

Understanding `console.log()` in JavaScript

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In JavaScript, `console.log()` is a powerful tool for developers to output information to the browser console.

1. Basic Usage:

- **Syntax:** `console.log(value1, value2, ..., valueN)`
- **Description:** The `console.log()` method accepts one or more arguments, which can be strings, variables, objects, or any other JavaScript values. It outputs these values to the browser console.
- **Example:**

```
let name = "Claudio";  
let age = 20;  
console.log("Name:", name, "Age:", age);  
// Output: Name: Claudio Age: 20
```

2. **String Substitution (%s):** You can use `%s` as a placeholder in the log message string, and provide the corresponding values as additional arguments to `console.log()`. This is particularly useful when logging variables.

Example:

```
let name = "Claudio";  
console.log("Hello, %s!", name);  
// Output: Hello, Claudio!
```

3. **Numeric Substitution (%d):** Similar to `%s`, you can use `%d` as a placeholder for numeric values.

Example:

```
let age = 20;  
console.log("Age: %d", age);  
// Output: Age: 20
```

4. **Object Substitution (%o or %O):** You can use `%o` or `%O` as a placeholder to log an object. `%o` will display the object in a collapsed format, while `%O` will display it in an expanded format.

Example:

```
let person = { name: "Claudio", age: 20 };  
console.log("Person: %o", person);  
// Output: Person: { name: "Claudio", age: 20 }
```

5. **Styling (%c):** You can apply CSS styling to log messages using `%c`. This can be useful for highlighting specific messages or adding emphasis.

Example:

```
console.log("%cError: Something went wrong!", "color: red; font-weight: bold;");  
// Output: Error: Something went wrong! (in red and bold)
```

6. **Grouping (%c):** You can group related log messages together using `console.group()` and `console.groupEnd()`. This helps in organizing the console output, especially for complex debugging scenarios.

Example:

```
console.group("User Details");  
console.log("Name: Claudio");  
console.log("Age: 20");  
console.groupEnd();
```

Output:

```
User Details  
  Name: Claudio  
  Age: 20
```