

Official website: <https://www.cypress.io/>

<https://docs.cypress.io/guides/overview/why-cypress>

Note: cypress only supports `css selectors`

Syntax: #id, .class

To write css for parent to child – use space

Cypress Step-by-Step Installation:

What is Node.js?

Node.js is an open-source, cross-platform, backend JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser.

Pre-requisites:

1. Download Node.js
2. Download Visual Studio Code

Step1: Create a new project with “Package.json”

1. A “package.json” is a JSON file at the root of a JavaScript/Node project.
2. It holds metadata relevant to the project and is used for managing project dependencies.
3. From <root_folder> where package.json is present from there hit “npm install” to install all dependencies

Note:

- Make a New Directory -- `mkdir automation-cypress.`
- Change Directory -- `cd..`
- Create a “package.json” file using the “`npm -i init`” command. And do not forget to hit enter.
- To update npm use the command “`npm install -g npm`”

Install Cypress:

Installing: “`npm install`”

Install Cypress via npm [if cypress version is given in package.json]: “`npm install cypress`”

To save or create the entry in package.json use the command “`npm install <package name> --save-dev`”:
`npm install cypress --save-dev`

```
PS C:\Users\ARUKASAR\OneDrive - Capgemini\Desktop\automation-cypress> npm -i init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help init` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.
>> C:\Users\ARUKASAR\OneDrive - Capgemini\Desktop\automation-cypress>

added 175 packages, and audited 176 packages in 3m

39 packages are looking for funding
  run `npm fund` for details

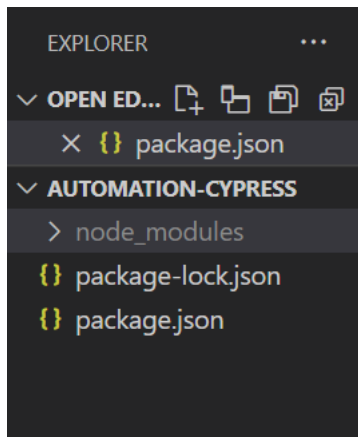
found 0 vulnerabilities
PS C:\Users\ARUKASAR\OneDrive - Capgemini\Desktop\automation-cypress> |
```

```
{ } package.json X
{ } package.json > ...
1  {
2    "name": "automation-cypress",
3    "version": "1.0.0",
4    "description": "",
5    "main": "index.js",
   ▶ Debug
6    "scripts": {
7      "test": "echo \"Error: no test specified\" && exit 1"
8    },
9    "author": "",
10   "license": "ISC",
11   "devDependencies": {
12     "cypress": "^13.8.1"
13   }
14 }
15
```

After Step1

Step2: "package-lock.json" will create automatically

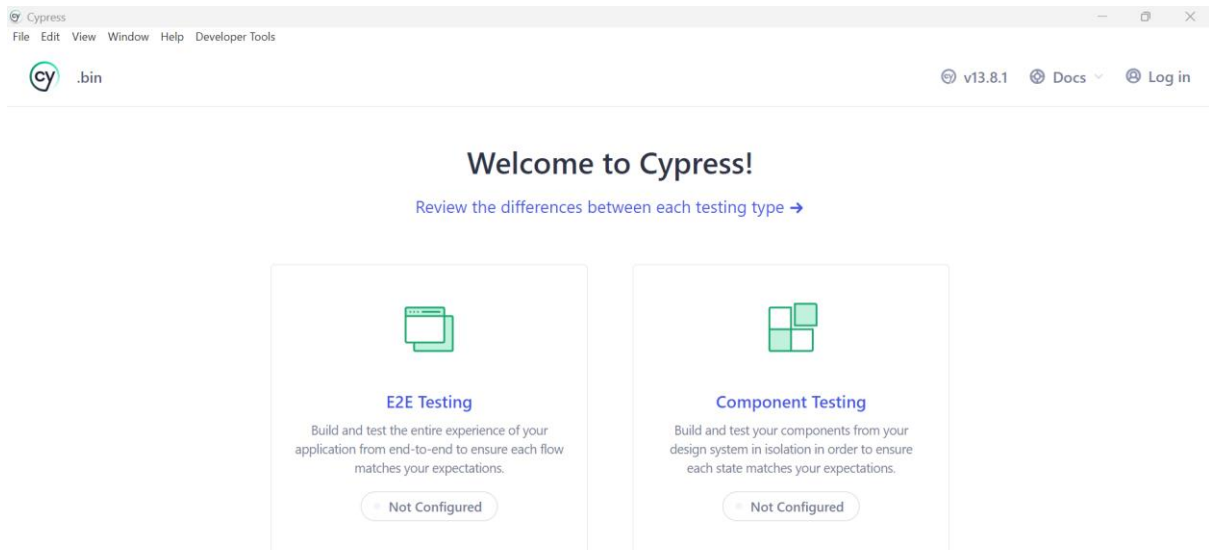
Step3: The "node_modules" folder also will be created automatically.



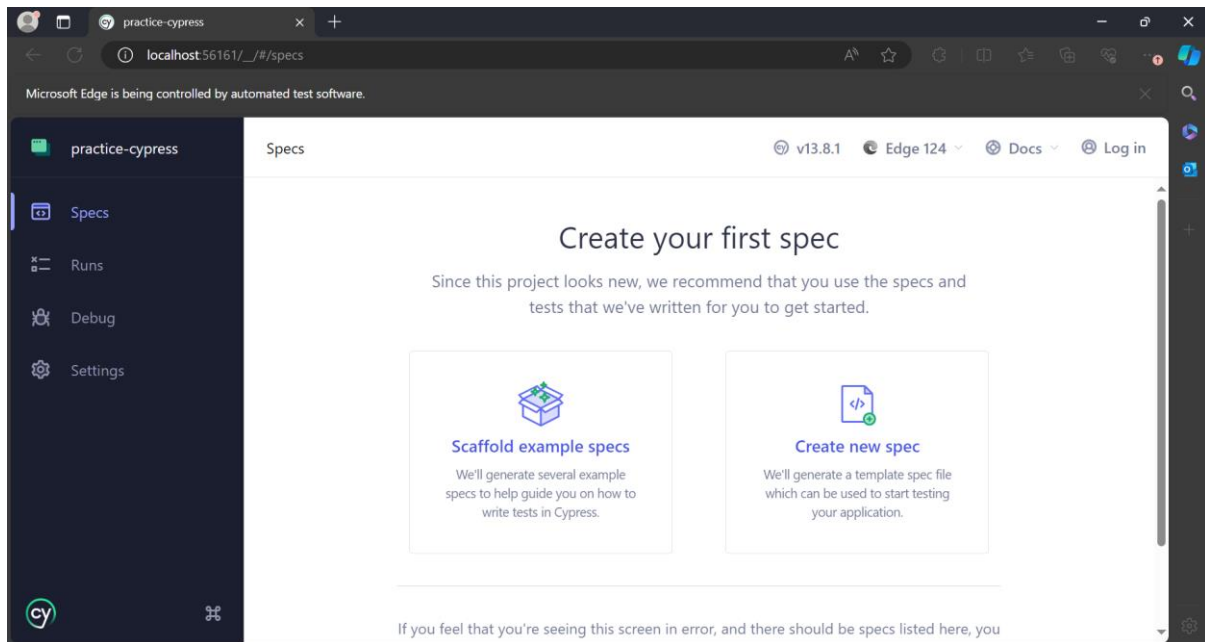
After Step2 and 3

Step4: To run cypress use the command “npx cypress open” or refer:

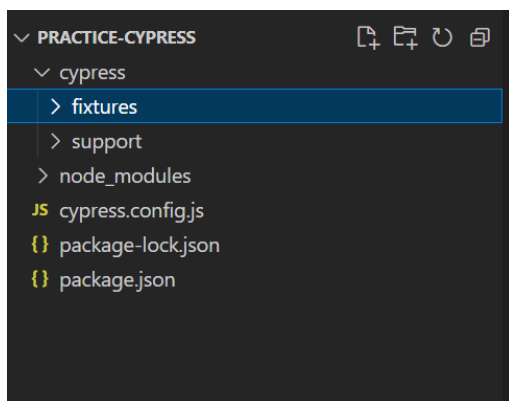
<https://docs.cypress.io/guides/getting-started/opening-the-app>



- Click on E2E Testing and then continue.



- Cypress folder is created automatically:



-
- ★ Write our first test case:

Write test cases inside cypress folder which was created automatically.

