Cypress

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Foreword

Cypress is an advanced testing tool.

The following test types are supported:

- End-to-end tests
- Component tests
- Integration tests
- Unit tests

To select an element, it is best to add the attribute data-testid to it and use that in the test. Of course we must use that attribute only for testing, so that it is really isolated.

This e-book contains a lot of handy examples.

Installing

```
npm install cypress –save-dev
```

cypress.config.ts

```
import { defineConfig } from 'cypress';

export default defineConfig({
  e2e: {
    baseUrl: 'http://localhost:5000',
  },
});
```

Because of the import, make sure that in tsconfig.json "module" is set to "ES2015".

Running

Open overview to run a test file:

```
npx cypress open
```

Run one test file:

```
npx cypress run --spec path\test.cy.ts
```

Run all test files:

```
npx cypress run --spec path\*.cy.ts
```

Run one test in a test file:

Change it(to it.only(

Skip one test in a test file:

Change it(to it.skip(

Visit a site

Example 1:

```
describe('Visit a site', () => {
  it('Visit mysite.com', () => {
    cy.viewport(1280, 720);
    cy.visit('https://www.mysite.com');
    // Insert here more commands
  });
});
```

Set the screen size

https://docs.cypress.io/api/commands/viewport

Example 1:

```
// width = 320, height = 480
cy.viewport(320, 480);
```

Example 2:

```
describe('Tests', () => {
  context('720p resolution', () => {
    beforeEach(() => {
      // Desktop
      cy.viewport(1280, 720);
    });

    it('Test 1', () => {
      // Code for Test 1
    });

    it('Test 2', () => {
      // Code for Test 2
    });
  });

  context('iphone-5 resolution', () => {
    beforeEach(() => {
      cy.viewport('iphone-5');
    });

    it('Test 1', () => {
      // Code for Test 1
    });

    it('Test 2', () => {
      // Code for Test 2
    });
  });
});
```

Click a button

Example 1 (best practice):

```
// This example is the best practice
// Click the button for which data-testid has the value submit
cy.get('[data-testid="submit"]').click();
```

Example 2:

```
// Click the button with the id myButton
cy.get('#myButton').click();
```

Example 3:

```
// Force clicking the button with the id myButton (not recommented)
cy.get('#myButton').click({ force: true });
```

Example 4:

```
// Click the button with the name submit
cy.get('[name="submit"]').click();
```

Enter a value

Example 1:

```
// Enter a value in the input element with the id myInput
cy.get('#myInput').type('123');
```

Example 2:

```
// Clear
cy.get('#myInput').clear();
```

Example 3:

```
// Clear and enter a value (recommented for most situations)
cy.get('[data-testid="user"]').clear().type('fred');
```

Select an option within a select element

Example 1:

```
// Select blue in the select element with the id color
cy.get('#color').select('blue');
```

Example 2:

```
// Select the option with index 0
cy.get('#color').select(0);
```

Check if an element exists

Example 1:

```
cy.get('[data-testid="login-button"]').should('exist');
cy.get('[data-testid="logout-button"]').should('not.exist');
```

Example 2:

```
cy.get('[data-testid="logout-button"]').then(($el) => {
  if ($el.length) {
    cy.log('logout-button exists');
  } else {
    cy.log('logout-button does not exist');
  }
});
```

Check if an alert has appeared

Example 1:

```
cy.window().then((win) => {
  cy.spy(win, 'alert').as('alert');
});
cy.get('[data-testid="submit-button"]').click();
cy.get('@alert').should('be.calledWith', 'Error!');
```

Example 2:

```
// be.called = al least once
// be.calledOnce = exactly once
// be.calledTwice = exactly twice
// be.calledOnceWith = exactly once with the specified argument
cy.window().then((win) => {
  cy.spy(win, 'alert').as('alert');
});
cy.get('[data-testid="submit-button"]').click();
cy.get('@alert').should('be.called');
```

Check the number of inputs with an invalid value

Example 1:

```
// There should be 2 inputs with an invalid value.
cy.get('input:invalid').should('have.length', 2);
```

Check the url

Example 1:

```
cy.url().should('include', 'signin?redirect=/');
```

Example 2:

```
cy.url().then(($url) => {
  if ($url.includes('signin')) {
    cy.log("URL contains signin")
  }
});
```

Check the value of an input

Example 1:

```
cy.get('[data-testid="first-name"]').should('have.value', 'Fred');
```

Check which option of a select element is selected

Example 1:

```
cy.get('[data-testid="color"] option:selected').should('have.text', 'red');
```

Check if a text exists

Example 1:

```
cy.contains('Welcome!').should('be.visible');
```

Example 2:

```
// Check if the text does not exist
cy.contains('body', 'Error!').should('not.exist');
```

Reload the page

Example 1:

```
cy.reload();
```

Example 2:

```
// Reload without using the cache
cy.reload(true);
```

Links

https://docs.cypress.io/guides/overview/why-cypress
https://docs.cypress.io/guides/references/best-practices

Cheat sheets
https://bugbug.io/blog/testing-frameworks/cypress-cheat-sheet/
https://www.numpyninja.com/post/cypress-testing-syntax-cheat-sheet-a-quick-reference-guide