TCP vs UDP

⇒ TCP (Transmission control protocol) and UDP (User datagram protocol) are two fundamentals protocols in the internet protocols suite that enable data communication over the internet.

TCP (Transmission control protocol) :-

1) connection-oriented :- Establishes a connection before data transfer.
2) Reliable :- Ensures data delivery and reassembles packets in order.

3) Error-checked :- Detects and retransmits lost or corrupted packets.
4) ordered :- Delivers packets in the order they were sent.

Examples :-
- File transfers (FTP, SFTP)
- Email (SMTP)
- web browsing (HTTP)
- Remote access (SSH).

UDP (User Datagram Protocol).
1) connectionless :- No connection establishment before data transfer.
2) unreliable :- Does not guarantee data delivery or order.
3) Error-tolerant :- No retransmission of lost or corrupted packets.
4) Faster :- Generally faster than TCP due to lower overhead.

Examples :-
- online gaming (real-time communication)
- streaming media (video, audio).
- VoIP (Voice over Internet Protocol)
- DNS lookups.