Save the test cases file using `.js` extension

Now it's time to write your first test. We're going to:

- Write your first passing test.
- Update it so it fails.
- Watch Cypress reload in real time.

```
/*Describe take two arguments
1. About description
2. Function that wraps all its blocks

it
1. description
2. function
```

```
For example:
describe('My First Test', () => {
  it('My first test case', () => {
    //test step
  })
  it('My second test case', () =>{
    //test step
  })
})

*/
```

Syntax:

```
1  describe('My First Test', () => {
2
3      it('My first test case', () => {
4
5          //test step
6
7      })
8
9      it('My second test case', () =>{
10
11          //test step
12
13      })
14
15  })
```

```

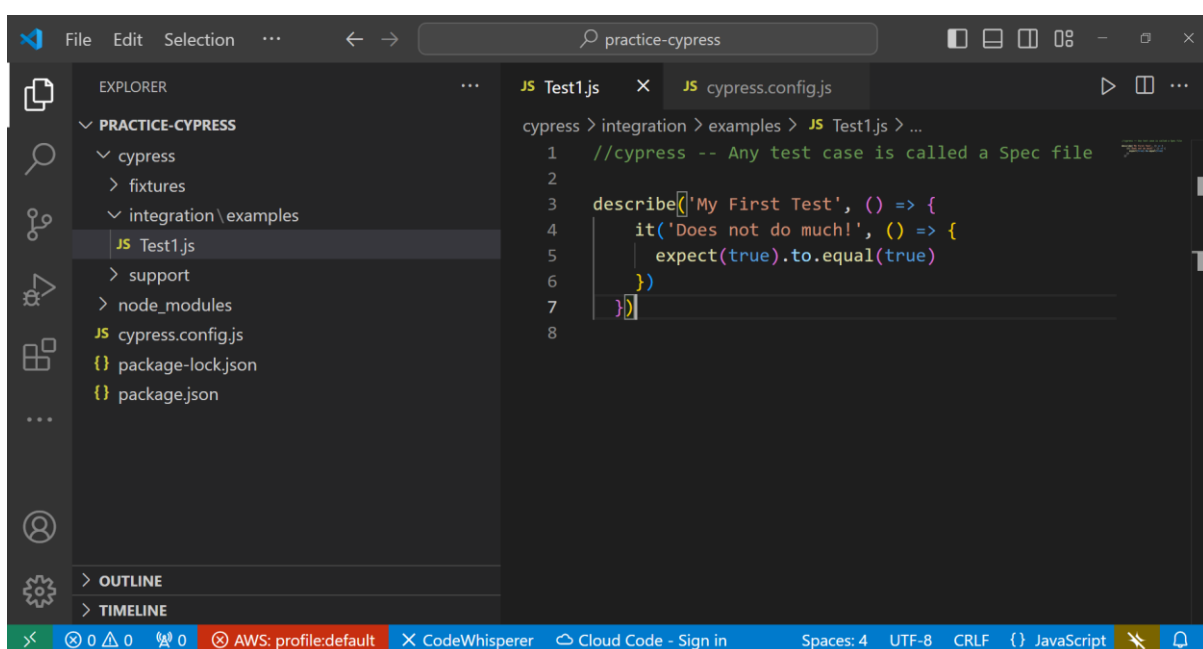
> JS Test2.js > describe('My First Test') callback > it('My second test case')
1  describe('My First Test', function() {
2
3      it('My first test case', function() {
4
5          //test step
6
7      })
8
9      it('My second test case', function(){
10
11          //test step
12
13      })
14
15  })

```

Open your favorite IDE and replace the contents of your spec with the code below.

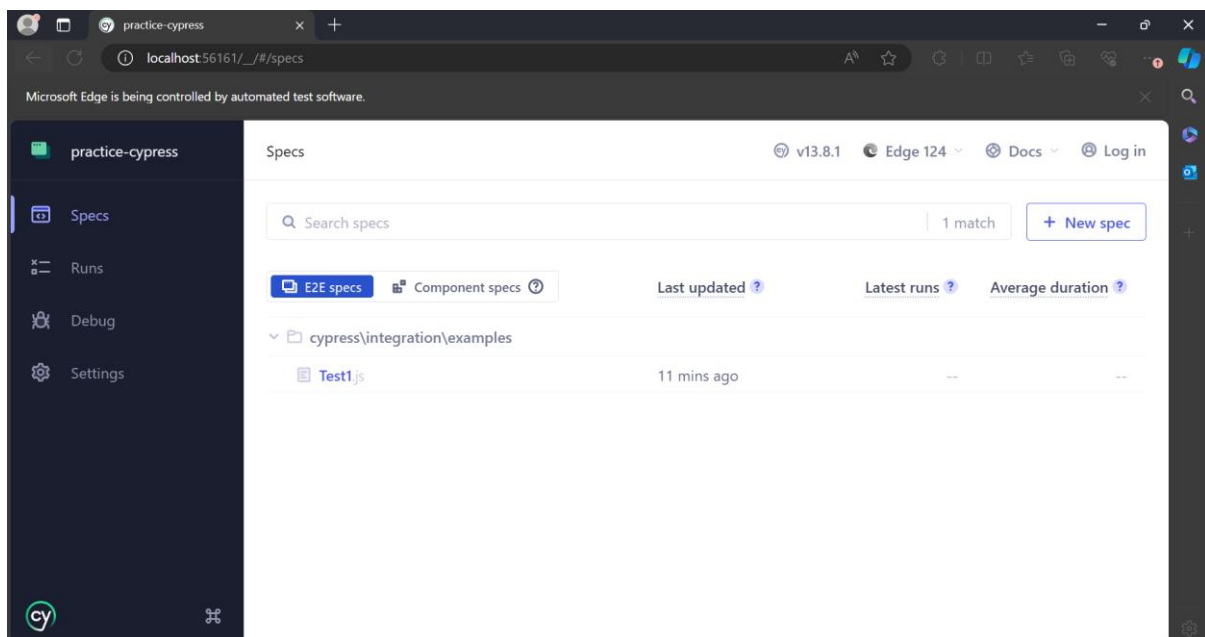
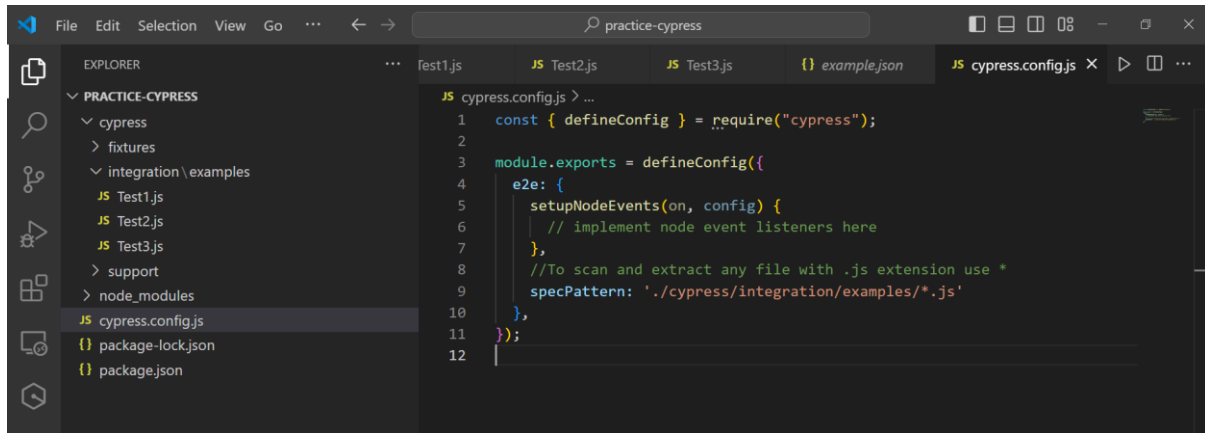
```
//cypress -- Any test case is called a Spec file
```

