

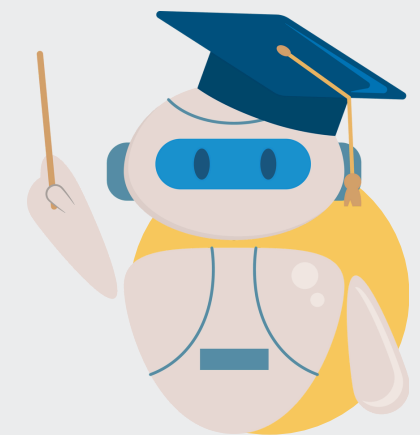


# JavaScript



## What is JavaScript?

JavaScript is a programming language that brings websites to life. It makes web pages interactive, allowing users to click buttons, play videos, submit forms, and get instant feedback. Think of HTML as the structure of a house, CSS as the paint and decorations, and JavaScript as the electricity that powers the lights and appliances.



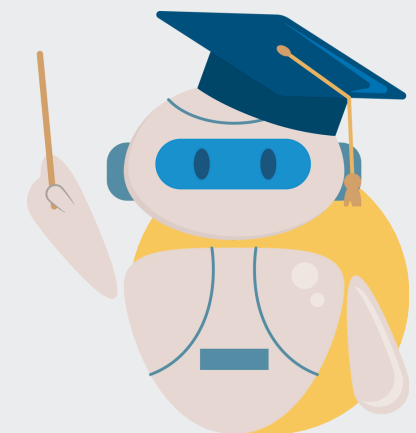


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## Why is JavaScript Important?

- Interactivity: JavaScript allows users to interact with websites.
- Real-time Updates: It lets websites update without reloading the page (like when messages appear instantly in a chat app).
- Universally Supported: Almost every website uses JavaScript. It's supported by all modern web browsers.





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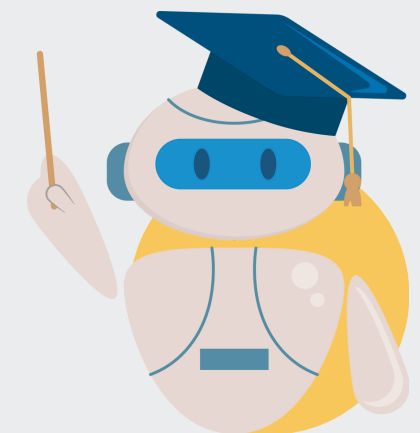
## Key Concepts

### 1. Variables

- Imagine a box where you can store a value (like a name or number) and label it. That label is a "variable." JavaScript uses these to remember things while the site is running.

### 2. Functions

- A function is like a recipe. It tells the browser what steps to follow when something happens. For example: when someone clicks a button, run this set of instructions.





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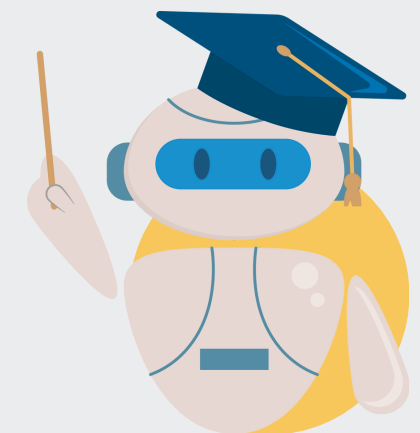
## Key Concepts

### 3. Events

- Events are things that happen on a web page, like a mouse click, key press, or page load. JavaScript listens for these and reacts accordingly.

### 4. Conditionals (If-Statements)

- This is how JavaScript makes decisions. For example: If a form is empty, then show a warning. Otherwise, allow submission.





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## Key Concepts

### 5. Loops

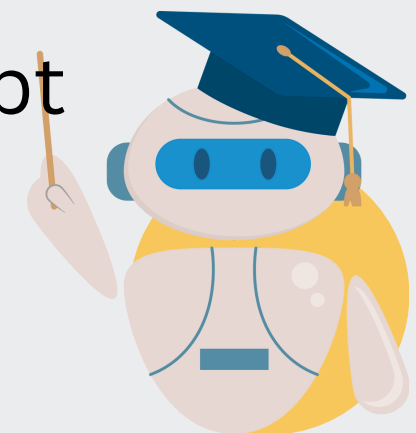
- Loops are used to repeat actions. For example, go through a list of items and show each one. This is useful for displaying dynamic content.

### 6. Objects

- Objects group related information together. For example, a person object might include a name, age, and email.

### 7. Arrays

- An array is a list. It holds multiple values, like a shopping list. JavaScript can go through the list and use each item one at a time.





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## What Can JavaScript Do on a Website?

- Show or hide elements
- Validate user input (like checking if an email is entered correctly)
- Change colors or content dynamically
- Create animations and interactive effects
- Communicate with servers to get or send data

