



# PLAYWRIGHT FULL DOCUMENT

## ABSTRACT

The objective of this article is to track the JavaScript-based Playwright resources that are required for future study and learning.

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## Installation

### System Requirements:

- ❖ Node.js 16+
- ❖ Windows 10+, Windows Server 2016+ or Windows Subsystem for Linux (WSL).
- ❖ MacOS 12 Monterey or MacOS 13 Ventura.
- ❖ Debian 11, Debian 12, Ubuntu 20.04 or Ubuntu 22.04

### Installation:

**Step 1:** Create a folder on destined location.

**Step 2:** Ensure the NodeJS version is above 14 from the command prompt.

**Step 3:** Open the created folder and type “**cmd**” in the address bar.

**Step 4:** Type “**code**”. to launch VS Code. You can now see the created folder as a project in VS Code.

**Step 5:** Navigate to the **EXTENSIONS** section and type “**Playwright**”. There are multiple options available. Select the **Playwright Test for VS Code by Microsoft** option.

**Step 6:** Click **Install**.

**Step 7:** Press **CTRL + SHIFT + P** to open the command panel and type “**install Playwright**”.

**Step 8:** Enable the Chromium, Firefox, and WebKit checkboxes, as Playwright supports all browser engines.

**Step 9:** Click **Okay**.

**Step 10:** Expand the **Project Explorer**, and the “**example.spec.ts**” file is displayed.

**Step 11:** To execute the test, click the **Green arrow** icon.

**Step 12:** To disable the Headless mode, navigate to the **playwright.config.ts** file.

**Step 13:** In the **use block**, type “**headless: false,**” and execute again to view the browser.



## Writing Tests

```
import { test, expect } from '@playwright/test';

// test: package to test playwright || except: package for validation for the test

test('has title', async ({ page }) => {

// test (): test block || async {}: anonymous function. This will use some fixture (page)
provided by playwright.

//Scripts should be written here

});
```

### Basic Actions

Action	Description
<a href="#"><u>locator.check()</u></a>	Check the input checkbox
<a href="#"><u>locator.click()</u></a>	Click the element
<a href="#"><u>locator.uncheck()</u></a>	Uncheck the input checkbox
<a href="#"><u>locator.hover()</u></a>	Hover mouse over the element
<a href="#"><u>locator.fill()</u></a>	Fill the form field, input text
<a href="#"><u>locator.focus()</u></a>	Focus the element
<a href="#"><u>locator.press()</u></a>	Press single key
<a href="#"><u>locator.setInputFiles()</u></a>	Pick files to upload
<a href="#"><u>locator.selectOption()</u></a>	Select option in the drop down

### Basic Assertions

Assertion	Description
<a href="#"><u>expect(locator).toBeChecked()</u></a>	Checkbox is checked
<a href="#"><u>expect(locator).toBeEnabled()</u></a>	Control is enabled
<a href="#"><u>expect(locator).toBeVisible()</u></a>	Element is visible
<a href="#"><u>expect(locator).toContainText()</u></a>	Element contains text
<a href="#"><u>expect(locator).toHaveAttribute()</u></a>	Element has attribute
<a href="#"><u>expect(locator).toHaveCount()</u></a>	List of elements has given length
<a href="#"><u>expect(locator).toHaveText()</u></a>	Element matches text
<a href="#"><u>expect(locator).toHaveValue()</u></a>	Input element has value



Assertion	Description
<a href="#"><u>expect(page).toHaveTitle()</u></a>	Page has title
<a href="#"><u>expect(page).toHaveURL()</u></a>	Page has URL

