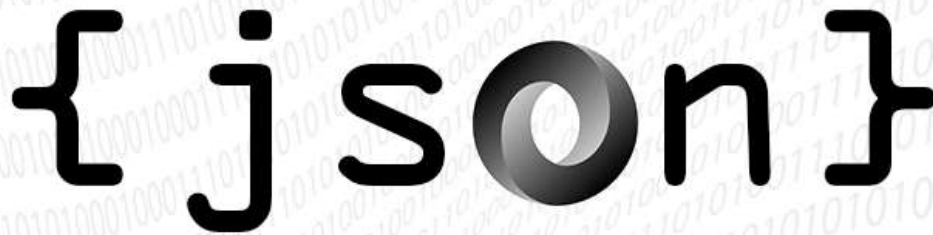


JSON

(JavaScript Object Notation)

A lightweight format for data exchange

The image shows the word "json" in a bold, lowercase, sans-serif font, enclosed within curly braces "{ }". The text is centered and has a slight 3D effect with a dark shadow. The background is a light gray with a pattern of faint, overlapping binary code (0s and 1s) arranged in a grid-like fashion, creating a digital or data-themed aesthetic.

{json}

- What is JSON?
- Why is JSON used on the web?
- Example of JSON
- JSON vs JavaScript Object
- Converting Between JSON and JavaScript Object
- Real Use Cases

What is JSON?

- JSON = **JavaScript Object Notation**.
- A **text format** used to represent data.
- Inspired by JavaScript objects, but **independent of any programming language**.
- Qualities:
 - Human-readable
 - Lightweight
 - Universal (works with Python, Java, PHP, etc.)

Why is JSON used on the web?


- Used everywhere in **APIs** and **web apps**.
- Easy to **send and receive** between client and server.
- Examples:
 - Weather app fetching forecast data.
 - Online shop sending product info from server to browser.
 - Social media apps exchanging user posts/messages.



Example of JSON

```
{  
  "name": "Alice",  
  "age": 20,  
  "isStudent": true,  
  "hobbies": ["reading", "music"]  
}
```

- Keys always **in quotes**.
- Values: strings, numbers, booleans, arrays, objects.



A screenshot of a code editor window titled "powered by ace". The editor displays a JSON object with the following structure:

```
1 {  
2   "array": [  
3     99.95,  
4     45.49,  
5     78.99  
6   ],  
7   "boolean": true,  
8   "null": null,  
9   "number": 123,  
10  "object": {  
11    "a": "b",  
12    "c": "d",  
13    "e": "f"  
14  },  
15  "string": "Hello World"  
16 }
```

The JSON object contains an array of three numbers, a boolean, a null value, a number, an object with three string key-value pairs, and a string. The line containing the "number" key is highlighted in yellow.

JSON vs JavaScript Object

Difference between JSON and JavaScript object:

JavaScript Object (code):

```
const person = { name: "Alice", age: 20, isStudent: true };
```

JSON (text):

```
{"name":"Alice","age":20,"isStudent":true}
```

🔑 Difference:

- **Object** = used directly in JS code.
- **JSON** = text format, mainly for **storage or transfer**.



Converting Between JSON and JavaScript Object

In JavaScript, we use two methods:

```
// Object → JSON (serialize)
JSON.stringify(person);

// JSON → Object (parse)
JSON.parse(jsonString);
```

