**Part 4: Comparing TCP and UDP by filling in the following tables. Save your work (e.g., in an MS Word document), and upload it to your online git repo.**

**Task 1: Fill in the following table and provide reasons.**

|  | **TCP or UDP** | **Reasons** |
| --- | --- | --- |
| Reliability and Connection Establishment | |  | | --- | | TCP | | TCP is connection-oriented, meaning it establishes a connection before data transfer. It uses a three-way handshake (SYN, SYN-ACK, ACK) to ensure reliable communication. |
| Data Integrity and Ordering | TCP | TCP guarantees data integrity and order. It uses sequence numbers and acknowledgment mechanisms to ensure packets arrive correctly and in order. |

**Task 2: Identify the use Cases and Performance of TCP and UDP.**

|  | **TCP** | **UDP** |
| --- | --- | --- |
| Use cases | Web browsing, file transfers, email (e.g., HTTP, FTP, SMTP) | Streaming, gaming, DNS queries, VoIP (where speed is prioritized over reliability) |
| Performance | Slower, due to connection establishment and error correction | Faster, due to connectionless, minimal protocol overhead |