Example:

```
await expect(await page.locator("Xpath"/'Loactors')).toBe.....
```

## Running tests

Run tests in UI Mode

**`npx playwright test -ui`**

Run tests by Terminal Command

❖ Running all tests

**`npx playwright test`**

❖ Test by Recording

**`npx playwright codegen`**

❖ Running a single test file

`npx playwright test landing-page.spec.ts`

❖ Running tests in headed mode

`npx playwright test landing-page.spec.ts --headed`

❖ Running tests on a specific project

`npx playwright test landing-page.ts --project=chromium`

❖ Debugging all tests

**`npx playwright test --debug`**

❖ Debugging one test file



```
npx playwright test example.spec.ts --debug
```

- ❖ Test Reports

```
npx playwright show-report
```

### **Description of Commands/Scripts**

**// JavaScript is asynchronous programming language. To make it synchronous we need to use async and await keyword.**

**// await keyword ensure to wait for the promise. Once the page is loaded then the next step will keep continue.**

### **Common:**

- ❖ **To redirect to an url:**

```
await page.goto('the url');
```

- ❖ **To verify page title:**

```
const pageTitle = page.title();
```

```
await expect(page).toHaveTitle('Title found on the website');
```

- ❖ **To verify url:**

```
await expect(page).toHaveURL('URL of the website');
```

- ❖ **To close the page:**

```
await page.close();
```

### **Locators:**

- ❖ **To Specifiy the property:**

```
await page.locator('id/name/class = defined id/name/class').click();
```

```
await page.click('id/name/class = defined id/name/class');
```

For Xpath



```
await page.locator("Xpath").click();
```

```
await page.click("Xpath");
```

#### ❖ Input Field:

```
await page.locator(id/name/class = defined id/name/class').fill("Value");
```

```
await page.fill('id/name/class = defined id/name/class','Value');
```

```
await page.type('id/name/class = defined id/name/class','Value');
```

For Xpath

```
await page.locator("Xpath"). fill("Value");
```

```
await page.fill("Xpath",'Value');
```

### Locate Multiple Web Elements:

```
const elements = await page.$$('Locator');
```

```
for(const element of elements)
```

```
{
```

```
const elementtext = await element.textContent();
```

```
console.log(elementtext);
```

```
}
```

#### Example:

```
const elements = await page.$$("//*[ @id='inventory_container']/div/a/div");
for(const element of elements)
{
const elementtext = await element.textContent();
console.log(elementtext);
}
```

Xpath should be selected in such a way that can get all the item in the webpage.

Then, any of these can be used to get the desired item.



- [page.getByRole\(\)](#) to locate by explicit and implicit accessibility attributes.
- [page.getByText\(\)](#) to locate by text content.
- [page.getByLabel\(\)](#) to locate a form control by associated label's text.
- [page.getByPlaceholder\(\)](#) to locate an input by placeholder.
- [page.getByAltText\(\)](#) to locate an element, usually image, by its text alternative.
- [page.getByTitle\(\)](#) to locate an element by its title attribute.
- [page.getByTestId\(\)](#) to locate an element based on its data-testid attribute (other attributes can be configured).

**Example:**

```
await page.getByLabel('User Name').fill('John');
await page.getByLabel('Password').fill('secret-password');
await page.getByRole('button', { name: 'Sign in' }).click();
await expect(page.getByText('Welcome, John!')).toBeVisible();
```

**Wait Function:**

```
await page.waitForTimeout(milliseconds); //pausing code execution
```

**Radio Button & Checkbox:**

```
await page.locator("Xapth"/'Other Locators').check();
await page.check("Xapth"/'Other Locators');
```

**DropDown Menu:**

```
await page.locator ('Locators').selectOptions({label:'value'});
await page.locator ('Locators').selectOptions('value'); //visible Text
await page.locator ('Locators').selectOptions({value:'value'});
await page.locator ('Locators').selectOptions({index:value}); //numbers
```

**// Check to see all the options and select desired:**

```
const options=await page.$$('Locators')
  let status=false;
  for(const option of options)
  {
    let value = await option.textContent();
    if(value.includes('Specific option'))
    {
      status=true; / await.page.selectOptions("Locators",'value');
      break;
    }
  }
except(status).toBeTruthy(); // if await.page.selectOptions("Locators",'value'); is give no
need to put this code. It is only applicable for status=true;
```

**// Multi Select Drop-down:**

```
const options=await page.$$('Locators')
  for(const option of options)
  {
    let value = await option.textContent();
    if(value.includes('Specific option') || value.includes('Specific option2'))
    {
      await option.click();
    }
  }
```



