JavaScript Timers

JavaScript Timers: `setTimeout`, `setInterval`, and `clearInterval`

JavaScript provides several functions to handle time-based events. The most commonly used are `setTimeout`, `setInterval`, and `clearInterval`.

setTimeout

The `setTimeout` function is used to execute a function after a specified delay (in milliseconds).

Syntax

```
let timeoutID = setTimeout(function, delay, arg1, arg2, ...);
```

- **function**: The function to be executed.
- **delay**: The time (in milliseconds) to wait before executing the function.
- **arg1, arg2, ...**: Additional arguments to pass to the function (optional).

```javascript
// Example: Display a message after 2 seconds
function sayHello() {
  console.log("Hello, World!");
}

setTimeout(sayHello, 2000);
```

```javascript
// Using with Arrow Functions
setTimeout(() => {
  console.log("This message is displayed after 3 seconds.");
}, 3000);
```

setInterval

The `setInterval` function is used to repeatedly execute a function at specified intervals (in milliseconds).

Syntax

```
let intervalID = setInterval(function, interval, arg1, arg2, ...);
```

- **function**: The function to be executed.
- **interval**: The time (in milliseconds) between each execution of the function.
- **arg1, arg2, ...**: Additional arguments to pass to the function (optional)

```
// Example: Display a message every 1 second
function sayHello() {
  console.log("Hello, World!");
}

setInterval(sayHello, 1000);
```

```
setInterval(() => {
  console.log("This message is displayed every 2 seconds.");
}, 2000);
```

---

clearInterval

The `clearInterval` function is used to stop the execution of a function that was started by setInterval.

Syntax

```
clearInterval(intervalID);
```

- **intervalID**: The identifier of the interval you want to clear, which was returned by setInterval.

```
// Example: Stop displaying the message after 5 seconds
function sayHello() {
  console.log("Hello, World!");
}

let intervalID = setInterval(sayHello, 1000);

setTimeout(() => {
  clearInterval(intervalID);
  console.log("Stopped saying hello.");
}, 5000);
```