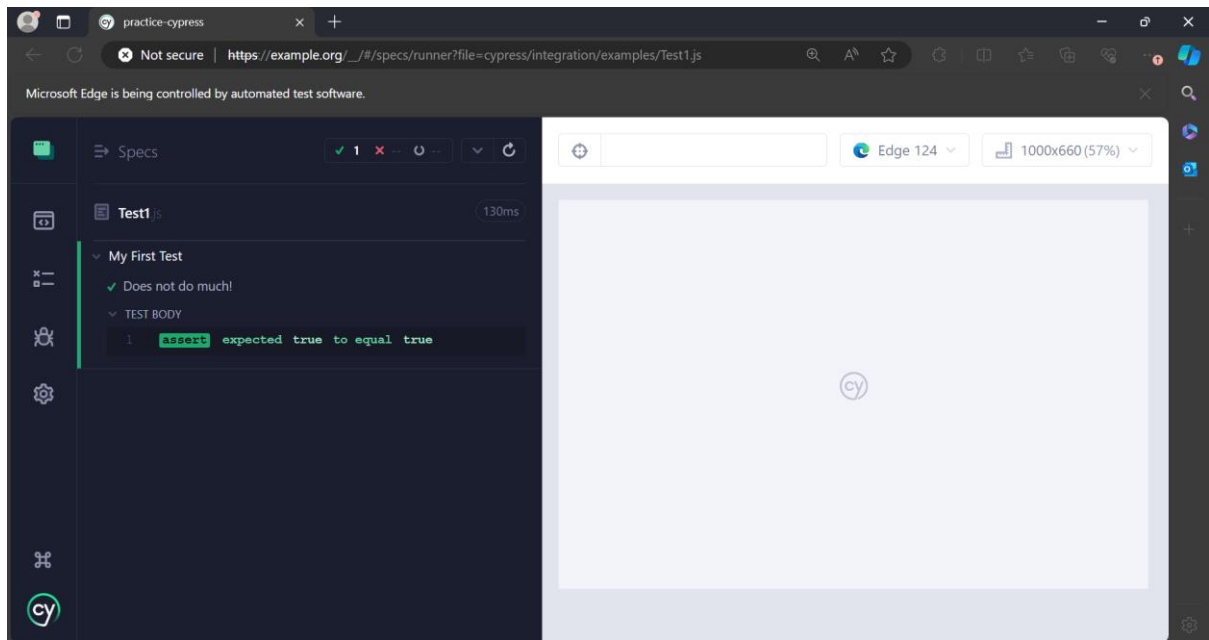
In this dummy test case: Although it doesn't do anything useful, this is our first passing test! ☒



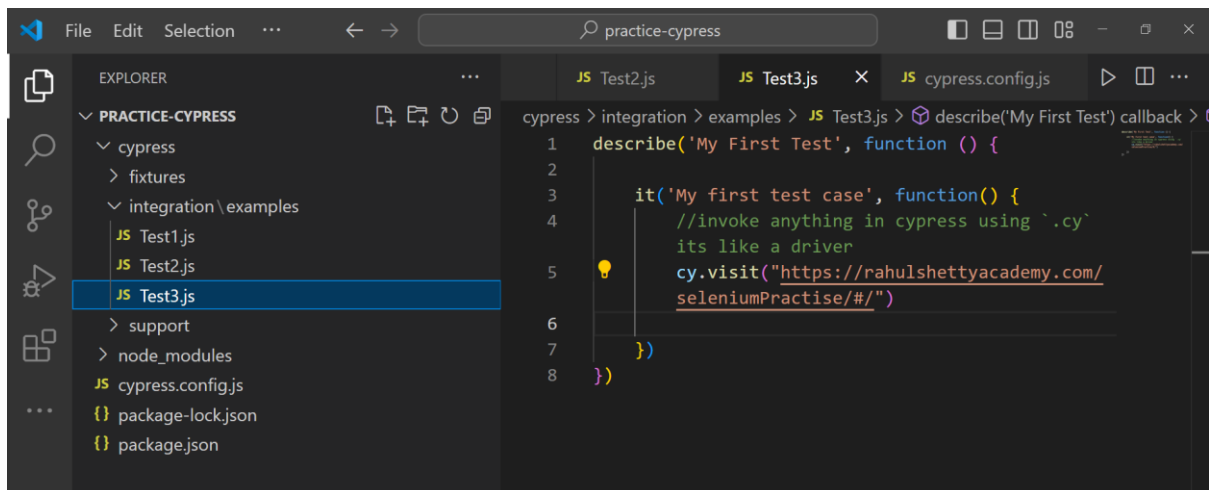
To tell the test runner where your test cases have been written we need to give path in “**config.json** file”

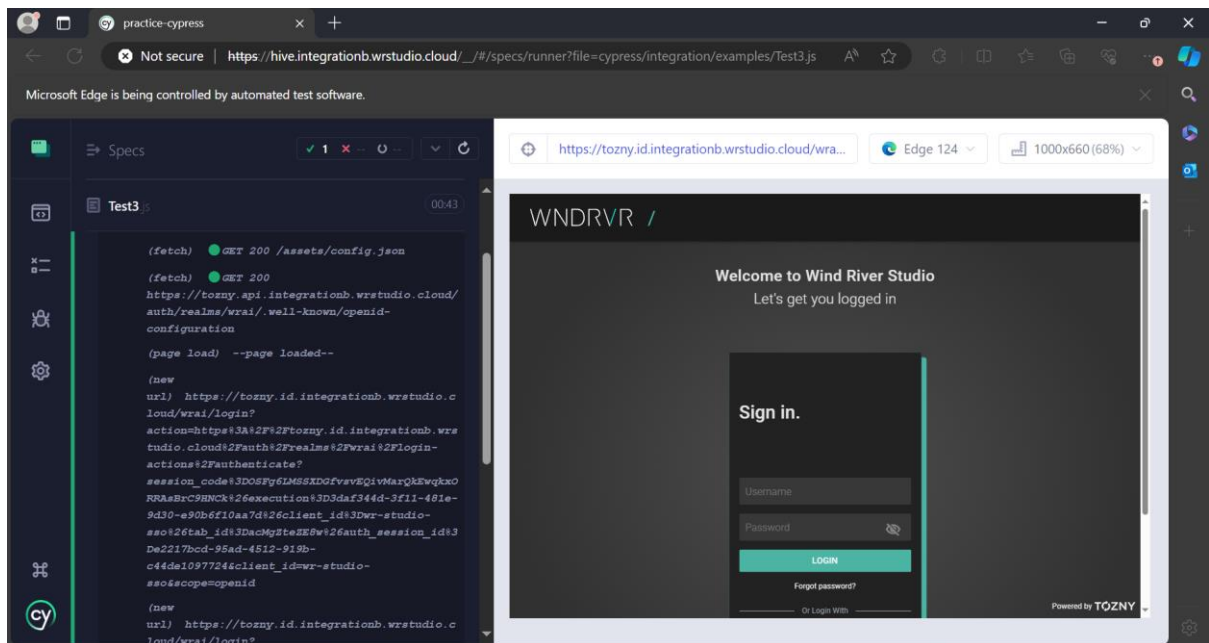
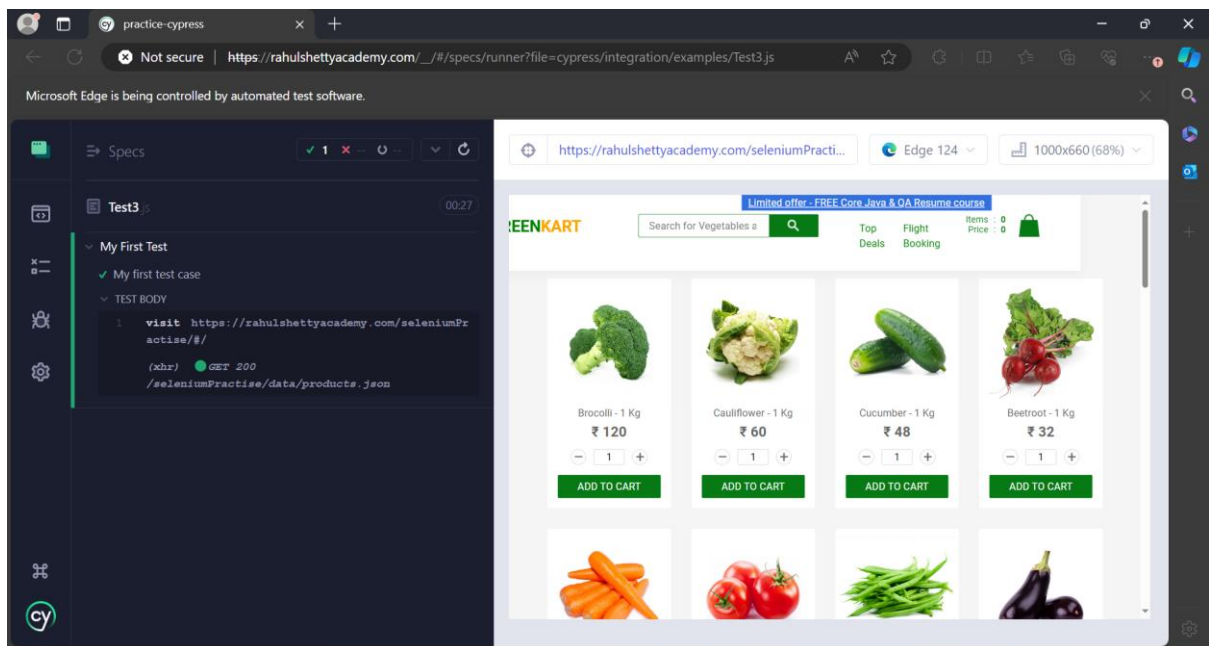
```
Add new field: //To scan and extract any file with .js extension use *  
specPattern: './cypress/integration/examples/*.js'
```





First test case:





How to run tests from cmd?