**// Auto Suggest Drop-Down:**

```
await page.locator('Locators').fill('Value');
    const autoSuggest = await page.$$("Xpath")
// Xpath should be selected in such a way that can get all the item in the drop-down.
    For (let option of autosuggest)
    {
        const value = await option.textContent()
        console.log(value); //check to see the values
    }
    await.page.waitForTimeout(XXXX);
```

**// Code will be used in script for auto suggest:**

```
await page.locator('Locators').fill('Value');
    const autoSuggest = await page.$$("Xpath")
    For (let option of autosuggest)
    {
        const value = await option.textContent()
        if (value.includes('desired value'))
        {
            await option.click()
            break;
        }
    }
    await.page.waitForTimeout(XXXX);
```



### // Hidden Items in Drop-Down:

```
await page.locator('Locators').fill('Value');
    await.page.waitForTimeout(XXXX);
    const hiddenItems = await page.$$("Xpath")
// Xpath should be selected in such a way that can get all the item in the drop-down.
For (Hidden items)
    For (let option of hiddenItems)
    {
    const hdnItm = await option.textContent()
    if (hdnItm.includes('desired value'))
    {
    await option.click()
    break;
    }
    }
await.page.waitForTimeout(XXXX);
```

### Handle Dialogs or Alerts

*In Playwright, by default, dialogs are auto dismissed. So, there's no need to handle them.*

Still there are options to handle them.

alert(); confirm(); prompt() dialogs.



### // Alert handle with only Ok/Confirm button:

```
Page.on('dialog', async dialog=>{ //Enabling alert handling
    except(dialog.type()).toContain('alert') // Assertion if needed to validate
    except(dialog.message()).toContain('Text') // Assertion if needed to validate
    await.dialog.accept(); // Only for pop-up ok/confirm button
})
await page.click('Locators'); //before clicking on to any pop-up need to enable dialog
handler by previous script.
await.page.waitForTimeout(XXXX);
});
```

### // Alert handle with Ok/Confirm & Cancel button:

```
Page.on('dialog', async dialog=>{ //Enabling alert handling
    except(dialog.type()).toContain('Confirm') // Assertion if needed to validate
    except(dialog.message()).toContain('Text') // Assertion if needed to validate
    await.dialog.accept(); // Only for pop-up ok/confirm & cancel button
})
await page.click('Locators'); //before clicking on to any pop-up need to enable dialog
handler by previous script. Here Confirm/Cancel can be performed.
await except(page.locator('Locators')).toHaveText('Text'); // Assertion if needed to validate
await.page.waitForTimeout(XXXX);
});
```

### // Prompt Handling:

```
Page.on('dialog', async dialog=>{ //Enabling alert handling
    except(dialog.type()).toContain('prompt') // Assertion if needed to validate
    except(dialog.message()).toContain('Text') // Assertion if needed to validate
    except(dialog.defaultValue()).toContain('Text') // Assertion if needed to validate
    await.dialog.accept('text'); //Pass the given value
})
```



```
await page.click('Locators');
```

## **Handle Frame/iFrame**

```
//Check total Frames
```

```
const allFrames=await page.frames()  
console.log("Number of frames: ", allFrames.length)
```

```
//Approach 1: Using name or url
```

```
const frame1 = await page.frame({url: 'target url'}) //Using URL.  
frame1.fill("Locator", 'Text/Value');  
await page.waitForTimeout(XXXX);  
||  
const frame2 = await page.frame({name: 'target name'}) //Using Name
```

```
//Approach 2: Using Frame Locator
```

```
const inputBox = await page.frameLocator("Locator of the Frame").locator("Locator  
of the element")  
inputBox.fill("Value")  
await page.waitForTimeout(XXXX);
```

```
//Nested Frame
```

```
const frame = await page.frame({url: 'target url'})  
const childFrames=await frame.childFrames()  
childFrames[index, like:0, 1].locator("Locators").check()  
await page.waitForTimeout(XXXX);
```



