

SE2020 – Web and Mobile Technologies
Department of Information Technology, Faculty of Computing
Year 2 Semester 2 (2026)
Tutorial 1

Part 1: Client–Server & Protocol Analysis

Task 1 – Request–Response Reasoning

A user types www.google.com in the browser. **Explain in sequence** (minimum 5 steps):

1. Role of client
2. Protocol used
3. Server action
4. Type of response
5. Why does the server cannot initiate communication

Task 2 – Protocol Selection Scenario

For each scenario, **justify** the most suitable protocol:

Scenario	Protocol	Reason
Secure login page		
Uploading large files		
Sending emails		
Live chat application		

Part 2: Networking & IP Addressing

Task 3 – Network Design Reasoning

Asiri Hospitals has:

- 3 hospitals in Colombo
- 1 data center in another country

Identify:

1. Network type used **within one hospital**
2. Network type connecting hospitals
3. Network type connecting the data center
4. **Justify** each choice

Task 4 – IP Address Analysis

Given IP:

192.168.10.25

1. Why is this IP not routable on the internet?
2. What happens to the IP if the device moves to another network?
3. Identify **network part** and **host part** (assume /24)

Part 3: DNS & URL Resolution

Task 5 – DNS Resolution Flow

Explain how DNS resolves **www.example.com** to an IP address.

Must include:

- Role of DNS server
- Why DNS is required instead of IP usage
- What happens if DNS fails

Task 6 – URL Decomposition

Analyze the URL:

<https://api.example.com:443/users?id=10>

Identify:

- Protocol
- Subdomain
- Port
- Resource path
- Explain **why port 443 is optional here**

Part 4: HTML Structure & Data Representation

Task 7 – Structured HTML Design

Design an HTML page that represents:

- SLIIT Student's information (name, IT number, email, Address, phone number)
- Subjects and grades
- A title and section headings

Constraints:

- Use **semantic structure**
- Use at least:
 - 1 table
 - 1 unordered list
 - Proper headings

Write **only the <body> section** (No need of the header)