JavaScript Web API Intro

Back to JS page

Table of Contents

- JavaScript Web API Intro
  - What is Web API?
    - Example 1
  - Browser APIs
    - Example 2
  - Web Storage API
    - Example 3
  - Third Party APIs
    - Example 4
  - Document
  - Reference

What is Web API?

API stands for **A**pplication **P**rogramming **I**nterface.

A Web API is an application programming interface for the web.

Browser APIs are built into your web browser. They extend the functionality of the browser.

Third Party APIs are not built into your browser. You need to download their code from the web.

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Web API Intro</h2>
<p>From w3schools.com, Experiment by Teeratus_R</p>

<h4>What is Web API?</h4>
<p id="demo"></p>

<script>
// The Browser API is built into the browser
// It extends the browser's functionality

let text = "Browser APIs built into your browser:<br><br>";
text += "1. DOM API - Manipulate HTML elements<br>";
text += "2. Fetch API - Make HTTP requests<br>";
text += "3. Web Storage API - Store data locally<br>";
text += "4. History API - Navigate browser history<br>";
text += "5. Geolocation API - Get user location<br>";
text += "6. Canvas API - Draw graphics<br>";
text += "7. Console API - Debug code<br>";
text += "8. Timer API - setTimeout/setInterval<br>";
text += "9. Screen API - Get screen info<br>";
text += "10. Navigator API - Get browser info<br>";

document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

Example 1

Result View Example

Browser APIs

All browsers have a set of built-in Web APIs. Here are some of the most important ones:

API	Description	Topic
DOM API	Access and modify HTML elements	`05.2101–05.2104`
Fetch API	Make HTTP requests to servers	`05.2061`
Web Storage API	Store data in the browser (localStorage/sessionStorage)	This topic
History API	Navigate browser history	`05.2114`
Geolocation API	Get user's geographic position	This topic
Canvas API	Draw graphics on a web page	External
Console API	Debug and log information	Built-in
Screen API	Get screen information	`05.2112`
Navigator API	Get browser/device info	`05.2115`

```
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<h4>Browser APIs</h4>
<p id="demo"></p>

<script>
// Geolocation API example
let text = "Geolocation API - Checking browser support...<br><br>";

if (navigator.geolocation) {
  text += "✓ Geolocation is supported in this browser<br>";
  text += "✓ Fetch API is supported: " + ('fetch' in window) + "<br>";
  text += "✓ Web Storage is supported: " + ('localStorage' in window) + "<br>";
  text += "✓ History API is supported: " + ('history' in window) + "<br>";
  text += "✓ Console API is supported: " + ('console' in window) + "<br>";
} else {
  text += "✗ Geolocation is NOT supported";
}

document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

Example 2

Result View Example

Web Storage API

The Web Storage API provides mechanisms for browsers to store key/value pairs:

- `localStorage` - stores data with no expiration date
- `sessionStorage` - stores data for one session (data is lost when the browser tab is closed)

```
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<h4>Web Storage API</h4>
<p id="demo"></p>

<script>
// Store data using localStorage
localStorage.setItem("name", "John Doe");
localStorage.setItem("age", "30");

// Retrieve data
let name = localStorage.getItem("name");
let age = localStorage.getItem("age");

let text = "Web Storage API (localStorage):<br><br>";
text += "Stored name: " + name + "<br>";
text += "Stored age: " + age + "<br><br>";

// Count stored items
text += "Number of items: " + localStorage.length + "<br><br>";

// Remove an item
localStorage.removeItem("age");
text += "After removing 'age': " + localStorage.getItem("age") + " (null)<br><br>";

// Clear all storage
localStorage.clear();
text += "After clearing all storage: " + localStorage.length + " items";

document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

Example 3

Result View Example

Third Party APIs

Third Party APIs require you to download code from the web. Examples include:

- **Google Maps API** - Display maps on web pages
- **YouTube API** - Embed YouTube videos
- **Twitter API** - Display tweets
- **Facebook API** - Login with Facebook
- **Weather API** - Get weather data

```
<!DOCTYPE html>
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<h4>Third Party APIs</h4>
<p id="demo"></p>

<button onclick="fetchUsers()">Fetch Users (JSONPlaceholder API)</button>
<p id="result"></p>

<script>
function fetchUsers() {
  // Using the free JSONPlaceholder API (a third-party API)
  fetch('https://jsonplaceholder.typicode.com/users')
    .then(function(response) { return response.json(); })
    .then(function(data) {
      let text = "Third Party API Result (JSONPlaceholder):<br><br>";
      for (let i = 0; i < 3; i++) {
        text += (i + 1) + ". " + data[i].name + " - " + data[i].email + "<br>";
      }
      text += "<br>... and " + (data.length - 3) + " more users";
      document.getElementById("result").innerHTML = text;
    })
    .catch(function(error) {
      document.getElementById("result").innerHTML = "Error: " + error.message;
    });

  document.getElementById("demo").innerHTML = "Fetching data from JSONPlaceholder API...";
}
</script>

</body>
</html>
```

Example 4

Result View Example

Document

Document in project

You can Download PDF file.

Reference

- W3Schools JavaScript Web API Intro