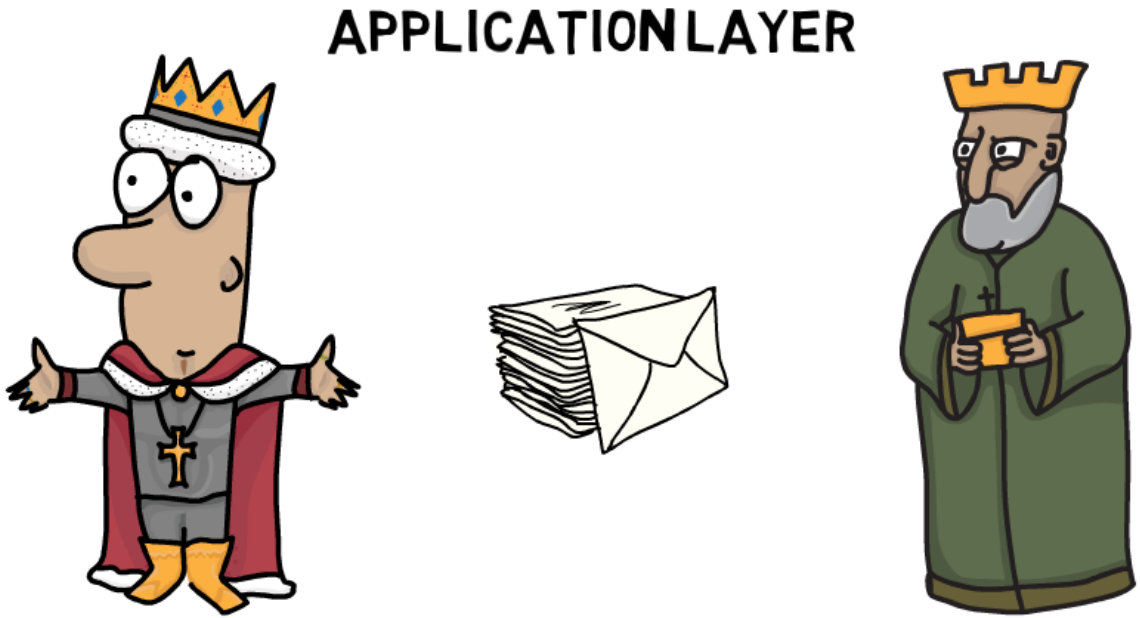


Minister will receive the letter and will confirm that the language format is French , then he will decrypt and decompress the letter

PRESENTATION LAYER

1- DECOMPRESS
2- DECRYPT
3- CHECK THE LANGUAGE / FORMAT IS UNDERSTANDABLE

Once all done he will provide the letter to king of France.



Physical Layer (Layer 1)

It is responsible for the actual physical connection between the devices

Characteristics

Bit synchronization:

Bit rate control:

Physical topologies:

Transmission media:

Why OSI Model

Data Link Layer (DLL) (Layer 2)

- Logical Link Control
- Medium Access Control

Responsible for the node to node delivery of the message

Characteristics

Framing:

Physical addressing:

Error control:

Flow Control:

Access control:

Network Layer (Layer3)

It is responsible for the transmission of data from one host to the other located in different networks

Routing:

Logical Addressing:

Transport Layer (Layer4)

It is responsible for the End to End delivery of the complete message.

Segmentation and Reassembly:

Service Point Addressing:

Session Layer (Layer5)

It is responsible for establishment of connection, maintenance of sessions, authentication and also ensures security.

Session establishment, maintenance and termination :

Synchronization :

Dialog Controller :

Presentation Layer (Layer6)

The data from the application layer is extracted here and manipulated as per the required format to transmit over the network

