

Assignment..

Date _____

Web Development:

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Difference between Session And Token:

A session is a server side method used to store user data after a user logs in. When a user enters login credentials the server creates a session and assigns a unique session ID to the user. This session ID is stored in the user's browser as a cookie, while the actual data remains on the server. Everytime the user sends a request, the browser sends the session ID so the server can recognize the user. Sessions usually expire when the browser is closed or after a certain time period.

A token is a client side authentication method in which server generates a token after successful login and sends it to the client. This token is stored on the user's device, such as in local storage or cookies. The token is then sent with every request to verify user's identity. Tokens do not require the server to store session data, making them stateless and more scalable.

The main difference between session and token is where the data is stored and how authentication is managed.

Sessions store user data on the server and require continuous server validation. Token store authentication data on the client side and are ideal for large, distributed systems. Sessions are best for traditional web applications, while tokens are more suitable for modern, API-based application.



JWT Token:

A JWT (Json Web token) is a secure, compact token used for authentication and authorization in web applications. It allows information to be safely transferred between a client and a server in the form of a JSON object.

It is commonly used when a user logs in to an application. After successful login, the server generates a JWT and sends it to the client. The client stores this token and sends it with every request to prove its identity.

It consists of three parts:

- 1) Header: contains information about the token type and algorithm used for encryption.
- 2) Payload: contains user data such as user ID, email and token expiration time.
- 3) Signature: ensures the token has not been changed.

In conclusion, JWT is a popular token-based authentication method that provides secure and efficient user verification without maintaining server-side sessions.

Norman's Algorithm:

Don Norman's algorithm explains how a user uses a system step by step. It shows that what happens in the user's mind when they try to complete a task on a website. First, the user decides a goal, such as filling a form. Then a user thinks about what action to take, like clicking a button or typing text. After that user performs the action on the system.

Once the action is done, the system gives a response.



Such as showing message or loading a new page. The user looks at the result, understands what happened and finally checks whether the goal is achieved or not. If the system is confusing the user feels difficulty.

Norman's algorithm helps designers make website simple and clear. In WPL, it is used to design easy navigation, clear buttons and helpful message so user can work without confusion.

KLM: The Key stroke level model is a simple method used to estimate how much time user takes to complete a task on website. It is mainly used to compare different interface designs and find which one is faster for user. In KLM, a task is broken into small actions such as pressing button, clicking a button. Each action has an average time value. By adding these times we can calculate the total time needed to complete a task.

KLM is used for skilled users who already know how to use the system and make no mistakes. It helps designers improve forms, menus and navigation by reducing unnecessary steps and making interfaces faster and more efficient.

Shneiderman Rules:

Ben Shneiderman introduced the 8 golden rules of interface design, which is used to make websites and application easy to use. They are simple design guidelines for creating user friendly interfaces.

According to the rules, a good interface should be consistent, meaning buttons, colors and layouts should

work the same way on every page. The system should always give clear feedback, such as showing a message after clicking a button. Error should be prevented and if an error happens, the system should explain it clearly and help the user fix it.

It also emphasized that users should feel in control. The interface should be simple so users do not have to remember too much information. This makes help developers design forms, menu and web pages that are simple, clear and easy for users to understand.