`.\node_modules\.bin\cypress run`

It will execute all the test cases without opening any browser automatically.

The screenshot shows the VS Code interface with the Explorer view on the left displaying the project structure. The Terminal view on the right shows the output of the Cypress command. The output includes the command being run, the DevTools listening URL, and a summary of the test run.

```
PS C:\Users\arukasar\practice-cypress> .\node_modules\.bin\cypress run

DevTools listening on ws://127.0.0.1:55186/devtools/browser/d562f800-13e4-4c64-a750-7a4effe6f0d8

=====

(Run Starting)

Cypress:      13.8.1
Browser:      Electron 118 (headless)
Node Version: v18.16.1 (C:\Program Files\nodejs\node.exe)
Specs:        3 found (Test1.js, Test2.js, Test3.js)
Searched:     ./cypress/integration/examples/*

Running: Test1.js

=====

(Run Finished)

Spec                                Tests  Passing  Failing  Pending  Skipped
✓ Test1.js                          425ms   1         1        -        -        -
✓ Test2.js                          724ms   4         4        -        -        -
✓ Test3.js                          00:13   1         1        -        -        -
✓ All specs passed!                  00:14   6         6        -        -        -

PS C:\Users\arukasar\practice-cypress>
```

`.\node_modules\.bin\cypress run --headed`

It will automatically invoke electron browser and run all the test cases after completion it will close itself.

The screenshot shows the VS Code interface with the Explorer view on the left displaying the project structure. The Terminal view on the right shows the output of the Cypress command with the --headed flag. The output includes the command being run, the DevTools listening URL, and a detailed view of the test results.

```
PS C:\Users\arukasar\practice-cypress> .\node_modules\.bin\cypress run --headed

DevTools listening on ws://127.0.0.1:55689/devtools/browser/325afb47-539a-44ad-8a6e-333e8cdd1504

=====

(Run Starting)

Cypress:      13.8.1
Browser:      Electron 118
Node Version: v18.16.1 (C:\Program Files\nodejs\node.exe)
Specs:        3 found (Test1.js, Test2.js, Test3.js)
Searched:     ./cypress/integration/examples/*

Running: Test1.js (1 of 3)

My First Test
  ✓ Does not do much! (116ms)

1 passing (157ms)

(Results)
```

```
.\node_modules\.bin\cypress run --browser <name>
```

----- Framework:

By hitting: cypress open

cypress

1. fixtures -- responsible to store test data, if your test case have some data, it should be extracted from external files for ex: xml, json etc.

2. e2e -- this is used to write test cases

3. plugin -- not much used, listeners like maximize window and give error message, to handle cypress events etc.

4. support -- write reusable methods, so that e2e test cases can use it.
file Support/command.js

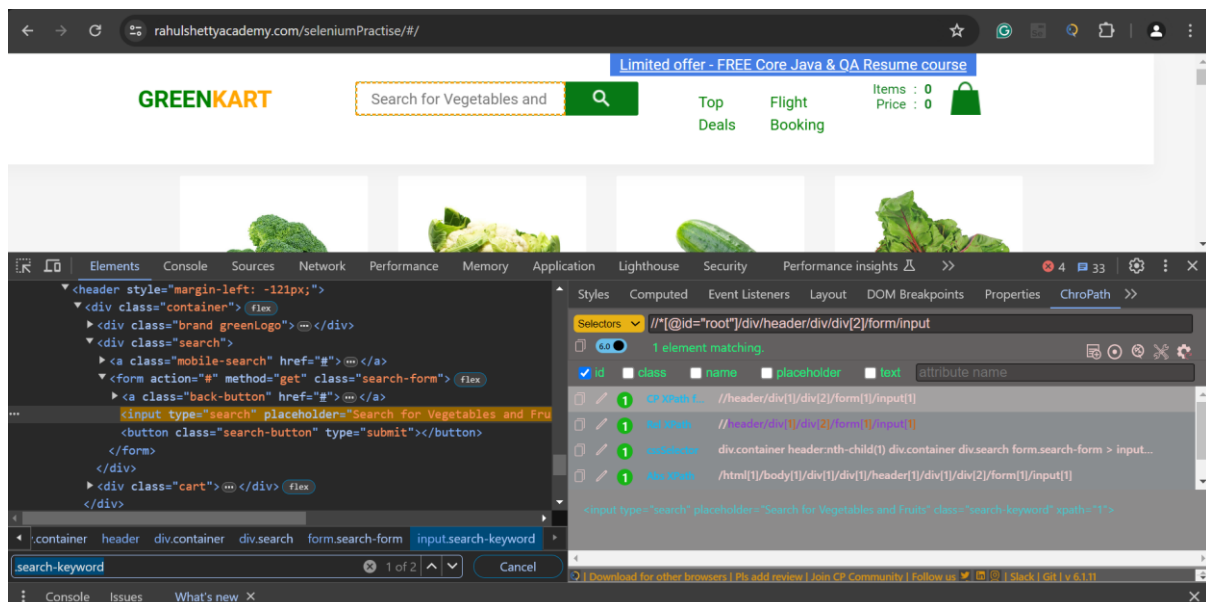
cypress.config.json -- auto-generated when you open cypress 1st time. Configuration file for entire framework.8

For example:

//To scan and extract any file with .js extension use *
specPattern: './cypress/integration/examples/*.js'

Locators [CSS Selector only]

Extension--chropath



	A	B	C
1	Cypress-CSS Selectors		
2			
3	id	#id	#search-keyword
4	classname	.classname	.search-keyword
5		tagname.classname	
6	traverse using tagname from parent-to-child	parentTagname childTagname	form input
7	customize with any attribute type	tagname[attribute=value]	input[type='search']

To get auto-suggestion under testcase file write:

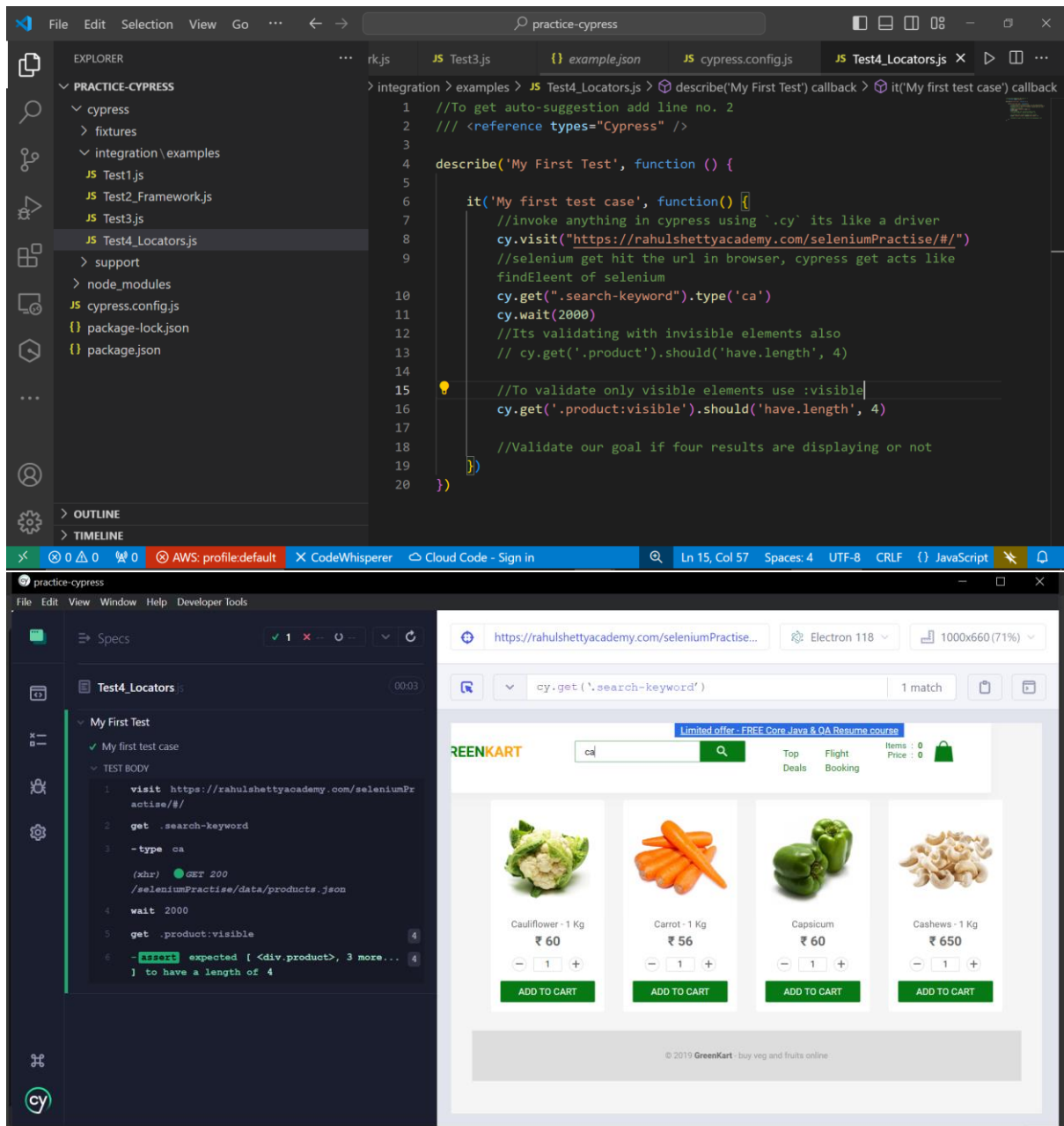
```
//To get auto-suggestion add line no. 2
/// <reference types="Cypress" />
```

