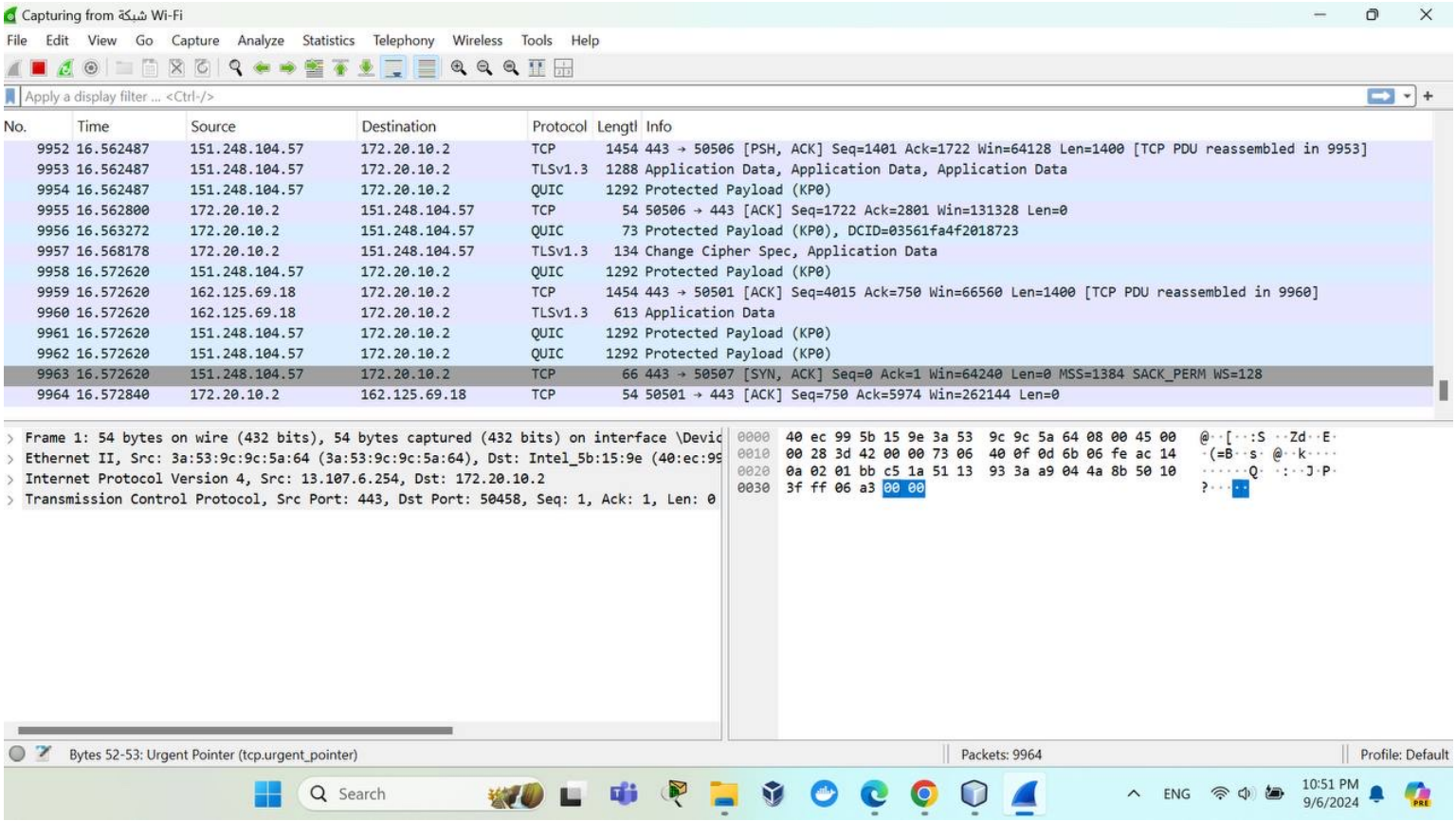
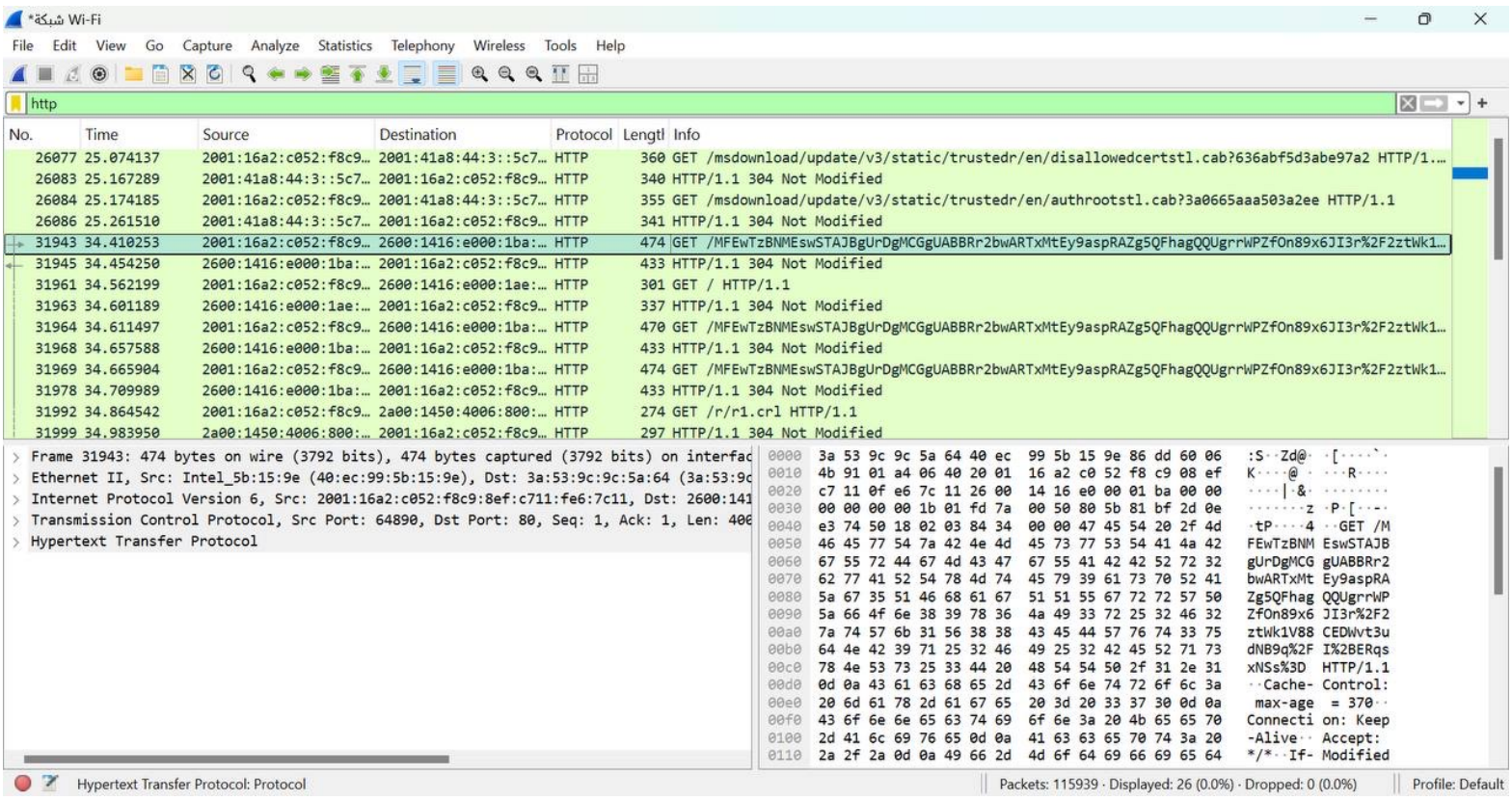
# Lab 1 :
# Part one :
# Task one : capturing HTTP TRAFFIC

