**CTF Challenge: HTTP in Detail**

**HTTP in Detail: The Foundation of Web Communication**

Hypertext Transfer Protocol (HTTP) is the cornerstone of communication on the World Wide Web. It establishes the rules and standards for how data travels between web servers and web browsers. Let's delve deeper into the intricacies of HTTP:

**Core Concepts:**

* **Client-Server Model:** HTTP employs a client-server model. Web browsers act as clients, initiating requests for information from web servers that store website content.
* **Requests and Responses:** Communication between client and server occurs through requests and responses. The client sends an HTTP request specifying the desired information (e.g., a web page), and the server responds with an HTTP response containing the requested data or an error message.
* **Methods:** HTTP requests utilize various methods to specify the desired action on the server. Common methods include:
  + **GET:** Retrieves information from a server (e.g., loading a webpage).
  + **POST:** Submits data to a server (e.g., filling out a form).
  + **PUT:** Updates existing data on a server.
  + **DELETE:** Removes data from a server.
* **Headers:** Both requests and responses include headers containing additional information like the type of data being transferred, the encoding format, and authentication credentials (if required).
* **Body:** The request body (optional) can contain data the client sends to the server, such as form data or file uploads. The response body carries the actual content requested by the client (e.g., HTML code, images).
* **Stateless Protocol:** HTTP is a stateless protocol, meaning each request-response exchange is treated as an independent transaction. The server doesn't maintain information about previous interactions with the client.

# **Capture the Flag (CTF) Challenges**

**Flag 1. In the client-server model of HTTP, web browsers act as what?**

Answer: Clients

**Flag 2. An HTTP request uses the GET method to retrieve information from a web server. True/False?**

Answer: True

**Flag 3. The body of an HTTP request might contain what kind of data being sent to the server?**

Answer: Form/Upload

**Flag 4. Since HTTP is stateless, each request-response exchange is treated as an independent what?**

Answer: Transaction

**Flag 5. DNS translates user-friendly domain names into numerical IP addresses, which are used in the URL of an HTTP what?**

Answer: Request