

# 1. Axios

## Installation

```
npm install axios
```

## Import

```
import axios from "axios";
```

## Syntax

```
axios.get(url, config)
axios.post(url, data, config)
axios.put(url, data, config)
axios.delete(url, config)
```

## Example — GET Request

```
axios.get("https://jsonplaceholder.typicode.com/users")
  .then(response => console.log(response.data))
  .catch(error => console.error(error));
```

## Example — POST Request

```
axios.post("https://jsonplaceholder.typicode.com/posts", {
  title: "Hello World",
  body: "This is my first post",
  userId: 1,
})
  .then(response => console.log(response.data))
  .catch(error => console.error(error));
```

## Configuration Example

```
axios({
  method: "post",
  url: "/api/register",
  data: { username: "Gokul", password: "12345" },
  headers: { "Content-Type": "application/json" },
});
```

## Features

-  Automatically transforms JSON data.
-  Supports interceptors (e.g., add tokens or handle errors globally).
-  Supports request cancellation.
-  Automatically parses JSON response.
-  Easier error handling.

## Example — Interceptors

```
axios.interceptors.request.use(config => {
  config.headers.Authorization = `Bearer
${localStorage.getItem("token")}`;
  return config;
});
```

## 2. Fetch API

### Built-in (no installation needed)

```
fetch(url, options)
  .then(response => response.json())
  .then(data => console.log(data))
```

```
.catch(error => console.error(error));
```

## Example — GET Request

```
fetch("https://jsonplaceholder.typicode.com/users")
  .then(response => response.json()) // must convert to JSON
manually
  .then(data => console.log(data))
  .catch(error => console.error(error));
```

## Example — POST Request

```
fetch("https://jsonplaceholder.typicode.com/posts", {
  method: "POST",
  headers: {
    "Content-Type": "application/json",
  },
  body: JSON.stringify({
    title: "Hello World",
    body: "This is my first post",
    userId: 1,
  }),
})
  .then(response => response.json())
  .then(data => console.log(data))
  .catch(error => console.error(error));
```

## Options

```
{
  method: "POST",
  headers: { "Content-Type": "application/json" },
  body: JSON.stringify(data),
}
```

## Features

-  Native in browsers (no extra library).

- ⚠ Requires manual JSON conversion.
- ⚠ Less user-friendly error handling (only rejects on network failure).
- ⚠ No built-in request cancellation (needs AbortController).

## 3. Key Differences

| Feature                  | Axios                             | Fetch API                       |
|--------------------------|-----------------------------------|---------------------------------|
| Library                  | External (install required)       | Built-in                        |
| JSON Parsing             | Automatic                         | Manual (.json())                |
| Error Handling           | Rejects for HTTP & network errors | Rejects only for network errors |
| Timeout Support          | Built-in                          | Manual using AbortController    |
| Upload/Download Progress | Supported                         | Needs ReadableStream            |
| Interceptors             | Yes                               | No                              |
| Simplicity               | More concise                      | Slightly verbose                |

## 4. Example Comparison (POST)

### Axios

```
await axios.post("/api/users", { name: "Gokul" });
```

### Fetch

```
await fetch("/api/users", {
  method: "POST",
  headers: { "Content-Type": "application/json" },
  body: JSON.stringify({ name: "Gokul" }),
});
```

## When to Use What

| Use Case  | Recommendation                      |
|---|-------------------------------------|
| You need interceptors, cancel tokens, or timeouts | <b>Axios</b>                        |
| You want zero dependencies                        | <b>Fetch API</b>                    |
| You're using older browsers                       | <b>Axios (better compatibility)</b> |
| You're building a simple modern web app           | <b>Fetch API</b> is fine            |

## Quick Reference

### Axios Example

```
axios.get('/api/data').then(res => console.log(res.data));
```

### Fetch Example

```
const res = await fetch('/api/data');
const data = await res.json();
console.log(data);
```