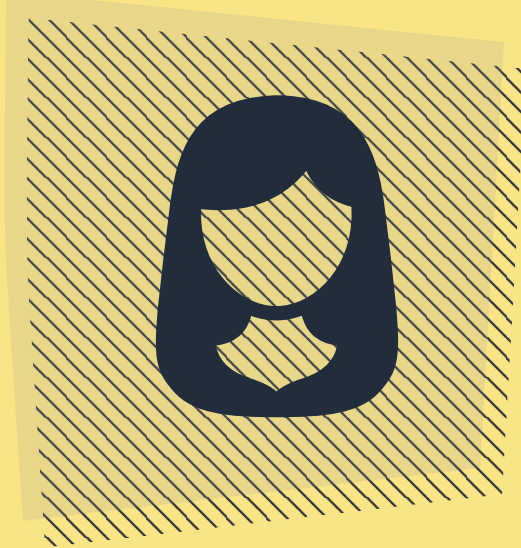


# Present Delivery and OSI Model

The OSI Model stands for Open Systems Interconnection Model, which is a reference model describes the functions of a networking or telecommunication system. It has seven layers, and each layer has a unique specific job. My final project will illustrate these seven layers by using a real world example — buying and delivering a present, starting from top (Application Layer) to bottom (Physical Layer).

## Storyline



Ling is my best friend, and her birthday is on Feb.20. I bought her a coffee table from Stanley Furniture Company through taobao.com as present and planned to ship to her house in Beijing.



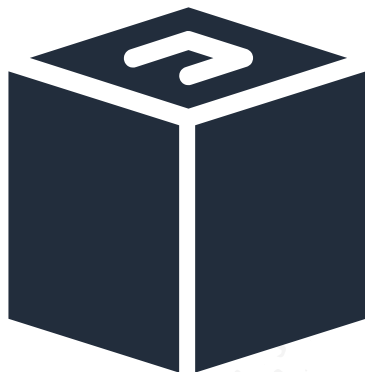
## 7. Application Layer



I was browsing Taobao App for a birthday present and finally purchased a coffee table.

**Application layer** (Taobao App) is where the user is taking actions and interacting with a software application interface. It serves as a window for both users and applications running on a local machine to be able to access the network services available to it.

## 6. Presentation Layer



After receiving my online order, a worker dismantled the table and wrapped all the pieces together with instruction book into a shipping box.

**Presentation Layer** ensures that data/command is readable by and meaningful to receiving system. Part of this process is being able to act as a translator. Specifically, the presentation layer will take the data from the application layer and format it into a common format that is recognized by the network and can be sent across the network. Beyond the translation, the presentation layer is responsible for data encryption and data compression which reduces the number of bits needed to transmit and data. In this example, the coffee table has been converted into a common format for delivery. Instruction book ensures that the receiver understand how to use the table.

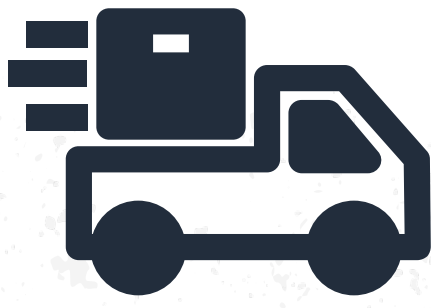
## 5. Session Layer



The worker called courier A to pick up the package. The courier A wrote down Ling's (the receiver) name, address, and contact number on shipping label.

**Session layer** builds a "mechanism" for establishing, maintaining, and terminating an open communication line between the sender and the receiver. In this case, when the courier A was creating the shipping label, a session between the warehouse (the sender) and Ling's house (the receiver) was opened. Once the package arrived and was opened by Ling, this session was brought to an end.

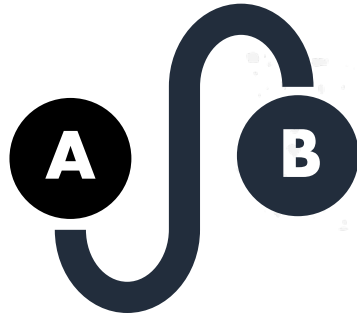
## 4. Transport Layer



Since I chose Next Day Delivery, the courier A drove to the airport right away. The package was scanned to see if it is restricted and prohibited item.

**Transport layer** defines how package is sent and provides validation and firewall security. Transmission Control Protocol (TCP) is the most common example of a Transport Layer, which is built on top of the Internet Protocol (IP).

## 3. Network Layer



The package was collected and sorted to route to Beijing through the best/fastest path.

**Network Layer** seeks for the best path to deliver data and provides logical addressing and path selection. In order to support routing, the Network layer maintains logical addresses such as IP addresses for devices on the network.

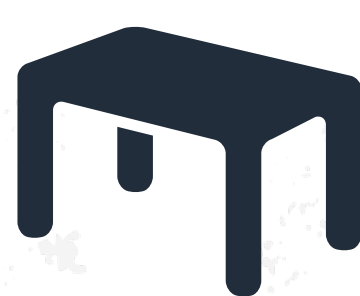
## 2. Data Link Layer



The package arrived to Beijing Airport. With Ling's address and contact information, the courier B delivered and left it at Ling's front door.

**Data Link Layer** provides error-free transmission from one node to the next over the physical media. It also defines how bits are organized and how access to the network is controlled. In the case of package delivery, the courier B served as data-link layer and provided point-to-point transit.

## 1. Physical Layer



Ling got back home. A local installation worker from Stanley Furniture Company came to assemble the table. Now Ling is ready to enjoy her brand new coffee table.

**Physical Layer** provides physical media and its encoding. This layer receive frame from data link layer and convert them in bits. It loads these bits on actual communication media. In order to define the method to encode the ones and zeros, the physical layer has to also define how the bits are placed on the media, and different ways to place bits, on different media depending on the type of media is used.