Assertions

**Introduction:**

* Playwright includes test assertions via the expect function.
* Call expect(value) and choose a matcher that reflects the expectation.
* Supports generic matchers like toEqual, toContain, toBeTruthy.

Example:  
expect(success).toBeTruthy();

**Web-Specific Async Matchers:**

* Playwright has web-specific async matchers that wait until the condition is met.

Example:  
await expect(page.getByTestId('status')).toHaveText('Submitted');

* Playwright re-tests the element until the expected condition is met or the timeout is reached.
* Timeout can be customized or set globally via testConfig.expect.

**Default Assertion Timeout:**

* The default timeout for assertions is 5 seconds.

**Auto-Retrying Assertions:**

* These assertions will retry until they pass or the timeout is reached.
* Retry assertions are async, so they must be awaited.

**Auto-retrying assertions examples:**

* + await expect(locator).toBeAttached(): Element is attached
  + await expect(locator).toBeChecked(): Checkbox is checked
  + await expect(locator).toBeEnabled(): Element is enabled
  + await expect(locator).toHaveText(): Element matches text
  + await expect(page).toHaveURL(): Page has a URL

**Non-Retrying Assertions:**

* Test conditions that do not auto-retry.
* Useful for synchronous checks, but may cause flaky tests on dynamic pages.

**Non-retrying assertions examples:**

* + expect(value).toBe(): Value is the same
  + expect(value).toBeTruthy(): Value is truthy
  + expect(value).toMatch(): String matches a regular expression

**Negating Matchers:**

* Use .not to negate any matcher.

Example:  
expect(value).not.toEqual(0);

**Soft Assertions:**

* Failed soft assertions will not stop the test execution but will mark it as failed.

Example:  
await expect.soft(page.getByTestId('status')).toHaveText('Success');

**Checking Soft Assertion Failures:**

* You can check if there were any soft assertion failures using:

expect(test.info().errors).toHaveLength(0);

**Custom Expect Messages:**

* You can specify a custom message for the expect function.

Example:  
await expect(page.getByText('Name'), 'should be logged in').toBeVisible();

**Soft Assertions with Custom Messages:**

* Soft assertions also support custom messages:

Example:  
expect.soft(value, 'my soft assertion').toBe(56);

**Configuring expect:**

* Pre-configure expect instances with defaults like timeout and soft assertions.

Example:  
const slowExpect = expect.configure({ timeout: 10000 });

**Using expect.poll:**

* Convert synchronous expect to an asynchronous polling one.

Example:

javascript

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await expect.poll(async () => {

const response = await page.request.get('https://api.example.com');

return response.status();

}).toBe(200);

**Using expect.toPass:**

* Retry blocks of code until they pass successfully.

Example:

javascript

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await expect(async () => {

const response = await page.request.get('https://api.example.com');

expect(response.status()).toBe(200);

}).toPass();

**Adding Custom Matchers with expect.extend:**

* Extend Playwright assertions by adding custom matchers.

Example: Adding toHaveAmount custom matcher:

javascript

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export const expect = baseExpect.extend({

async toHaveAmount(locator: Locator, expected: number, options?: { timeout?: number }) {

// Custom logic here

},

});

Usage:  
await expect(page.locator('.cart')).toHaveAmount(4);

**Compatibility with Expect Library:**

* Playwright's expect should not be confused with other expect libraries.
* Ensure to use Playwright's version for better integration.

**Combining Custom Matchers from Multiple Modules:**

* You can merge custom matchers from different modules to create a unified test environment.

Example:

javascript

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import { mergeExpects } from '@playwright/test';

export const expect = mergeExpects(dbExpect, a11yExpect);