## **Handle WebTable/Pagination**

```

    const webTable = await page.locator('Locators')
// total number of rows and columns
    const columns = await table.locator('locator: like tbody tr')
    console.log('Number of columns:',await columns.count())
    except(await columns.count()).toBe(Number like:4) // Assertions if validation is
needed
    const rows = await table.locator('locator: like thead tr th')
    console.log('Number of rows:',await rows.count())
    except(await rows.count()).toBe(Number like:5) // Assertions if validation is needed

```

### **Check-Box on the table:**

#### **// For single check**

```

const matchedRows.filter({
    has: page.locator('Locators'like: 'td')
    hasText: 'desired text from the table'
})
await matchedRows.locator('Locators').check()
await.page.waitForTimeout(XXXX);

```

#### **// For multiple check**

```

await selectProduct(rows,page, 'desired text from the table' 1) // calling function
await selectProduct(rows,page, 'desired text from the table' 2) // calling function
and so on.....
async function selectProduct(rows, page, name)
{
const matchedRows.filter({
    has: page.locator('Locators'like: 'td')
    hasText: name

```



```

}))
await matchedRows.locator('Locators').check()
}

```

### **// Handle Pagination:**

```

const pages = await page.locator('Locators'like: '.pagination li a')
console.log('Number of pages:', await pages.count())

```

*Same as previously used 'for loop' and 'if' statement.*

### **Handle Date Picker**

#### **// Input field**

```

await page.fill('Locators' , 'Date'like: 02/10/2023)

```

#### **// Select Date**

```

const year = "Year" // Like: "2024"
const month = "Month" // Like: "June"
const date = "Date" // Like: "21"
await page.click('Locators') //Opens Calender
    while (true)
    {
        const currYear = await page.locator('Locator of Year').textContent()
        const currMonth = await page.locator('Locator of Month').textContent()
        if(currentYear == year && currMonth == month)
        {
            Break;
        }
        await page.locator ('Next Button Locator').click() //Till we get the expected year and
        month. Also can be used to provide previous button to select previous date
    }

```



```
const currDate await page.$$('Locator of all the date value')
for(const dt of currDate)
{
  if(await dt.textContent()===date)
  {
    await dt.click();
    break;
  }
}
```

### **Mouse Hover Action**

```
const variable1 = await page.locator('Locators')
const variable2 = await page.locator('Locators')
// Mouse Hover
    await variable1.hover()
    await variable2.hover()
```

### **Mouse Right Click Action**

```
const button = await page.locator('Locators')
    await button.click({button: 'right'});
```

### **Mouse Double Click Action**

```
const btnCpy= await page.locator('Locators')
    await btnCpy.dblclick();
```



## **Mouse Drag-Drop Operation**

### **// Approach 1**

```
const drag = await page.locator('Locators')
const drop = await page.locator('Locators')
    await drag.hover()
    await page.mouse.down()
    await drop.hover()
    await page.mouse.up()
```

### **// Approach 2**

```
    await drag.dragTo(drop)
    await page.waitForTimeout(XXXX);
```

## **Keyboard Actions**

An example of holding down Shift in order to select and delete some text:

```
await page.keyboard.type('Hello World!');
await page.keyboard.press('ArrowLeft');
```

```
await page.keyboard.down('Shift');
for (let i = 0; i < ' World'.length; i++)
    await page.keyboard.press('ArrowLeft');
await page.keyboard.up('Shift');
```

```
await page.keyboard.press('Backspace');
// Result text will end up saying 'Hello!'
```

An example of pressing uppercase

```
await page.keyboard.press('Shift+KeyA');
// or
await page.keyboard.press('Shift+A');
```





key can specify the intended [keyboardEvent.key](#) value or a single character to generate the text for. A superset of the key values can be found [here](#). Examples of the keys are: F1 - F12, Digit0- Digit9, KeyA- KeyZ, Backquote, Minus, Equal, Backslash, Backspace, Tab, Delete, Escape, ArrowDown, End, Enter, Home, Insert, PageDown, PageUp, ArrowRight, ArrowUp, etc.

Following modification shortcuts are also supported: Shift, Control, Alt, Meta, ShiftLeft. Holding down Shift will type the text that corresponds to the key in the upper case. If key is a single character, it is case-sensitive, so the values a and A will generate different respective texts. Shortcuts such as key: "Control+o" or key: "Control+Shift+T" are supported as well. When specified with the modifier, modifier is pressed and being held while the subsequent key is being pressed.