With Locator TestCase:

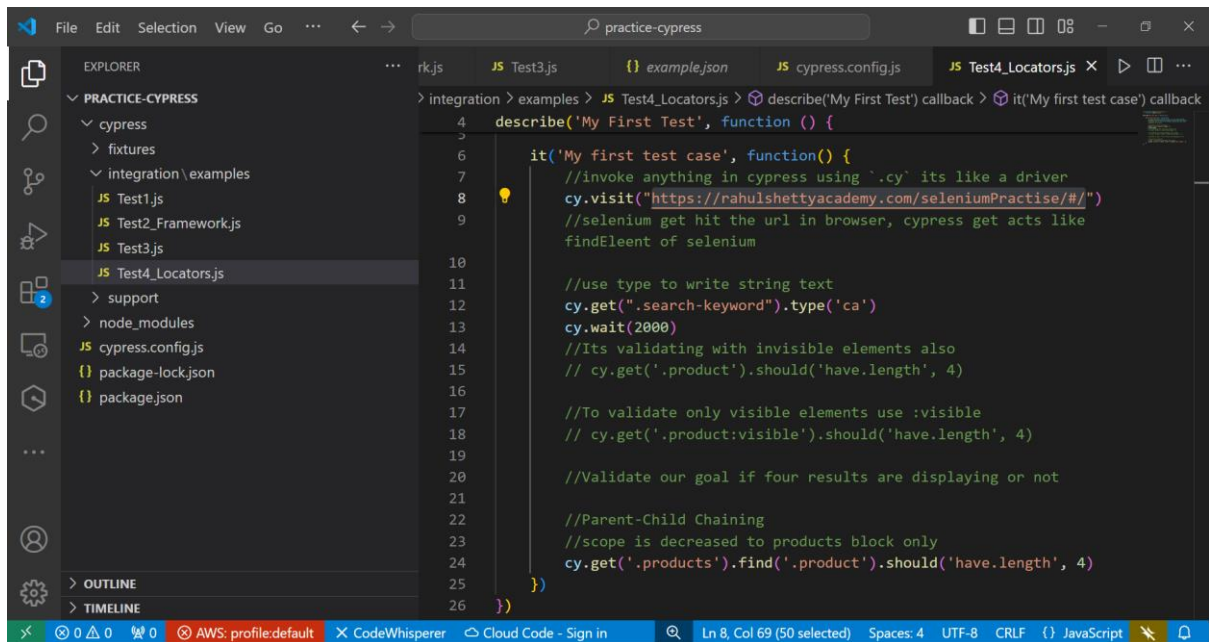
The image shows a development environment with VS Code and Cypress. The top part shows the VS Code editor with a file explorer on the left and a code editor on the right. The code editor displays a Cypress test file named `Test4_Locators.js` with the following content:

```
1 //To get auto-suggestion add line no. 2
2 /// <reference types="Cypress" />
3
4 describe('My First Test', function () {
5
6   it('My first test case', function() {
7     //invoke anything in cypress using '.cy' its like a driver
8     cy.visit("https://rahulshettyacademy.com/seleniumPractise/#/")
9     //selenium get hit the url in browser, cypress get acts like
10    findEleent of selenium
11    cy.get(".search-keyword").type('ca')
12    cy.wait(2000)
13    cy.get('[.product]').should('have.length', 4)
14
15    //Validate our goal if four results are displaying or not
16  })
17 })
```

The bottom part shows the Cypress test runner interface. The left sidebar displays the test file `Test4_Locators.js` with a red error message: `AssertionError` `Timed out retrying after 4000ms: Too many elements found. Found '5', expected '4'.` The right pane shows the browser view of the test application, which is a search page for vegetables. The search bar contains the text `cy.get('.search-keyword')` and the results show 1 match.



Parent-Child Chaining



First UI Test Case: Test4_Locators.js

```
//To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My First Test', function () {

  it('My first test case', function() {
    //invoke anything in cypress using `.cy` its like a driver
    cy.visit("https://rahulshettyacademy.com/seleniumPractise/#/")
    //selenium get hit the url in browser, cypress get acts like
    findEleent of selenium

    //use type to write string text
    cy.get(".search-keyword").type('ca')
    cy.wait(2000)
    //Its validating with invisible elements also
    // cy.get('.product').should('have.length', 4)

    //To validate only visible elements use :visible
    // cy.get('.product:visible').should('have.length', 4)

    //Validate our goal if four results are displaying or not

    /*Parent-Child Chaining
    scope is decreased to products block only*/
    // cy.get('.products').find('.product').should('have.length', 4)

    /*
```

```

    methods: contains, equal, find and get
    Click on Add to Cart
    and resolving the promise
    */

    cy.get('.products').find('.product').eq(2).contains('ADD TO
CART').click().then(function(){
        console.log("Hello Cypress")
    })

    /* Req: Grab all the product name and add only capsicum when its found
    iterate where capsicum is present
    Method: each*/

    /*
    To RE-USE LOCATORS EVERYTIME
    // Aliases: part of optimization, to act as a variable
    cy.get('.products').as('productsLocator')
    //Before
    cy.get('.products').find('.product').should('have.length', 4)
    //After
    cy.get('@productsLocator').find('.product').should('have.length', 4)
    */

    // Aliases: part of optimization, to act as a variable
    cy.get('.products').as('productsLocator')

    cy.get('@productsLocator').find('.product').each(($e1, index, $list)
=> {

        const textVEG = $e1.find('h4.product-name').text()
        if(textVEG.includes('Cashew'))
        {
            //with .find click method is depreciated so wrap it using
cy.wrap() method
            cy.wrap($e1).find('button').click()

            console.log('HelloWorld')
        }
    })

    //DO NOT USE
    /*
    const logo = cy.get('.brand')
    //To print something we use method: cy.log()
    cy.log(logo.text())
    */

```



```

    //this is to assert if logo text is correctly displayed
    cy.get('.brand').should('have.text', 'GREENKART')

    //this is to print in logs
    //DO USE
    cy.get('.brand').then(function(logoelement)
    {
        //To print something we use method: cy.log()
        cy.log(logoelement.text())
    })

    })
})

```

Test5.js

```

//To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My Second Test', function () {

    it('My second test case', function() {
        //invoke anything in cypress using `.cy` its like a driver
        cy.visit("https://rahulshettyacademy.com/seleniumPractise/#/")

        cy.get(".search-keyword").type('ca')
        cy.wait(2000)

        cy.get('.products').as('productsLocator')

        cy.get('@productsLocator').find('.product').each(($e1, index, $list)
=> {

            const textVEG = $e1.find('h4.product-name').text()
            if(textVEG.includes('Cashews'))
            {
                cy.wrap($e1).find('button').click()
            }
        })
        cy.get('.cart-icon').click()
        // Locator of PROCEED TO CHECKOUT--('button[css="1"]')
        cy.contains('PROCEED TO CHECKOUT').click()
        cy.contains('Place Order').click()
    })
})

```

```
} )  
})
```

My Understanding:

Here's how you can structure your Cypress test suites and API endpoints for the mentioned modules:

****API Endpoints:****

- ****architectures.js****: Defines API endpoints related to architectures.
- ****bsp.js****: Contains API endpoints for BSP (Board Support Packages).
- ****networkInterface.js****: Includes API endpoints related to network interfaces.

