

Exercise 1: Understanding URLs and Client-Server Model

1. Explain the purpose of a URL (Uniform Resource Locator).
2. Describe the two main sides involved in web communication in the client-server model.
3. Define the protocol used for communication between clients and servers.
4. what is the name of the service that converts the domain name to IP address.

Exercise 2: HTTP vs. HTTPS

1. Differentiate between HTTP and HTTPS.
2. Explain the significance of encryption in HTTPS.
3. Discuss why using HTTPS is essential for secure online interactions.

Exercise 3: Request and Response

1. Describe the main components of a request sent from a client to a server.
2. Explain the information typically included in a server's response to a client request.
3. **Request Example:** a sample HTTP request in the following format:

```
GET / HTTP/1.1  
Host: www.example.com
```

explain the example and each line means

4. **Response Example:** a sample HTTP response in the following format:

```
HTTP/1.1 200 OK  
Date: Fri, 26 Aug 2023 10:00:00 GMT  
Content-Type: text/html; charset=UTF-8
```

explain the example and each line means

5. Define HTTP status codes and provide examples of their meanings.

Exercise 4: Full Stack Development Overview

1. Explain the concept of full stack development.
2. List the two main components of full stack development and briefly describe their roles.
3. Discuss the advantages of being a full stack developer in terms of project understanding and versatility.

Exercise 5: The MERN Stack

1. Define the MERN stack and list its components.
2. Briefly explain the role of each component (MongoDB, Express, React, Node.js) in the stack.
3. Discuss why the MERN stack is popular for building modern web applications.

Exercise 6: Browser Inspection Tools

1. Define browser inspection tools and their purpose.
2. Explain how developers use browser inspection tools to diagnose and debug web applications.
3. Discuss the importance of browser compatibility testing using inspection tools.

Exercise 7: Front-end Development

1. Define front-end development and explain its main focus.

Exercise 8: back-end Development

1. Define back-end development and explain its main focus.