

 免费电子书

学习

protractor

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1:

ProtractorAngularJS。

ProtractorSelenium WebDriverSelenium WebDriver。 ProtractorAngularJS。 waitForAngular
By.bindingBy.repeaterBy.textareaBy.modelWebElement.allWebElement.evaluate。

0.0.1 201681

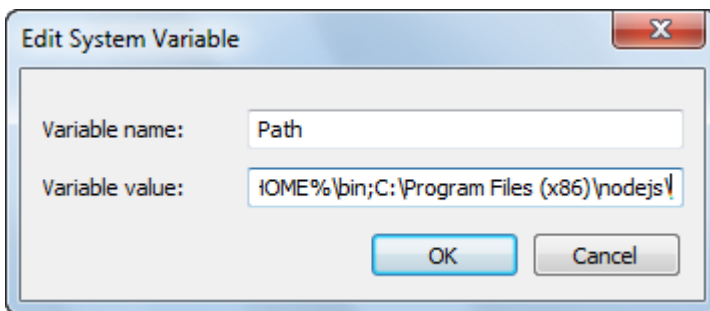
Examples

Windows

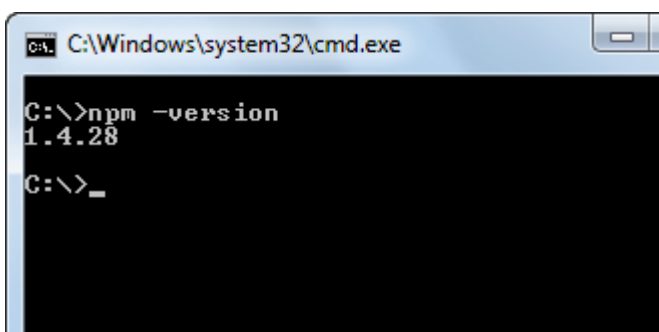
- Java JDK 1.7
- Node.js v4

URLNode.js <https://nodejs.org/en/>

Node.js。 “”。



npm -version。



Protractor。

◦ ◦

```
npm install protractor
```

Protractor

```
$ npm install -g protractor
```

```
protractorwebdriver-manager ◦
```

```
protractor --version ◦
```

```
webdriver-manager selenium ◦
```

```
$ webdriver-manager update
```

selenium

```
$ webdriver-manager start
```

```
Internet Explorer webdriver-manager update --ie webdriver-manager update --ie ◦ selenium  
IEDriverServer.exe
```

Protractor

```
spec ◦ specspecURL ◦ seleniumspec ◦ timeout ◦
```

```
ProtractorChrome ◦
```

conf.js -

```
exports.config = {  
  seleniumAddress: 'http://localhost:4444/wd/hub',  
  specs: ['spec.js']  
};
```

spec.js -

```
describe('first test in protractor', function() {  
  it('should verify title', function() {  
    browser.get('https://angularjs.org');  
  
    expect(browser.getTitle()).toEqual('AngularJS - Superheroic JavaScript MVW Framework');  
  });  
});
```

seleniumAddress - webdriver ◦

specs - ◦ ◦

describe - Jasmine describeSta

o

spec

AngularJS

spec.js

describe('angularjs homepage todo list', function() { it('todo', function() { browser.get('https://angularjs.org');

```
element(by.model('todoList.todoText')).sendKeys('write first protractor test');
element(by.css('[value="add"]')).click();

var todoList = element.all(by.repeater('todo in todoList.todos'));
expect(todoList.count()).toEqual(3);
expect(todoList.get(2).getText()).toEqual('write first protractor test');

// You wrote your first test, cross it off the list
todoList.get(2).element(by.css('input')).click();
var completedAmount = element.all(by.css('.done=true'));
expect(completedAmount.count()).toEqual(2);});});
```

fdescribdescribe

```
fdescribe('first group', ()=>{
  it('only this test will run', ()=>{
    //code that will run
  });
});
describe('second group', ()=>{
  it('this code will not run', ()=>{
    //code that won't run
  });
});
```

fit

```
describe('first group', ()=>{
  fit('only this test will run', ()=>{
    //code that will run
  });
  it('this code will not run', ()=>{
    //code that won't run
  });
});
```

fdescribefitit fitdescribefdescribeit

```
fdescribe('first group', ()=>{
  fit('only this test will run', ()=>{
    //code that will run
  });
});
```



```
it('this code will not run', ()=>{
  //code that won't run
});
});
```

fitdescribe。 fdescribe。 fitit。

```
fdescribe('first group', ()=>{
  it('this test will run', ()=>{
    //code that will run
  });
  it('this test will also run', ()=>{
    //code that will also run
  });
});
describe('second group', ()=>{
  it('this code will not run', ()=>{
    //code that won't run
  });
  fit('this code will run', ()=>{
    //code that will run
  });
});
```

。

```
Pending:
1) Test Name
Temporarily disabled with xit
```

xdescribe

```
Pending:
1) Test Name
No reason given
```

- xdescribexitxit。
- fdescribexit。
- xdescribefit。

E2E

1 NodeJS。 。 v7.8.0。 Java Development KitJDKselenium。

2。

```
npm install -g protractor
```

webdriver。 protractor -version.Protractor5.1.1。 。 3webdriver。

```
webdriver-manager update
```

4 Selenium Server。 Web。

webdriver-manager start<http://localhost:4444/wd/hub/static/resource/hub.html>.
<http://localhost:4444/wd/hub/static/resource/hub.html>.