****Alternative URLs:****

- ****routes.js****: Contains alternative URLs for the vLab module.

****Page Objects:****

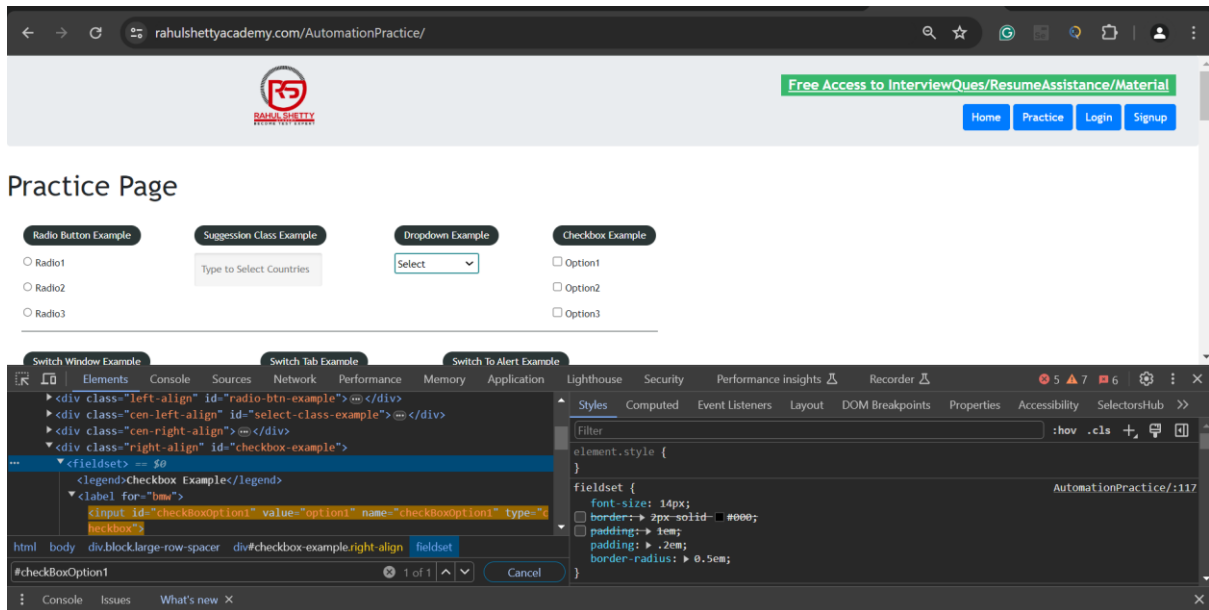
- ****Common Components****:
 - ****navBar.js****: Defines navigation bar elements with locators and keywords.
 - ****sideNav.js****: Contains locators and keywords for the side navigation.
- ****Pages****:
 - ****common****: Page elements common across different modules.
 - ****vLab****: Page elements specific to the vLab module.
 - ****vLabAdministration****: Page elements related to vLab administration.

****Test Cases:****

- ****testSuites****: Contains test suites covering various scenarios.
- ****vLabAdministration****: Test cases specifically for vLab administration.
- ****vLabMenu****: Test cases related to the vLab menu functionality.

In your Cypress setup, you can organize your code according to these modules and folders for easier navigation and maintenance.

How to write CSS for checkboxes



```
cy.get('input[type="checkbox"]')
```

```
//To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My Third Test', function () {

  it('My Third test case', function() {
    //invoke anything in cypress using `.cy` its like a driver
    cy.visit("https://rahulshettyacademy.com/AutomationPractice/")

    /*verify if the checkbox is check or not
    validate if option1 is clicked or not*/

    //First: It will check option1
    cy.get('#checkBoxOption1').check().should('be.checked').and('have.value','option1')

    //Second: It will uncheck option1
    cy.get('#checkBoxOption1').uncheck().should('not.be.checked')

    //Third: It will check option2 and 3
    cy.get('input[type="checkbox"]').check(['option2','option3'])

    //Four: It will uncheck option2 and 3
```

```

        cy.get('input[type="checkbox"]').unchecked().should('not.be.checked')

    })
})

```

When dealing with dynamic dropdowns, if the options disappear after typing an individual text into a search box, you can use the inspect option in your browser's developer tools to identify the CSS path of the elements.

```

//To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My Fourth Test', function () {

    it('My Fourth test case', function() {
        //invoke anything in cypress using `.cy` its like a driver
        cy.visit("https://rahulshettyacademy.com/AutomationPractice/")

        /*
        dynamic dropdowns -- means options will be displayed based on inputs
        provides
        [tagname: select] static dropdowns -- means we can select from the
        given suggestions
        */

        //Static Dropdowns
        cy.get('select').select('option2').should('have.value', 'option2')

        //Dynamic dropdowns
        cy.get('#autocomplete').type('ind')
        cy.get('.ui-menu-item div').each(($el, index, $list) => {

            if($el.text()=== "India")
            {
                $el.click()
            }
        })
        //verifying if its have value as india or not
        cy.get('#autocomplete').should('have.value', 'India')

    })
})

```

Hide and Show

```
//To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My Third Test', function () {

  it('My Third test case', function() {
    //invoke anything in cypress using `.cy` its like a driver
    cy.visit('https://rahulshettyacademy.com/AutomationPractice/')

    cy.get("#displayed-text").should('be.visible')
    cy.get("#hide-textbox").click()

    cy.get("#displayed-text").should('not.be.visible')
    cy.get("#show-textbox").click()
    cy.get("#displayed-text").should('be.visible')

  })
})
```

Alert:

```
// To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My Fifth Test', function () {

  it('My Fifth test case', function() {
    // invoke anything in cypress using `.cy` its like a driver
    cy.visit('https://rahulshettyacademy.com/AutomationPractice/')

    // cypress auto accepts alerts
    cy.get('#alertbtn').click()
    cy.get('#confirmbtn').click()

    // window:alert

    cy.on('window:alert', (str)=>{

      // how to compare two str
      expect(str).to.equal('Hello , share this practice page and share
your knowledge')
    })
  })
})
```

```

    // window:confirm
    cy.on('window:confirm', (str)=>{

        // how to compare two str
        expect(str).to.equal('Hello , Are you sure you want to confirm?')
    })

    })
  })
})

```

Navigate to another domain

```

// To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My six Test', function () {

    it('My Six test case', function() {
        // invoke anything in cypress using `.cy` its like a driver
        cy.visit("https://rahulshettyacademy.com/AutomationPractice/")

        // Because every child url have target attribute in they html
        cy.get('#opentab').invoke('removeAttr','target').click()

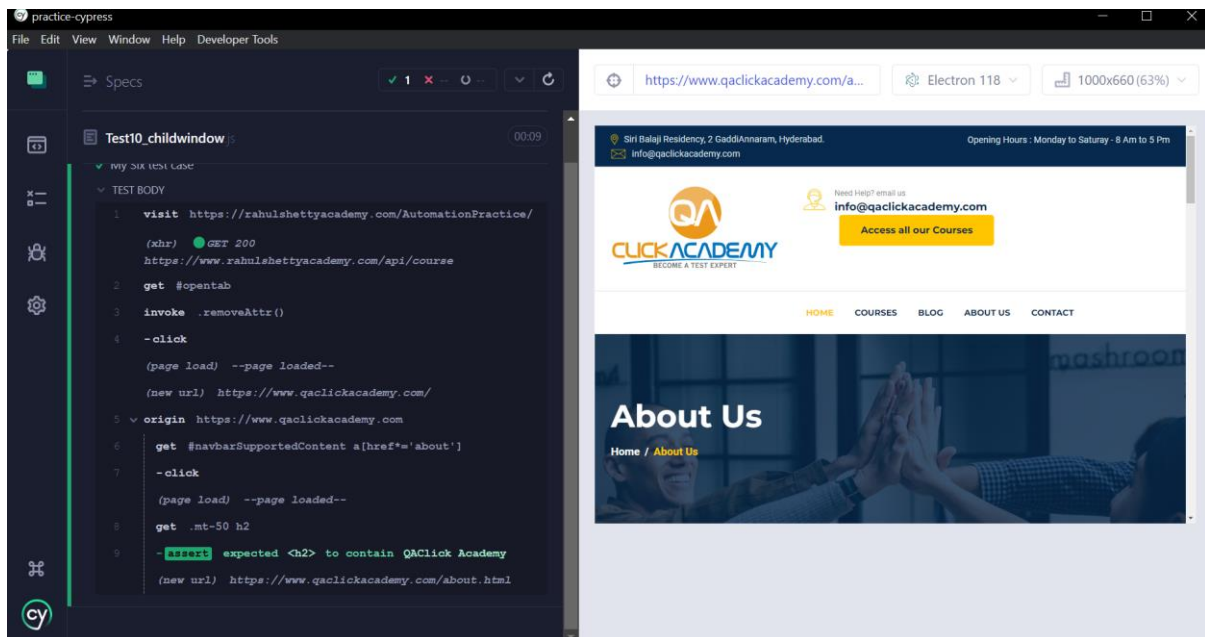
        /*
        to further automate things on the next page do follow the thing below:
        cy.origin("<next page url>", ()=>
        {
            //code
        })
        */

        cy.origin("https://www.qaclickacademy.com", ()=>
        {
            cy.get("#navbarSupportedContent a[href*='about']").click()
            cy.get(".mt-50 h2").should('contain','QAClick Academy')
        })

    })

})

