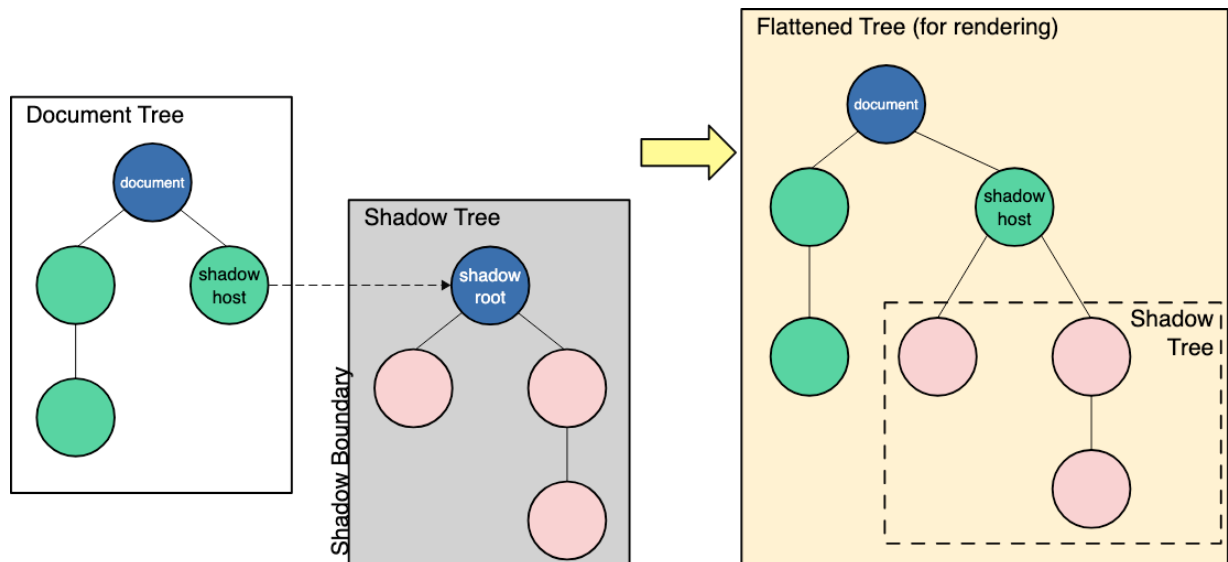# Shadow DOM

Shadow DOM

The Shadow DOM is a hidden and encapsulated part of the DOM tree, typically used within web components to isolate internal structure and styling from the main document.

Shadow Host

- A regular DOM element to which a Shadow DOM is attached.

- It acts as the entry point or anchor for the shadow tree.

Shadow Root

- The root node of the Shadow DOM.

- It's where the shadow tree begins.

Shadow Tree

- A collection of DOM elements encapsulated within the shadow root.

- It represents the internal structure of the Shadow DOM.

Shadow Host + Shadow Tree = Shadow DOM

Shadow DOM in Playwright

- Playwright natively supports working with elements inside the Shadow DOM.

- You can use CSS selectors to interact with shadow elements.

- XPath selectors do not work with elements inside the Shadow DOM in Playwright.

Cookies in Playwright

What Are Cookies?

Cookies are small pieces of data stored on the client side (browser). They are mainly used for:

- Session management (e.g., login sessions)
- Personalization (e.g., themes, preferences)

Playwright and Cookies

In Playwright, we can **add**, **get**, and **delete** cookies using its powerful API, which allows us to simulate real-world browser behavior.

Get Cookies

You can retrieve cookies using **context.cookies()** or **page.context().cookies()**.

```
const cookies = await context.cookies();

console.log(cookies);
```

If you want cookies for a specific URL:

```
const cookies = await context.cookies('https://example.com');
```

Set/Add Cookies

You can set cookies using **context.addCookies().**

```
await context.addCookies([
  {
    name: 'token',
    value: 'abc123',
    domain: 'example.com',
    path: '/',
    httpOnly: true,
    secure: true,
    sameSite: 'Lax',
  },
]);
```

Note: Set cookies **before** navigating to the page if required for authentication or tracking.

Delete Cookies

Playwright doesn't have a direct "deleteCookie" function, but you can **clear all cookies** using:

```
await context.clearCookies();
```

Notes:

- Use browser tools (DevTools → Application → Cookies) to inspect live cookies.

- Use cookies to simulate authenticated sessions during testing.