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CSC 105 Assignment

1. Research on HTTP and HTTPs, stating what each status code represents and when we can possibly have each.

HTTP stands for Hypertext Transfer Protocol. It is a communication protocol that is used to transfer files (such as HTML pages, images, and videos) over the internet. HTTP is a stateless protocol, which means that each request from a client is treated independently of any other requests that the client may have made in the past.

HTTPS (Hypertext Transfer Protocol Secure) is a secure version of HTTP that uses Transport Layer Security (TLS) to encrypt all traffic between the client and server. This makes HTTPS ideal for transmitting sensitive data, such as credit card numbers and passwords.

HTTP status codes are three-digit numbers that are returned by web servers to indicate the status of an HTTP request.
Some common HTTP status codes include:

- **200 OK** - The request was successful.
- **301 Moved Permanently** - The requested resource has been moved to a new location.
- **403 Forbidden** - The client does not have permission to access the requested resource.
- **404 Not Found** - The requested resource does not exist.
- **500 Internal Server Error** - The server encountered an unexpected error while processing the request.

When we can possibly have each HTTP status code:

- **100-199 Informational:** These codes are typically used when the server is processing a large request and needs to send the client updates on the progress.
- **200-299 Successful:** These codes are returned whenever the server is able to successfully process the client's request.
- **300-399 Redirections:** These codes are returned when the server needs the client to take further action to complete the request. For example, a server might return a 301 Moved Permanently code if the requested resource has been moved to a new location.
- **400-499 Client Errors:** These codes are returned when the client makes a bad request. For example, a server might return a 404 Not Found code if the client requests a resource that does not exist.
- **500-599 Server Errors:** These codes are returned when the server encounters an unexpected error while processing the request. For example, a server might return a 500 Internal Server Error code if the database is unavailable.

2. Differentiate after a good explanation on Response and Request.

Request

A request is a message sent by a client to a server requesting specific information or action. The request contains information about the requested resource, such as its URL, and any other necessary data, such as authentication credentials or request parameters.

Response

A response is the message sent by the server in response to a request from a client. The response contains the requested information or the result of the requested action. The response also contains status information about the request, such as whether it was successful or not.

Differences between Request and Response

The main difference between a request and a response is the direction in which they are sent. A request is sent from a client to a server, while a response is sent from a server to a client.

Another difference is the purpose of each message. A request is used to request information or action from a server, while a response is used to provide the requested information or action back to the client.

3. Write short notes on HTML and Tags.

HTML and Tags

HTML, or HyperText Markup Language, is the standard markup language for creating web pages. It uses tags to define the structure and content of a web page. Tags are enclosed in angle brackets (< >) and come in pairs, with an opening tag and a closing tag. For example, the opening tag for a paragraph is and the closing tag is .

There are many different HTML tags, each with its own specific purpose. Some common tags include:

- <html> and </html>: Define the beginning and end of an HTML document.
- <head> and </head>: Contain information about the document, such as the title and meta tags.
- <title> and </title>: Define the title of the document.
- <body> and </body>: Contain the visible content of the document, such as text, images, and links.

HTML tags can also have attributes, which provide additional information about the tag. For example, the <img> tag has a src attribute, which specifies the URL of the image . When a web browser encounters an HTML document, it interprets the tags and displays the content of the document accordingly. For example, if the browser encounters the tag This is a paragraph of text. , it will display the text "This is a paragraph of text." on the screen.

HTML tags are essential for creating web pages. By using tags to define the structure and content of a web page, you can create pages that are informative, engaging, and easy to navigate.

4. Write short notes on client and server and types of server.

Client and Server

Clients and servers are two types of computer programs that work together to provide services to users. A **client** is a program that runs on a user's computer and sends requests to a server. A **server** is a program that runs on a remote computer and processes requests from clients. Client-server architecture is a common way to design computer networks. It is used in a wide variety of applications, including web browsing, email, file sharing, and database access.

Types of Servers

There are many different types of servers, each with its own specific purpose. Some of the most common types of servers include:

- Web servers: Web servers deliver web pages to users' web browsers.
- Email servers: Email servers send and receive email messages.
- File servers: File servers store and share files with users.
- Database servers: Database servers store and manage databases.
- Application servers: Application servers host and run web applications.
- Proxy servers: Proxy servers act as intermediaries between clients and other servers.
- DNS servers: DNS servers translate domain names into IP addresses.