Summary of Differences Between HTTP and HTTPS

HTTP (HyperText Transfer Protocol):

•**No Encryption:** Data is transmitted in plain text, making it vulnerable to eavesdropping.

•**Security Risk:** Sensitive information (passwords, credit card details...) can be intercepted by someone.

•**Use Case:** Suitable for non-sensitive data, such as reading blog posts or news articles.

HTTPS (HTTP Secure):

•**Encryption:** Uses SSL/TLS to encrypt data, ensuring it cannot be read by anyone but the part communicating using session keys.

•**Data:** Integrity and Authenticity: Protects against tampering and impersonation.

•**Use Case:** Essential for websites handling sensitive data, such as banking, e-commerce...

Structure of an HTTP Request and Response

HTTP Request Structure:

Request Line:

- Method (GET, POST...)
- Path (/index.html...)
- HTTP Version (ex :HTTP/1.1)

Headers:

- Key-value pairs providing metadata (ex :Host: www.example.com, User-Agent: Mozilla/5.0).

Body (optional):

- Contains data sent to the server (ex :form data in a POST request).

HTTP Response Structure:

Status Line:

- HTTP Version (e.g., HTTP/1.1)
- Status Code (e.g., 200 OK)
- Status Message (e.g., OK)

Headers:

- Key-value pairs providing metadata (e.g., Content-Type: text/html, Content-Length: 1234).

Body (optional):

- Contains the requested resource (e.g., HTML content, JSON data).

Common HTTP Methods

Method	Description	Use Case
GET	Retrieves data from the server.	Fetching a web page or data from an API.
POST	Sends data to the server for processing.	Submitting a form or uploading a file.
PUT	Updates or replaces an existing resource.	Updating a user profile or replacing a file.
DELETE	Deletes a specified resource.	Removing a user account or deleting a file.

Common HTTP Status Codes

Status Code	Description	Scenario
200 OK	The request was successful.	Successfully loading a webpage.
301 Moved Permanently	The resource has been permanently moved.	Redirecting from an old URL to a new one.
404 Not Found	The requested resource is missing.	Accessing a page that doesn't exist.
500 Internal Server Error	The server encountered an error.	Server-side script failure or misconfiguration.
503 Service Unavailable	The server is temporarily unavailable.	Server undergoing maintenance or overloaded.