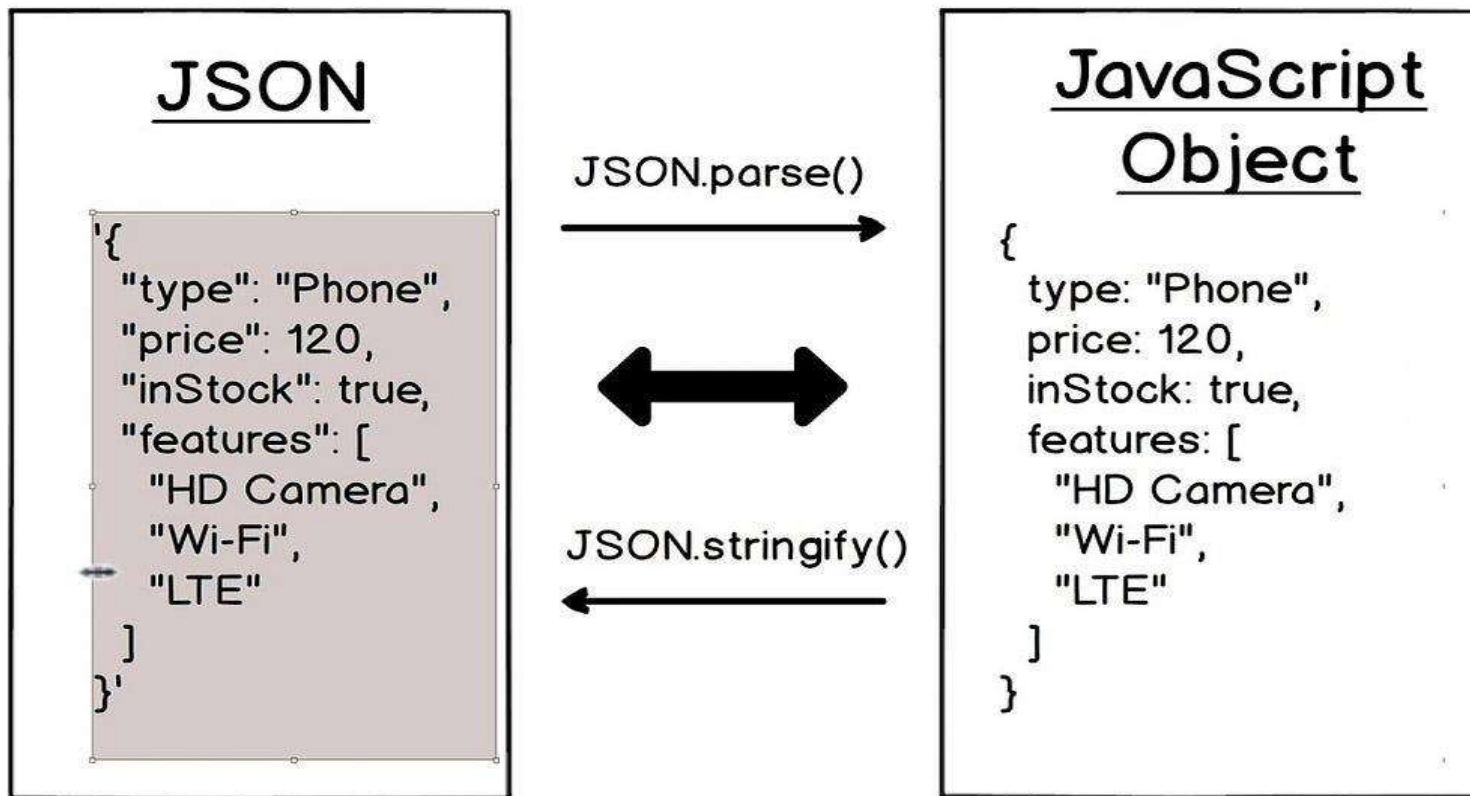


JSON.parse()

JSON.stringify()

JavaScript Methods

Converting



Real Use Cases

1 - APIs

- Example: <https://api.weather.com/today> returns JSON with temperature, humidity, etc.

2 - localStorage (saving data in browser)

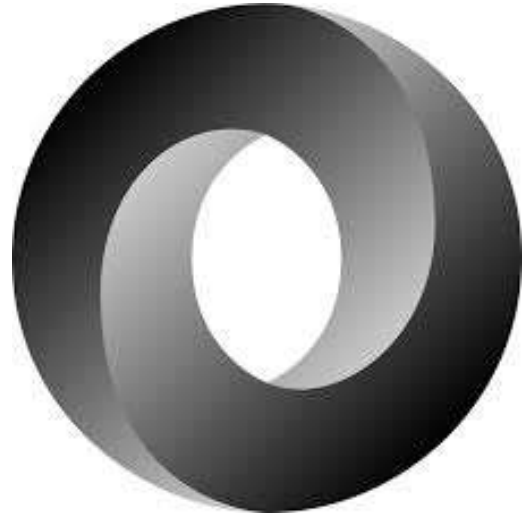
```
localStorage.setItem("user", JSON.stringify(person));  
const saved = JSON.parse(localStorage.getItem("user"));
```

3 - Databases

- MongoDB stores documents in JSON-like format.

Summary

- JSON = **universal text format** for data.
- Easy to **read, write, and exchange**.
- Works in **all programming languages**.
- Essential for **modern web development**.



**THANK YOU FOR YOUR
ATTENTION**

**IF YOU ASK, SEE YOU IN
HEAVEN**