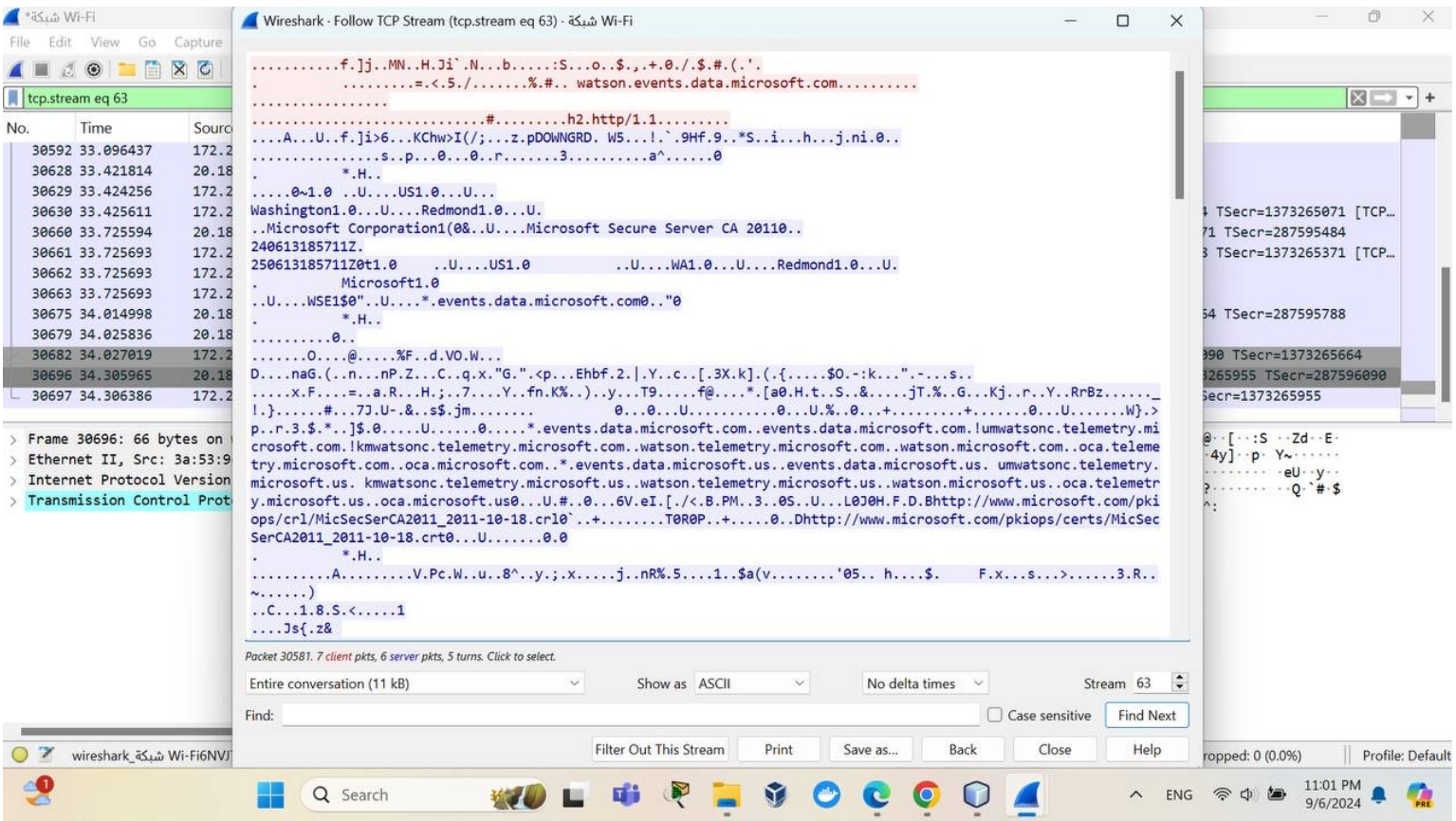



# Task 2: Fillter HTTP packets and analyze them

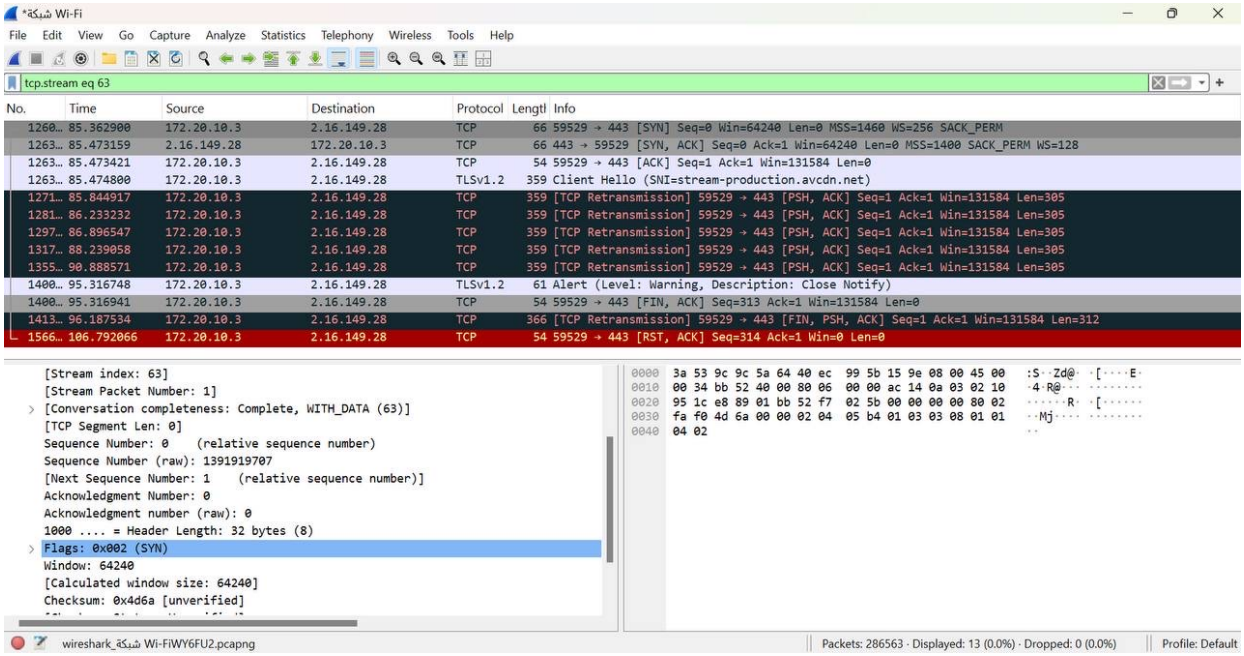


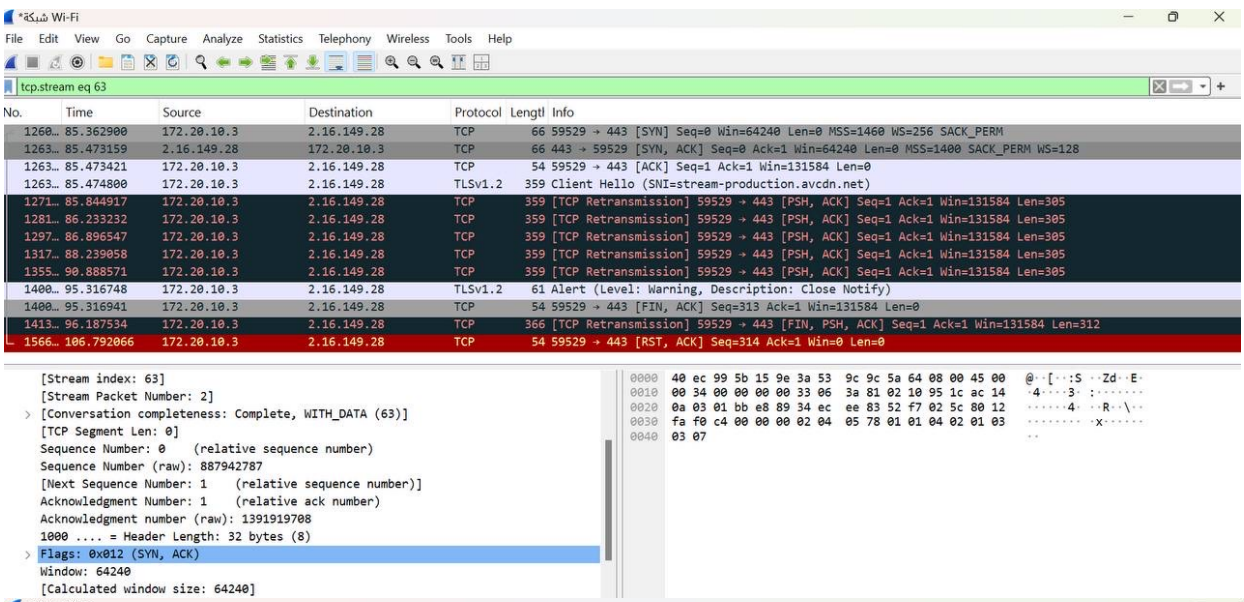
# Part 2: Analyzing TCP/IP traffics

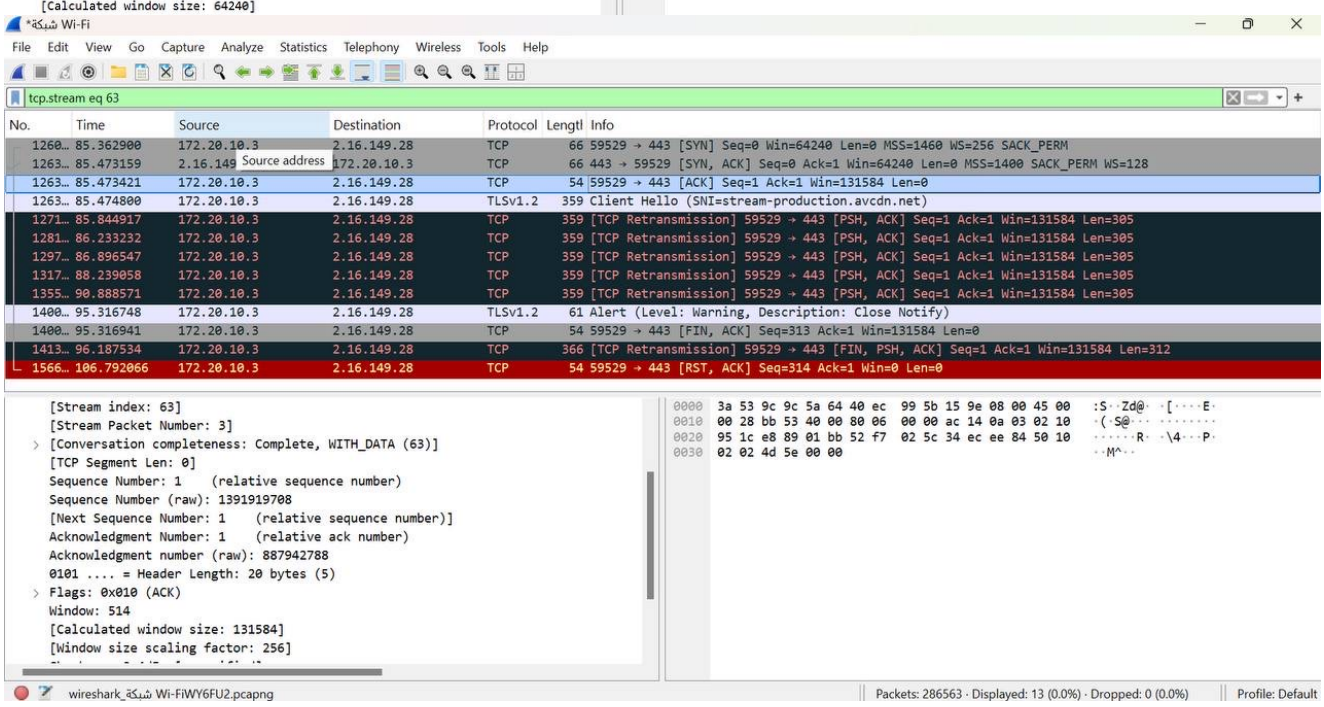
## Task 1: Fillter TCP packets



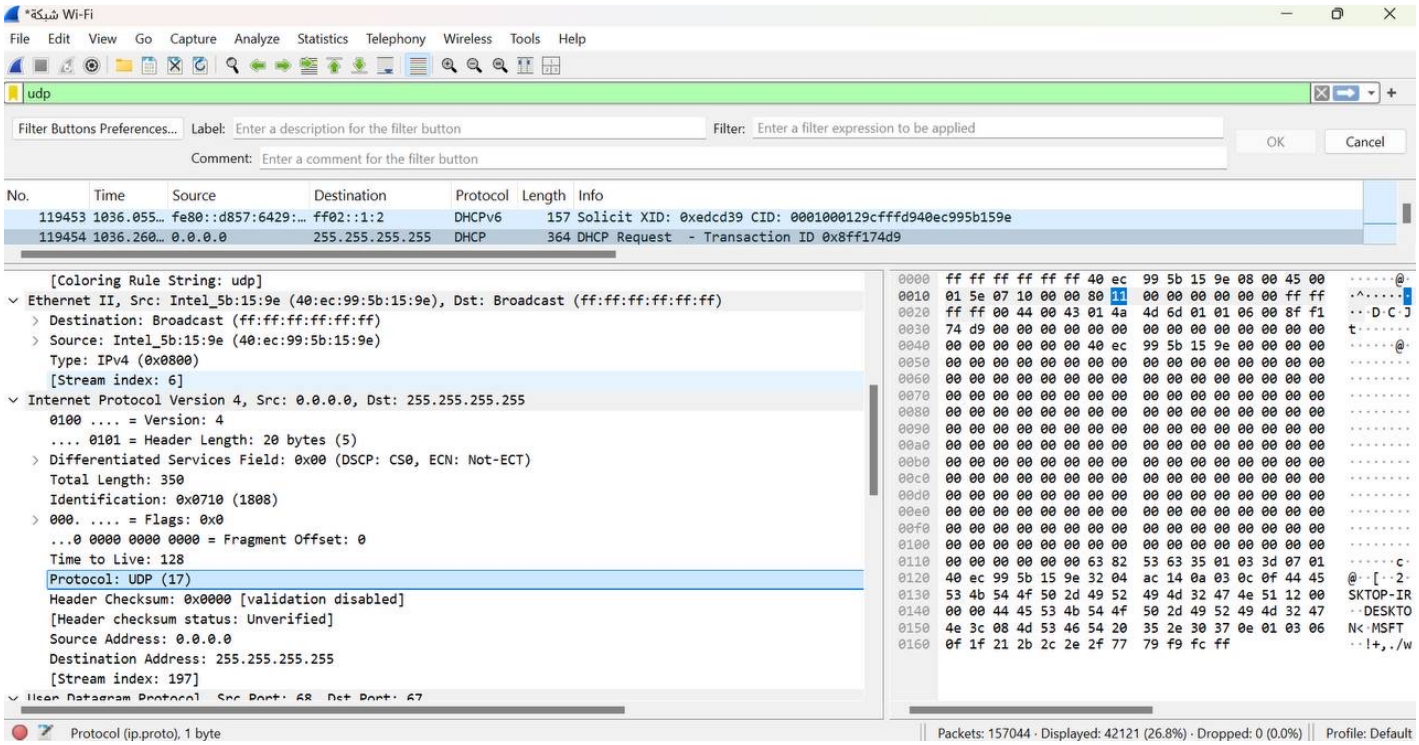
# Task 2: Analze TCP handshake and investigate Data and Termination



Task 2: Fillter and analysis UDP packets




