

To provide all these mandatory functionalities we need OSI model

OSI model (Open System Interconnect)

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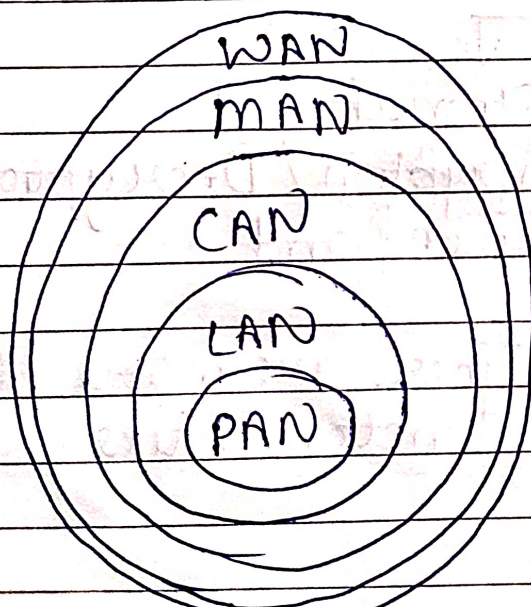
## # OSI model layers

OSI model is a layered architecture. It has following 7 layers

Application layer → presentation layer  
Session layer  
Transport layer  
Network layer  
Data link layer  
Physical layer

## # Types of Computer Network

1. PAN → Personal Area Network
2. LAN → Local Area Network
3. CAN → Campus Area Network
4. MAN → Metropolitan Area Network
5. WAN → Wide Area Network



|                     | PAN         | LAN                        | CAN                    | MAN                | WAN                 |
|---------------------|-------------|----------------------------|------------------------|--------------------|---------------------|
| Technology          | Bluetooth   | Ethernet/<br>wifi          | Ethernet               | ATM                | Dial Up             |
| Range               | 1-100 m     | upto 2 km                  | 1-5 km                 | 5-50 km            | above 50 km         |
| Transmission speed  | very high   | very high                  | high                   | average            | low                 |
| Area                | within room | within office/<br>building | within uni<br>iversity | within City        | within<br>countries |
| Ownership           | private     | private                    | private                | private/<br>public | private/<br>public  |
| Maintenance         | very easy   | easy                       | moderate               | Difficult          | most<br>difficult   |
| Error Rate/<br>cost | low         | low                        | moderate               | high               | very high           |

## # TCP/IP Protocol suite.

|                          |                |             |
|--------------------------|----------------|-------------|
| Application presentation | Application    | Application |
| Session layer            |                |             |
| Transport                | Transport      | Transport   |
| Network                  | Internet       | Network     |
| Data link                | Network access | Datalink    |
| Physical                 | layer          | physical    |
| 7 Layer                  | 4 Layer        | 5 Layer     |