```



	A	B	C
1	Way to Write Cypress-CSS Selectors		
2			
3	id	#id	#search-keyword
4	classname	.classname	.search-keyword
5		tagname.classname	
6	traverse using tagname from parent-to-child	parentTagname childTagname	form input
7	customize with any attribute type	tagname[attribute=value]	input[type='search']
8	nth-child		tr td:nth-child(2)

Tables:

The screenshot shows a web application with a table of course information. The table has the following data:

Instructor	Course	Price
Rahul Shetty	Selenium WebDriver with Java Basics + Advanced + Interview Guide	30
Rahul Shetty	Learn SQL In Practical + Database Testing from Scratch	25
Rahul	Appium (Selenium) - Mobile	20

The Cypress test runner interface is visible at the bottom, showing the DOM tree and the selected element (tr td:nth-child(2)).

```

// To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

```

```

describe('My seventh Test', function () {

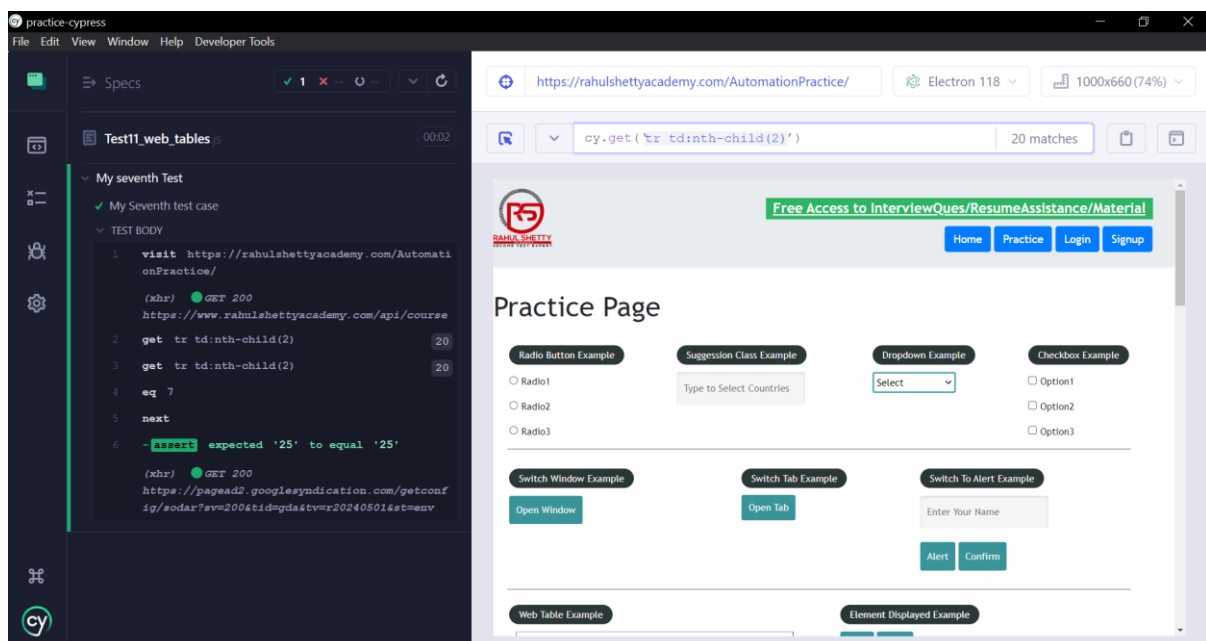
  it('My Seventh test case', function() {
    // invoke anything in cypress using `.cy` its like a driver
    cy.visit("https://rahulshettyacademy.com/AutomationPractice/")

    //get the specific column data

    cy.get('tr td:nth-child(2)').each(($e1, index, $list) => {

      const text = $e1.text()
      if(text.includes('Python'))
      {
        // how to find next sibling using method `.next()`
        cy.get('tr td:nth-
child(2)').eq(index).next().then(function(price)
        {
          const priceText= price.text()
          expect(priceText).to.equal('25')
        })
      }
    })
  })
})
})

```



Mouse-Hover

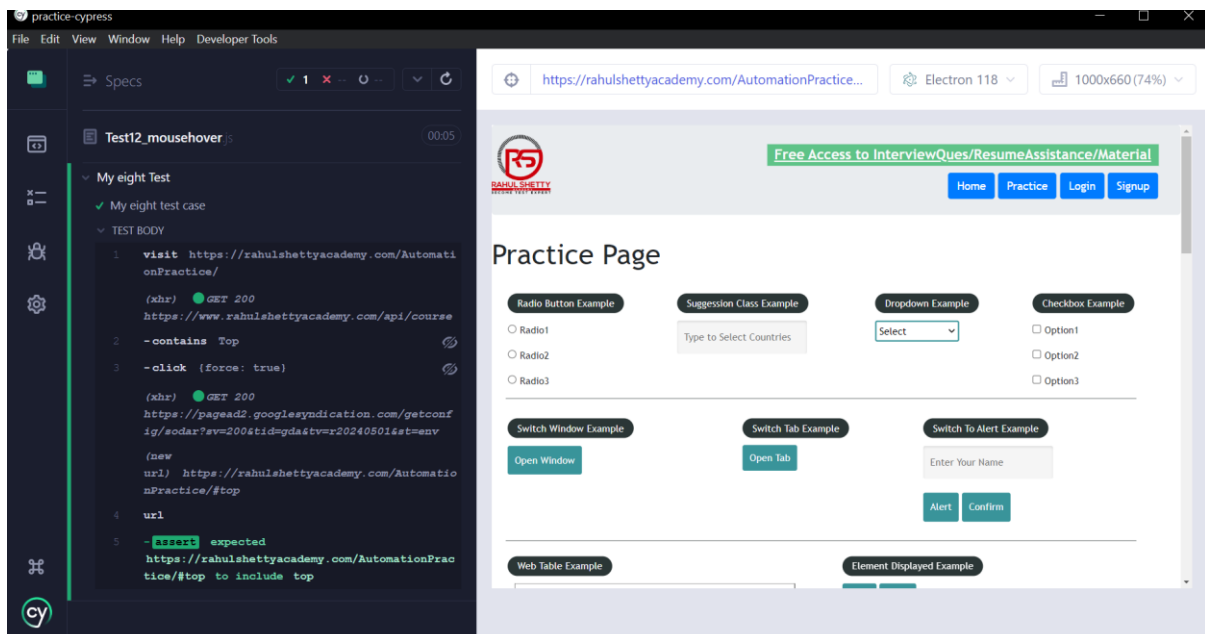
```
// To get auto-suggestion add line no. 2
/// <reference types="Cypress" />

describe('My eight Test', function () {

  it('My eight test case', function() {
    // invoke anything in cypress using `.cy` its like a driver
    cy.visit('https://rahulshettyacademy.com/AutomationPractice/')

    /*
    //give the parent near element css
    cy.get('div.mouse-hover-content').invoke('show')
    cy.contains('Top').click()
    cy.url().should('include', 'top')
    */

    // forcefully clickinh hidden pop-ups
    cy.contains('Top').click({force:true})
    cy.url().should('include', 'top')
  })
})
```