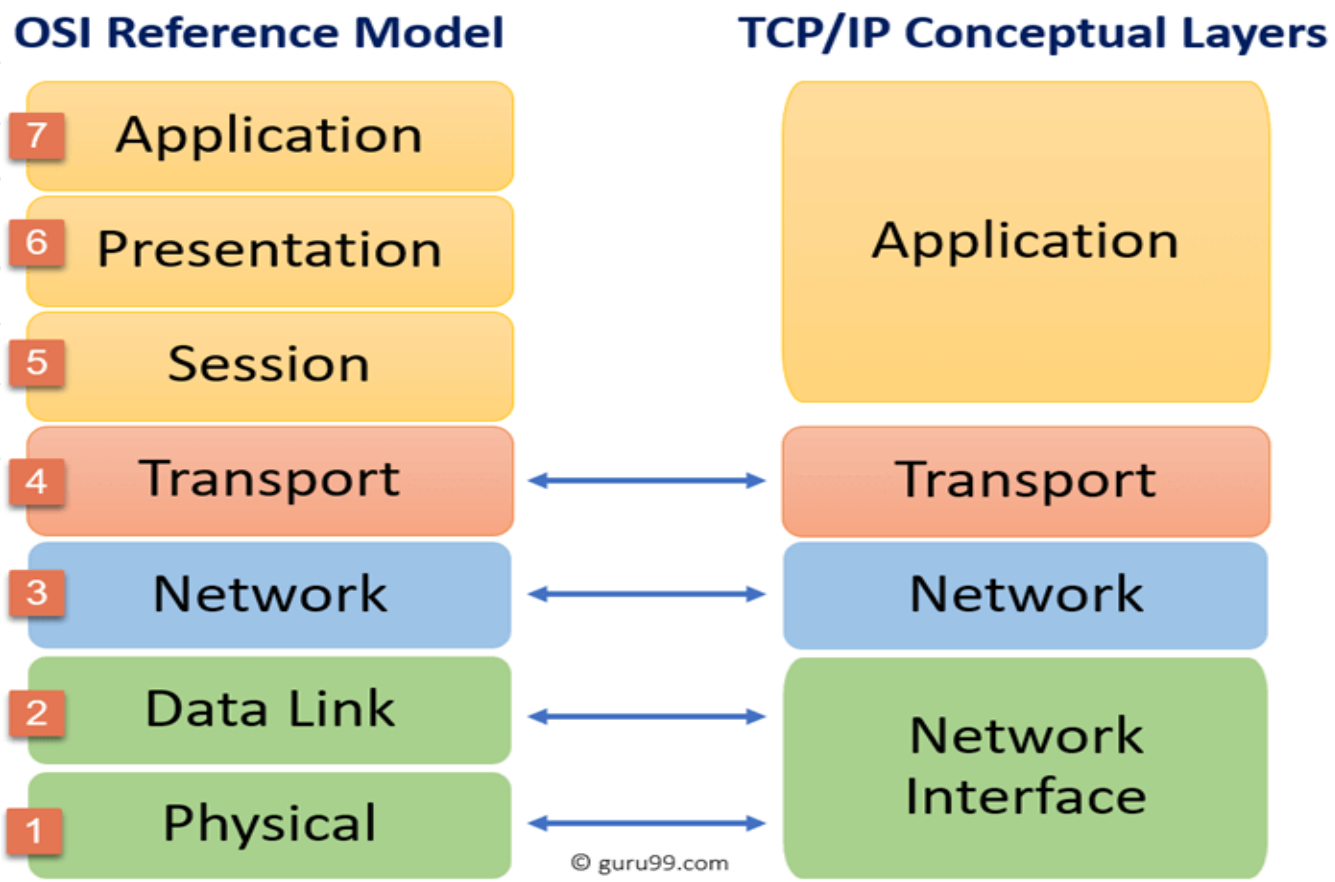
Translation :

Encryption/ Decryption :

Compression :

Application Layer (Layer7)

Applications produce the data, which has to be transferred over the network.


OSI Reference Model
TCP/IP Conceptual Layers
7 Application
6 Presentation
5 Session
4 Transport
3 Network
2 Data Link
1 Physical
Application
Transport
Network
Network Interface
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OSI	TCP/IP
It has 7 layers	It has 4 layers
OSI is a generic, protocol independent standard, acting as a communication gateway between the network and end user.	TCP/IP model is based on standard protocols around which the Internet has developed. It is a communication protocol, which allows connection of hosts over a network.
In OSI model the transport layer guarantees the delivery of packets.	In TCP/IP model the transport layer does not guarantees delivery of packets. Still the TCP/IP model is more reliable.
OSI is a reference model around which the networks are built. Generally it is used as a guidance tool.	TCP/IP model is, in a way implementation of the OSI model.

TCP/IP

5	Process & Applications	Provide applications services to users and programs FTP.TFTP,SMTP,DNS,
4	Transport	Handles data-consistency functions, i.e., provides a reliable byte stream between two nodes on a network. TCP and UDP work at this level
3	Internet (sometimes called the Network Layer)	Provides network addressing and routing, and does so in such a way as also to provide a common address space across multiple lower-level protocols. This makes possible the interconnection of networks that characterizes the Internet. The IP protocol operates at this level. ARP,RARP,ICMP,IGMP
2	Data Link Layer	This layer contains whatever IP will run over, e.g., Ethernet, token-ring, and Fiber Distributed Digital Interface (FDDI) networks. Individual network protocols, e.g., Ethernet, work at this level.
1	Physical	Not really part of the model, since TCP and IP, as protocols, deal with software rather than hardware. This layer is generally thought of as referring to all hardware under the Network Layer.

“ **Quotations are commonly printed as a means of inspiration and to invoke philosophical thoughts from the reader.**