

🟡 What is an Object in JavaScript?

An **object** is a **collection of data** stored in **key-value pairs**. Think of it like a mini-database or a real-world item with properties.

✅ Example:

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```
const person = { name: "Alice", age: 25, city: "New York" };
```

- `name`, `age`, and `city` are **keys** (also called properties).
- `"Alice"`, `25`, and `"New York"` are **values**.

You access values like this:

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```
console.log(person.name); // "Alice" console.log(person["age"]); // 25
```

🔧 What Are Object Methods?

Object methods are built-in functions that let you **work with objects** — read them, update them, copy them, check their keys, and more.

Here are the most useful ones:

◆ Object.keys(obj)

Returns an array of keys.

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```
Object.keys(person); // ["name", "age", "city"]
```

◆ Object.values(obj)

Returns an array of **values**.

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```
Object.values(person); // ["Alice", 25, "New York"]
```

◆ Object.entries(obj)

Returns an array of key-value **pairs**.

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```
Object.entries(person); /* [ ["name", "Alice"], ["age", 25], ["city", "New York"] ] */
```

◆ Object.assign(target, ...sources)

Copies properties from one object to another.

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```
const updated = Object.assign({}, person, { age: 26 });
```

✅ In React, we often use the **spread operator** instead:

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```
const updated = { ...person, age: 26 };
```

◆ hasOwnProperty(key)

Checks if a key exists in the object.

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```
person.hasOwnProperty("name"); // true
```

◆ delete obj.key

Removes a key from an object.

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```
delete person.city;
```

◆ Object.freeze(obj)

Makes an object **read-only** (can't change values).

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```
Object.freeze(person);
```

◆ Object.seal(obj)

Prevents **adding/removing** keys, but lets you **change existing** values.

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```
Object.seal(person); person.age = 30; // works person.job = "Engineer"; // won't be added
```

Quick Recap:

Method	What it Does
<code>Object.keys()</code>	Gets all keys
<code>Object.values()</code>	Gets all values
<code>Object.entries()</code>	Gets key-value pairs
<code>Object.assign()</code>	Copies/merges objects
<code>hasOwnProperty()</code>	Checks if a key exists
<code>delete</code>	Removes a key
<code>Object.freeze()</code>	Makes object unchangeable
<code>Object.seal()</code>	Locks structure, allows value updates