Child Window:

```
// To get auto-suggestion add line no. 2
/// <reference types="Cypress" />
```

```

describe('My eight Test', function () {

  it('My eight test case', function() {
    // invoke anything in cypress using `.cy` its like a driver
    cy.visit("https://rahulshettyacademy.com/AutomationPractice/")

    /*
    directly hit the url without clicking on any button
    or user href tag to visit that url
    1. To click url
    2. To visit href link
    */

    /*
    open window

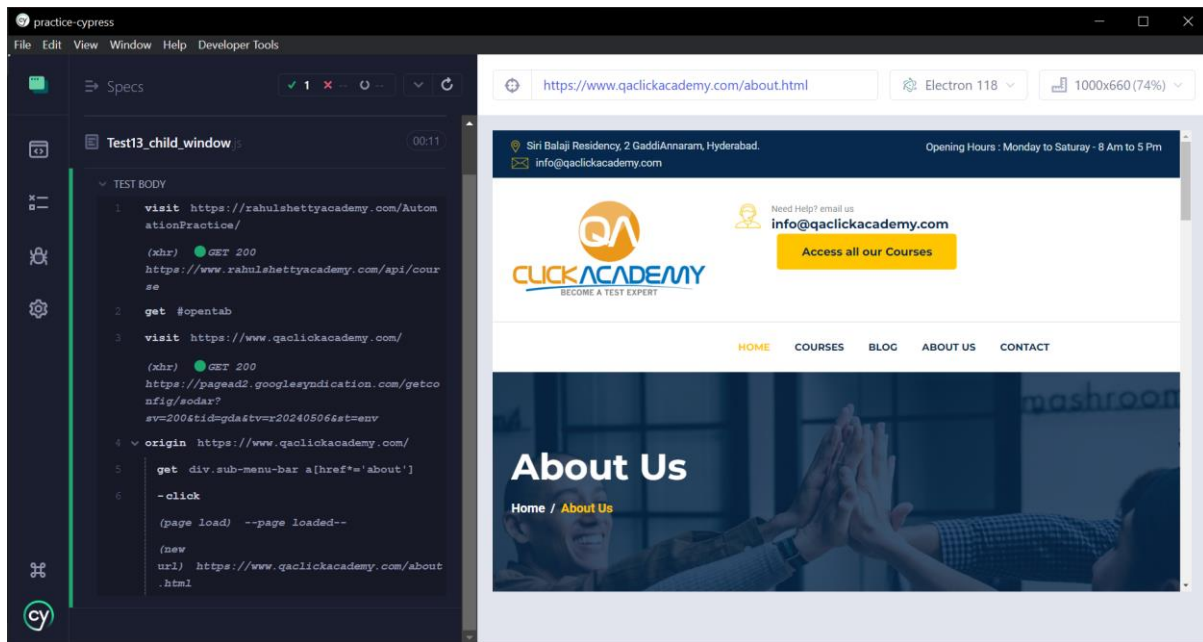
    Here we are concatenating cypress method with prop method prop is not
    a cypress method, so first we are resolving this promise
    */

    cy.get('#opentab').then(function(e1){
      const url =e1.prop('href')
      //using .visit can redirect you to the particular url, you cant
perform automation
      cy.visit(url)

      //inside func only: new url page can be automated
      cy.origin(url, ()=>
      {
        cy.get("div.sub-menu-bar a[href*='about']").click()
      })
    })

  })
})

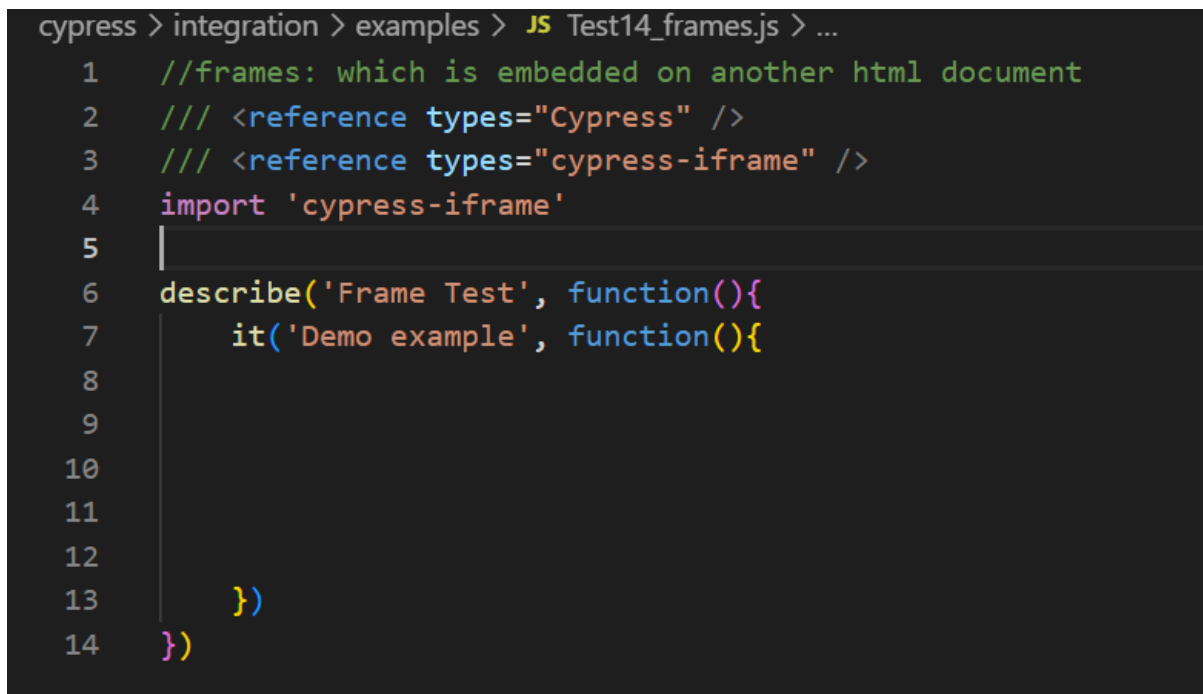
```

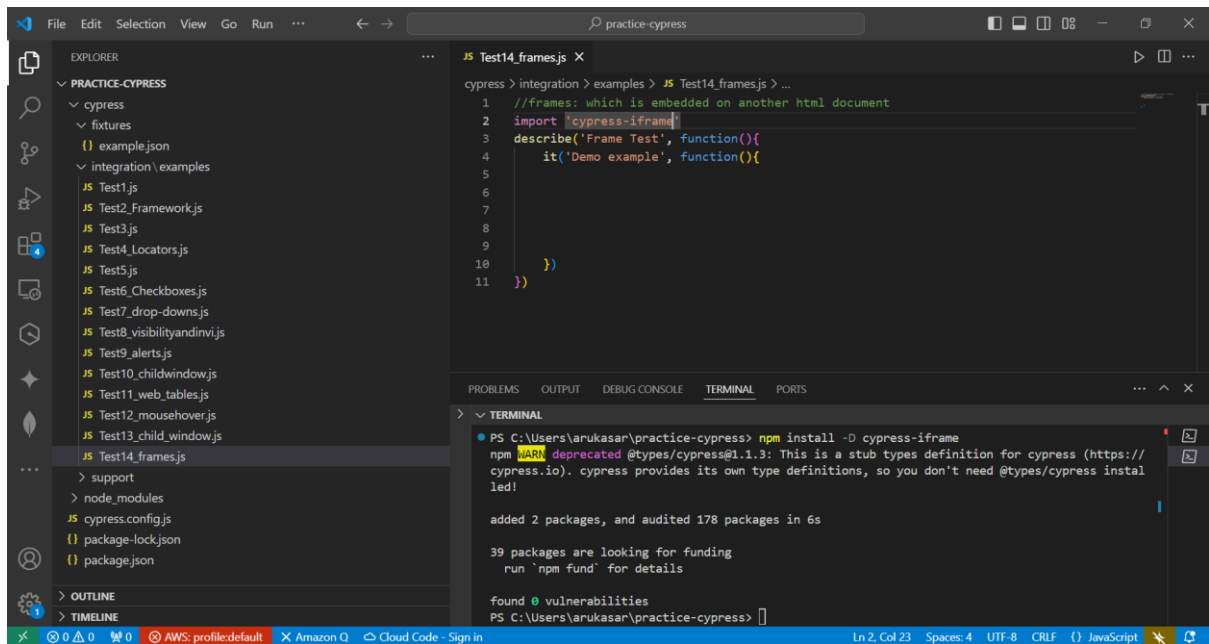


Frame

Command to install iframe: `npm install -D cypress-iframe`

Note: Do not forget to import





```
//frames: which is embedded on another html document
/// <reference types="Cypress" />
/// <reference types="cypress-iframe" />
import 'cypress-iframe'

describe('Frame Test', function(){
  it('Demo example', function(){

    cy.visit('https://rahulshettyacademy.com/AutomationPractice/')
    cy.frameLoaded('#courses-iframe')
    cy.iframe().find("a[href*='mentorship']").eq(0).click()

    // cy.iframe().find("h1[class*='pricing-
title']").should('have.length',2)

  })
})
```