## **Upload Files**

[FileChooser](#) objects are dispatched by the page in the [page.on\('filechooser'\)](#) event.

```
//Upload Single Files
await page.waitForSelector('Locators');
await page.locators('Locators').click()
await page.locators('Locators').setInputFiles('relative path')
await.page.waitForTimeout(XXXX);
```

```
//Upload Multiple Files
await page.locators('Locators')
    .setInputFiles(['Relative path1',' Relative path2']);
await.page.waitForTimeout(XXXX);
```

```
//Removing File(s)
await page.locators('Locators')
    .setInputFiles([]);

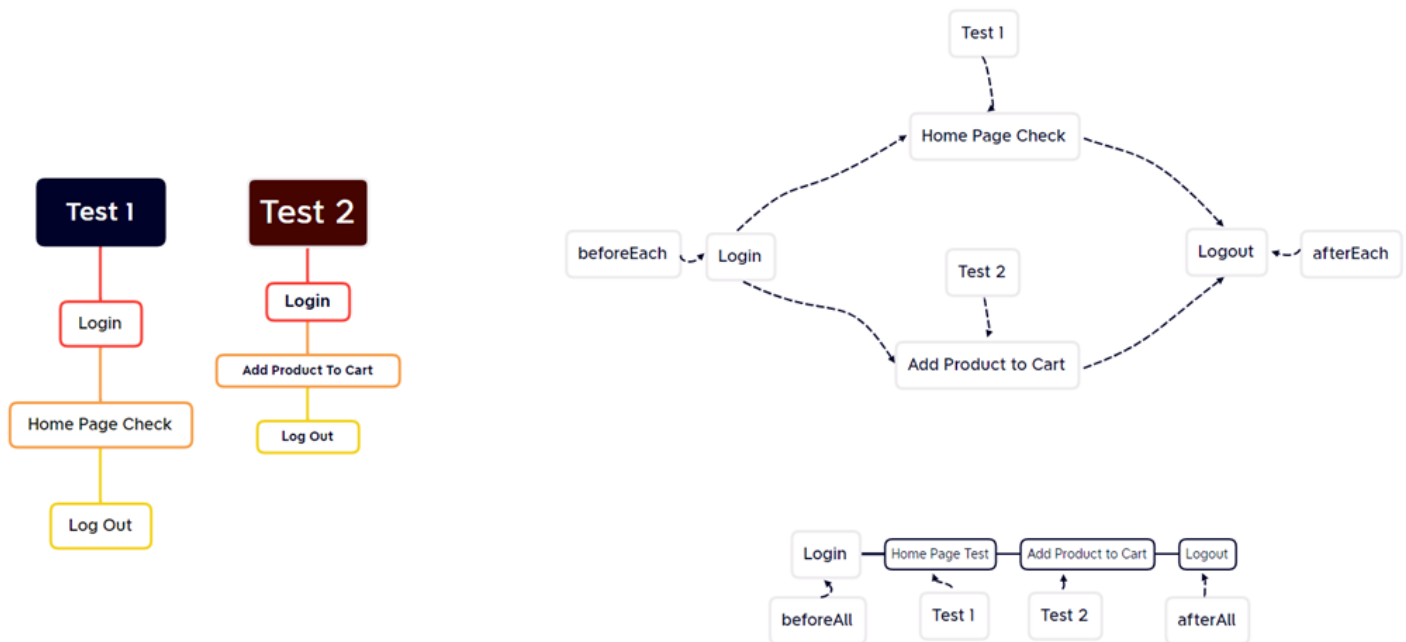
await.page.waitForTimeout(XXXX);
```

```
// Assertion if validation needed
```

```
except await page.locators('Locators').toHaveText('Text' Like: No File Selected)
await.page.waitForTimeout(XXXX);
```



## Hooks - beforeEach, afterEach, beforeAll & afterAll



### Configuration:

playwright.config.js >

```
fullyParallel: false,
```

```
retries: process.env.CI ? 2 : 0,
/* Opt out of parallel tests on CI. */
workers: process.env.CI ? 1 : undefined,
```

