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JavaScript Syllabus In Hinglish

1. Introduction to JavaScript

- **JavaScript kya hai?**
JavaScript ek programming language hai jo mainly **web pages** ko dynamic banane ke liye use hota hai. Yeh client-side scripting language hai, jo browser mein run hota hai.
- **History aur Evolution**
JavaScript ka invention **Brendan Eich** ne 1995 mein kiya tha, aur ab yeh web development ka important part hai.

2. Basic Syntax

- **Variables**
 - `var`, `let`, `const` ke through variables declare karte hain.
 - **let** ka use block-level scope ke liye hota hai, aur **const** constant value ko represent karta hai.
- `let name = "John";`
- `const age = 25;`
- **Data Types**
JavaScript mein basic data types hote hain:
 - **String:** Text, example: `"Hello"`
 - **Number:** Integers ya decimals, example: `100` ya `12.5`
 - **Boolean:** `true` ya `false`
 - **Array:** Multiple values store karte hain, example: `[1, 2, 3]`
 - **Object:** Key-value pairs, example: `{ name: "John", age: 25 }`

3. Operators

- **Arithmetic Operators:** `+`, `-`, `*`, `/`, `%`
- **Comparison Operators:** `==`, `!=`, `>`, `<`, `>=`, `<=`

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- **Logical Operators:** && (AND), || (OR), ! (NOT)

4. Control Structures

- **If/Else**

Conditional statements ka use kisi condition ke basis pe decision lene ke liye hota hai.

- ```
if (age > 18) {
```
- ```
  console.log("Adult");
```
- ```
} else {
```
- ```
  console.log("Minor");
```
- ```
}
```

- **Switch-Case**

Multiple conditions check karne ke liye use hota hai.

- ```
switch (day) {
```
- ```
 case "Monday":
```
- ```
    console.log("Start of the week!");
```
- ```
 break;
```
- ```
  case "Friday":
```
- ```
 console.log("Weekend is near!");
```
- ```
    break;
```
- ```
 default:
```
- ```
    console.log("Regular day");
```
- ```
}
```

- **Loops**

JavaScript mein 3 main types ke loops hote hain: for, while, do...while.

Example:

```
for (let i = 0; i < 5; i++) {
 console.log(i);
}
```

## 5. Functions

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## • **Function Declaration**

Functions ko reusable code ke roop mein likhte hain.

- ```
function greet(name) {
```
- ```
 console.log("Hello, " + name);
```
- ```
}
```
- ```
greet("John");
```

## • **Arrow Functions**

Short syntax for functions.

- ```
const add = (a, b) => a + b;
```
- ```
console.log(add(5, 3)); // 8
```

## 6. Objects and Arrays

### • **Arrays:**

Arrays ek ordered collection of elements hoti hain.

- ```
let fruits = ["apple", "banana", "cherry"];
```
- ```
console.log(fruits[0]); // "apple"
```

### • **Objects:**

Objects mein key-value pairs hote hain.

- ```
let person = {
```
- ```
 name: "John",
```
- ```
  age: 25,
```
- ```
 greet: function() {
```
- ```
    console.log("Hello");
```
- ```
 }
```
- ```
};
```
- ```
person.greet(); // "Hello"
```

## 7. DOM Manipulation

### • **DOM (Document Object Model)**

JavaScript ka use HTML elements ko access karne aur manipulate karne ke liye hota hai.

- ```
document.getElementById("myButton").innerHTML = "Click me!";
```

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- **Event Handling**

Events (like click, hover) ko handle karne ke liye JavaScript ka use hota hai.

- ```
document.getElementById("myButton").addEventListener("click", function() {
```
- ```
  alert("Button clicked!");
```
- ```
});
```

## 8. Asynchronous JavaScript

- **Callbacks**

Functions ko ek dusre mein pass karne ke liye callbacks use karte hain.

- ```
function fetchData(callback) {
```
- ```
 setTimeout(() => {
```
- ```
    console.log("Data fetched!");
```
- ```
 callback();
```
- ```
  }, 2000);
```
- ```
}
```
- ```
fetchData(() => console.log("Callback executed"));
```

- **Promises**

Asynchronous operations ke liye promises ka use hota hai, jisme `.then()` aur `.catch()` methods hote hain.

- ```
let promise = new Promise((resolve, reject) => {
```
- ```
  let success = true;
```
- ```
 if (success) {
```
- ```
    resolve("Data loaded successfully!");
```
- ```
 } else {
```
- ```
    reject("Error loading data!");
```
- ```
 }
```
- ```
});
```
- ```
promise.then((message) => {
```
- ```
  console.log(message);
```
- ```
}).catch((message) => {
```
- ```
  console.log(message);
```
- ```
});
```

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## 9. ES6 Features

- **Template Literals**

String interpolation ke liye use hota hai.

- `let name = "John";`
- `let message = `Hello, ${name}!`;`
- `console.log(message); // "Hello, John!"`

- **Destructuring**

Objects aur arrays se directly values extract karne ke liye use hota hai.

- `let person = { name: "John", age: 25 };`
- `let { name, age } = person;`
- `console.log(name, age); // "John", 25`

- **Spread Operator**

Arrays aur objects ko easily combine karne ke liye use hota hai.

- `let arr1 = [1, 2, 3];`
- `let arr2 = [...arr1, 4, 5];`
- `console.log(arr2); // [1, 2, 3, 4, 5]`

## 10. Error Handling

- **Try-Catch Block**

Errors ko handle karne ke liye try-catch ka use karte hain.

- ```
try {  
  let result = riskyFunction();  
} catch (error) {  
  console.log("Error: " + error.message);  
}
```

11. JavaScript Libraries and Frameworks

- **jQuery**

A simple, fast, and feature-rich JavaScript library.

- **React/Angular/Vue**

JavaScript frameworks for building web applications.