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Internship Role: Web Development

1. Introduction

Today we learned about two very important concepts in JavaScript — JSON (JavaScript Object Notation) and LocalStorage. Both are used to store and transfer data, but their purposes and uses are slightly different. Understanding them is essential for working with APIs and creating web applications that remember user data.

2. JSON (JavaScript Object Notation)

Definition:

JSON is a lightweight data format used to store and exchange information. It is easy for humans to read and write and easy for machines to parse and generate.

Key Points:

- Written in key-value pairs.
- Keys must be inside double quotes.
- Data types supported: string, number, boolean, array, object, and null.

- Commonly used in APIs to send and receive data between server and client.

Example:

```
{  
  "name": "Ali",  
  "age": 22,  
  "skills": ["HTML", "CSS", "JavaScript"]  
}
```

Converting JSON in JavaScript:

// Object to JSON

```
let student = { name: "Ali", age: 22 };  
let jsonData = JSON.stringify(student);
```

// JSON to Object

```
let objData = JSON.parse(jsonData);
```

LocalStorage**Definition:**

LocalStorage is a browser feature that allows storing data permanently in the user's browser until it is manually deleted.

Key Points:

- Data is stored as strings.
- It has a size limit of around 5–10MB depending on the browser.
- Data does not expire (unlike sessionStorage).

Common Methods:

```
localStorage.setItem("name", "Ali"); // Store  
let userName = localStorage.getItem("name"); // Retrieve  
localStorage.removeItem("name"); // Remove  
localStorage.clear(); // Clear all
```

Practical Use Case:

We can use JSON with LocalStorage to store complex objects:

```
let student = { name: "Ali", age: 22 };  
localStorage.setItem("student", JSON.stringify(student));  
let data = JSON.parse(localStorage.getItem("student"));  
console.log(data.name); // Ali
```

5. Conclusion:

JSON helps in data exchange, and LocalStorage helps in data persistence in the browser. By combining them, we can make interactive web apps that remember users even after they close the browser.