### Example to understand: *(This code may not work)*

```
import { test, expect } from '@playwright/test';
```

```
let page; //global variable
```

```
test.beforeEach(async ({ browser }) => { //beforeAll can be used
```

```
page = await browser.newPage(); //creating new page
```

```
//Login
```

```
await page.goto('https://www.saucedemo.com/v1/index.html');
```



```
await page.locator('[data-test="username"]').click();
await page.locator('[data-test="username"]').fill('standard_user');
await page.locator('[data-test="password"]').click();
await page.locator('[data-test="password"]').fill('secret_sauce');
await page.getByRole('button', { name: 'LOGIN' }).click();
}
```

```
import { test, expect } from '@playwright/test';

test('Cart Test', async () => {
  //Add to Cart

  await page.locator('div').filter({ hasText: /\^$29\.99ADD TO CART$/
}).getByRole('button').click();

  await page.locator('div').filter({ hasText: /\^$9\.99ADD TO CART$/
}).getByRole('button').click();
});
```

```
import { test, expect } from '@playwright/test';

test('Cart Test', async () => {
  //Checkout

  await page.getByRole('button', { name: 'ADD TO CART' }).first().click();
  await page.getByRole('link', { name: '3' }).click();
  await page.getByRole('link', { name: 'CHECKOUT' }).click();
  await page.locator('[data-test="firstName"]').click();
  await page.locator('[data-test="firstName"]').fill('edxdds');
  await page.locator('[data-test="lastName"]').click();
  await page.locator('[data-test="lastName"]').fill('csd');
  await page.locator('[data-test="postalCode"]').click();
  await page.locator('[data-test="postalCode"]').fill('sdcsd');
  await page.getByRole('button', { name: 'CONTINUE' }).click();
  await page.getByRole('link', { name: 'FINISH' }).click();
});
```



```
test.afterEach(async () => { //afterAll can be used
//Logout
  await page.getByRole('button', { name: 'Open Menu' }).click();
  await page.getByRole('link', { name: 'Logout' }).click();
});
```

## **Grouping Tests**

```
test.describe('Group 1',()=>{
test 1
test 2
and so on .....
})
test.describe('Group 2',()=>{
test 3
test 4
and so on .....
})
```

## **Screenshots Capture**

```
import { test, expect } from '@playwright/test';
```

```
test('has title', async ({ page }) => {
```

```
  await page.screenshot({path:'path'+'.png'}) // It will replace the current png file.
```

So we need to save png file in such a way that all the screenshot will be saved by different name.

```
});
```

### **// Saving png files with different name**

```
  await page.screenshot({ path:'path like: test\screenshot'+Date.now()+'.png'}) //
By Date.now() function, png file will be saved by adding current timestamp
```



### // Capturing full page

```
await page.screenshot({ path:'Path'+Date.now()+'.png',fullPage:true}) //
```

### // Capturing specific items

```
await page.locator('Locators') .screenshot({path:'Path'+Date.now()+'.png'}) //
```

### // Without command, taking screenshots

Go to **playwright.config.js** >

```
use: {  
  //headless: false,  
  /* Base URL to use in actions like `await page.goto('/')`. */  
  // baseURL: 'http://127.0.0.1:3000',  
  
  /* Collect trace when retrying the failed test. See https://playwright.dev/docs/trace-viewer */  
  trace: 'on-first-retry',  
  screenshot: 'on',  
},
```

Add **screenshot: 'on'**,

This will automatically take screenshot of each command.

**screenshot: 'only-on-failure'** // It will capture if execution fails.

### Video Capture/Record

Go to **playwright.config.js** >

```
use: {  
  //headless: false,  
  /* Base URL to use in actions like `await page.goto('/')`. */  
  // baseURL: 'http://127.0.0.1:3000',  
  
  /* Collect trace when retrying the failed test. See https://playwright.dev/docs/trace-viewer */  
  trace: 'on-first-retry',  
  //screenshot: 'on',  
  video: "on",  
},
```

This will automatically record on every test.

