**ASSIGNMENT # 2**

**(Computer and Communication Networks)**

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* **OSI Model**
* Application layer.
* Presentation layer.
* Session layer.
* Transport layer.
* Network layer.
* Data link layer.
* Physical layer.

**APPLICATION LAYER:**

An **application layer** is an abstraction **layer** that specifies the shared communications protocols and interface methods used by hosts in a communications network.

**PRESENTATION LAYER:**

The **presentation layer** is the lowest **layer** at which application programmers consider data structure and **presentation**, instead of simply sending data in the form of datagrams or packets between hosts.

**SESSION LAYER:**

Session layer is responsible for establishing, maintaining and releasing the sessions between end-systems.

**TRANSPORT LAYER:**

Establish end to end error and flowchart.

**DATA LINK LAYER:**

Establish framework and synchronizes it in a network.

**NETWORK LAYER:**

Establish and find route for source and destination.

**PHYSICAL LAYER:**

Deals with raw stream of data and bits.

* **TCP/ IP Suite**
* Application layer
* Data-Link layer.
* Network layer.
* Transport layer.
* Physical layer.

**DIFFERENCE BETWEEN OSI AND TCP/IP:**

|  |  |
| --- | --- |
| **TCP/IP** | **OSI** |
| **TCP**/**IP** is a standard protocol used for every network including the Internet | **OSI** is not a protocol but a reference model used for understanding and designing the system architecture |
| **TCP**/**IP** is a four-layered model | **OSI** has seven layers. |
| **TCP**/**IP** is Tangible | **OSI** is intangible. |

* **IP Address / MAC Address/Port**

**IP ADDRESS:** a unique string of numbers separated by full stops that identifies each computer using the Internet Protocol to communicate over a network. An **IP address** is written in "dotted decimal" notation, which is 4 sets of numbers separated by period each set representing 8-bit number ranging from (0-255). An **example** of IPv4 **address** is 216.3.128.12, which is the **IP address** previously assigned to iplocation.net. An **IP address** is the **address** of the layer-3 **IP** protocol. Different layer-3 protocols use different addressing, e.g. **IPv4**, IPX, and IPv6 each have different addressing.

**MAC ADDRESS:** A **MAC address** is a hardware identification number that uniquely identifies each device on a network. For **example**, consider a network adapter with the **MAC address** "00-14-22-01-23-45.".

* **Explore TCP and UDP**

**TCP** or parts of it are used in the File Transfer Protocol (FTP) and the Simple Mail Transfer Protocol (SMTP), both of which do not use IP. ... If a datagram is corrupted or lost, it is usually **TCP** (not the applications in the higher layers) that handles the retransmission. **TCP** is not a piece of software.

Voice over IP (VoIP), online games, and media streaming. Speed – **UDP's** speed makes it useful for query-response protocols such as DNS, in which data packets are small and transactional.