Part 4 :

Reliability and Connection Establishment

Use TCP:

Reasons: Ensures a reliable connection with a three-way handshake and retransmissions, suitable for web browsing and email.

Use UDP:

Reasons: Faster, no connection setup, but less reliable. Ideal for live streaming and gaming.

Data Integrity and Ordering

Use TCP:

Reasons: Ensures data integrity and correct order with sequence numbers, perfect for file downloads and banking.

Use UDP:

Reasons: No guarantee of order or integrity. Faster but less

accurate, suitable for live broadcasts and online gaming.

Task 2: Use Cases and Performance of TCP and UDP

| TCP | UDP |
| --- | --- |
| Use Cases | |
| - Web browsing (HTTP/HTTPS) | - Real-time applications (VoIP, video streaming) |
| - Email (SMTP, IMAP, POP3) | - Online gaming |
| - File transfer (FTP, SFTP) | - DNS queries |
| - Remote administration (SSH) | - Broadcasting/multicasting (e.g., live video) |
| Performance | |
| - Reliable, ensures data delivery | - Fast, minimal latency |
| - Higher overhead due to connection setup, error checking, and flow control | - Low overhead, no connection setup |
| - Suitable for applications where data accuracy is crucial | - Suitable for time-sensitive applications where some data loss is tolerable |