- off - Do not record video.
- 'on' - Record video for each test.



- 'retain-on-failure' - Record video for each test, but remove all videos from successful test runs.
- 'on-first-retry' - Record video only when retrying a test for the first time.

## Trace Viewer

Go to **playwright.config.js** >

- 'on-first-retry' - Record a trace only when retrying a test for the first time.
- 'on-all-retries' - Record traces for all test retries.
- 'off' - Do not record a trace.
- 'on' - Record a trace for each test. (not recommended as its performance heavy)
- 'retain-on-failure' - Record a trace for each test, but remove it from successful test runs.

## Tagging in Playwright

```
import { test, expect } from '@playwright/test';

test('Test login page @sanity', async ({ page }) => {

  // ...

});

test('Test full report @regression', async ({ page }) => {

  // ...

});

test('Test downloading report @regression', async ({ page }) => {

  // ...

});
```

To run tagged test by terminal:

***npx playwright test --grep @regression***



## Annotations:

- [test.skip\(\)](#) marks the test as irrelevant. Playwright Test does not run such a test. Use this annotation when the test is not applicable in some configuration.

```
test.skip('skip this test', async ({ page }) => {

  // This test is not run

});
```

### **// Conditionally**

```
test('skip this test', async ({ page, browserName }) => {

  test.skip(browserName === 'firefox', 'Still working on it');

});

||

test('skip this test', async ({ page, browserName }) => {

  if (browserName == 'chromium')

  {

    test.skip()

  }

});
```

- [test.fail\(\)](#) marks the test as failing. Playwright Test will run this test and ensure it does indeed fail. If the test does not fail, Playwright Test will complain.

```
test('skip this test', async ({ page, browserName }) => {
  if (browserName == 'chromium')
  {

    test.fail()

  }
  expect(1).toBe(2);  });
```

- [test.fixme\(\)](#) marks the test as failing. Playwright Test will not run this test, as opposed to the fail annotation. Use fixme when running the test is slow or crashes.
- [test.slow\(\)](#) marks the test as slow and triples the test timeout.



### **//Execute Focused Test**

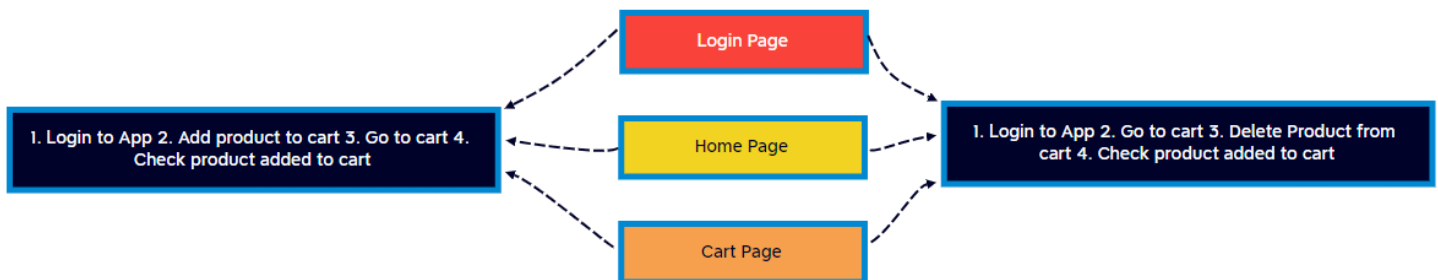
```
test.only('focus this test', async ({ page }) => {  
  // Run only focused tests in the entire project.  
});
```





## Page Object Model in Playwright

### Page Object Model Example



```
import { test, expect } from '@playwright/test';
```

```
test('has title', async ({ page }) => {
```

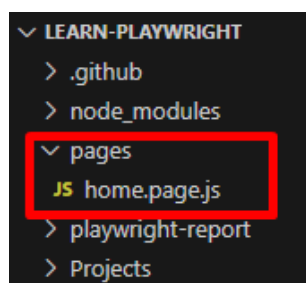
```
  //Login
```

```
  //Home
```

```
  //Cart
```

```
});
```

- ❖ Need to create a folder under playwright project
- ❖ Under the folder above page object file for each web page  
For Example:





```
//home.page.js

import { expect, Locator, Page } from '@playwright/test';

export class BrowserstackHomePage {

  readonly url ="https://www.browserstack.com/";

  readonly page: Page;

  readonly browserstackLogo: Locator;

  readonly productsMenu: Locator;

  readonly productmenudropdown:Locator


  constructor(page: Page) {

    this.page = page;

    this.browserstackLogo = page.locator('#logo');

    this.productsMenu = page.locator('#product-menu-toggle');

    this.productmenudropdown = page.locator('#product-menu-dropdown >div > ul >li >a >div[class="dropdown-link-heading"]');

  }

  async goto(){

    await this.page.goto(this.url);

  }

  async clickOnProducts(){

    await this.productsMenu.waitFor({state:"visible"});

    await this.productsMenu.click();

  }

}
```



- ❖ Create test file under tests folder

```
// home.test.js
```

```
import { test, expect } from '@playwright/test';
```

```
import { BrowserstackHomePage } from '../pages/home.page'; // To create a test, we need to import the page object file.
```

```
test('Browserstack homepage verification', async ({ page }) => {
```

```
  const homepage = new BrowserstackHomePage(page);
```

```
  await homepage.goto();
```

```
  await homepage.clickOnProducts();
```

```
  await expect(homepage.productmenudropdown).toContainText(["Live", "Automate",  
"Percy", "App Live", "App Automate"])
```

```
});
```



## **Multiple Pages / Windows**

```
const {test, expect, chromium} = require('@playwright/test');
test('Handle Pages/Windows', async () => {

    const browser = await chromium.launch
    const context=await browser.newContext()
    const page1 = await context.newPage()
    const page2 = await context.newPage()
    const allPages = context.pages()
    console.log("No of pages created:",allPages.length)

    await page1.goto('URL1');
    // Two new window will be opened on browser
    await page2.goto('URL2');

})
```

### **// Navigate one window to another**

```
const {test, expect, chromium} = require('@playwright/test');
test('Handle Pages/Windows', async () => {

    const browser = await chromium.launch
    const context=await browser.newContext()
    const page1 = await context.newPage()
    await page1.goto('URL1')
    const pagePromise = context.waitForEvent('page')
    await page1.locator('Locators').click()

    const newPage = await pagePromise;
    await newPage.locator('Locators').click()
```



## Rest API Testing

```
// POST:
const REPO = 'test-repo-1';
const USER = 'github-username';

test('should create a bug report', async ({ request }) => {
  const newIssue = await request.post(`${baseURL}/${USER}/${REPO}/issues`, {
    data: {
      title: '[Bug] report 1',
      body: 'Bug description',
    }
  });
});

// GET
test("Get users", async ({ request, baseURL }) => {
  const _response = await request.get(`${baseURL}public/v2/users/`);
  expect(_response.ok()).toBeTruthy();
  expect(_response.status()).toBe(200);
  console.log(await _response.json());
});

// Passing query parameters
test("Get one user", async ({ request, baseURL }) => {
  const _response = await request.get(`${baseURL}public/v2/users/`, {
    params: {
      id: 5229,
    },
  });
  expect(_response.ok()).toBeTruthy();
  expect(_response.status()).toBe(200);
  console.log(await _response.json());
});

// Updating a resource (PUT).
test("Update a user", async ({ request, baseURL }) => {
  const response = await request.put(`${baseURL}public/v2/users/5721`, {
    data: {
      name: "Zambo",
    },
  });
  expect(response.ok()).toBeTruthy();
  expect(response.status()).toBe(200);
  console.log(await response.json());
});

// Deleting a resource
test("Delete a user", async ({ request, baseURL }) => {
  const response = await request.delete(`${baseURL}public/v2/users/5217`);
  headers: {
    'Accept': 'application/vnd.github.v3+json',
    // Add GitHub personal access token.
    'Authorization': `token ${process.env.API_TOKEN}`,
  }
  expect(response.ok()).toBeTruthy();
  expect(response.status()).toBe(204);
});
```