spec。

```
//In conf.js
exports.config = {
  baseUrl: 'http://localhost:8800/adminapp',
  seleniumAddress: 'http://localhost:4444/wd/hub',
  specs: ['product/product_test.js'],
  directConnect : true,
  capabilities :{
    browserName: 'chrome'
  }
}
```

baseUrl - URL。

seleniumAddress - Selenium Server。

specs - spec

directConnect true - 。

- 。

- multiCapabilities。

。

Spec

```
//In product_test.js

describe('Angular Enterprise Boilerplate', function() {
  it('should have a title', function() {
    browser.get('http://localhost:8800/adminapp');
    expect(browser.getTitle()).toEqual('Angular Enterprise Boilerplate');
  });
});
```

spec

Protractorjasmine。 'describe"it'jasmine。 。

webdriver。

```
Protractor app/conf.js
```

ChromeURL。 110。

。

2: CSS

- by.css 'CSS-'
- by.id 'ID'
- by.model "
- by.binding "

CSS	' .class-name' '.class-name' CSS
ID	domID
	dom

CSS

cssdomclassid◦ html dom

```
<form class="form-signin">
  <input type="text" id="email" class="form-control" placeholder="Email">
  <input type="password" id="password" class="form-control" placeholder="Password">
  <button class="btn btn-block" id="signin-button" type="submit">Sign in</button>
</form>
```

CSS

1. CSS◦ ◦ CSS.form-control◦

```
by.css('.form-control')
```

form-control◦ ididclass name◦

2. ID cssidhash◦ id for email input elementcss

```
by.css('#email')
```

3. domcss◦ dom

```
<input class="username-class form-control">
// css selector using multiple classes
by.css('.username-class.form-control')
```

4. CSS>tagname[attribute-type='attribute-vallue']◦ CSS

```
by.css("button[type='submit']") //or
by.css("button[id='signin-button']")
```

Examples

\$\$\$ CSS

Protractor APICSSjQuery\$() ◦

CSS

```
element(by.css('h1.documentation-text[ng-bind="title"]'));
element(by.css('[ng-click="submit"]));
```

\$() CSS

```
$('#h1.documentation-text[ng-bind="title"]');
$('#[ng-click="submit"]');
```

\$\$() ◦

CSS

```
element.all(by.css('h1.documentation-text[ng-bind="title"]'));
element.all(by.css('[ng-click="submit"]));
```

\$\$() CSS

```
$$('h1.documentation-text[ng-bind="title"]');
$$('[ng-click="submit"]');
```

ProtractorHTML dom◦ Protractorcssidmodelbinding◦

```
by.css('css-selector')
by.id('id')
```

HTML

HTMLcss[attribute = value]

```
//selects the first element with href value '/contact'
element(by.css('[href="/contact"]'));

//selects the first element with tag option and value 'foo'
element(by.css('option[value="foo"]'));

//selects all input elements nested under the form tag with name attribute 'email'
element.all(by.css('form input[name="email"]));
```

HTML

HTMLcss[attribute * = value]

```
//selects the first element with href value that contains 'cont'  
element(by.css('[href*="cont"]'));  
  
//selects the first element with tag h1 and class attribute that contains 'fo'  
element(by.css('h1[class*="fo"]'));  
  
//selects all li elements with a title attribute that contains 'users'  
element.all(by.css('li[title*='users']'));
```

CSS <https://riptutorial.com/zh-CN/protractor/topic/1524/css>

3: browser.wait

Examples

`browser.sleep` vs `browser.wait`

```
"""browser.sleep(<timeout_in_milliseconds>)
```

◦ / ◦ ◦

`browser.wait()` ◦ Protractor / WebDriverJS `Expected Condition` `true` ◦ ◦

◦

`browser.wait` <https://riptutorial.com/zh-CN/protractor/topic/8297/browser-wait-->

4: Protractor

Angular。 Protractor。

Examples

Protractor

```
browser.driverdriver
```

```
browser.driver.ignoreSynchronization = true
```

。 Protractor“angular”。 "

Protractor <https://riptutorial.com/zh-CN/protractor/topic/8830/protractor>

5:

Protractor ◦ SeleniumAngular ◦ Angular ◦



Examples

cssxpath ◦

```
by.binding('bind value')
```

```
<span>{{user.password}}</span>
<span ng-bind="user.email"></span>
```

```
by.binding('user.password')
by.binding('user.email')
```

```
by.binding('email')
```

binding ◦

```
by.exactBinding('exact bind value')
```

```
<span>{{user.password}}</span>
```

```
by.exactBinding('user.password')
by.exactBinding('password') // Will not work
```

Angular

```
by.model('model value')
```

```
<input ng-model="user.username">
```

```
by.model('user.username')
```

◦ ◦

```
by.buttonText('button text')
```

```
<button>Sign In</button>
```

```
by.buttonText('Sign In')
```

buttonText° °

```
by.partialButtonText('partial button text')
```

```
<button>Register an account</button>
```

```
by.partialButtonText('Register')
```

Angular repeater

```
by.repeater('repeater value')
```

```
<tbody ng-repeat="review in reviews">
  <tr>Movie was good</tr>
  <tr>Movie was ok</tr>
  <tr>Movie was bad</tr>
</tbody>
```

```
by.repeater('review in reviews')
```

```
by.repeater('reviews')
```

repeater

```
by.exactRepeater('exact repeater value')
```

```
<tbody ng-repeat="review in reviews">
  <tr>Movie was good</tr>
  <tr>Movie was ok</tr>
  <tr>Movie was bad</tr>
</tbody>
```

```
by.exactRepeater('review in reviews')
by.exactRepeater('reviews') // Won't work
```

CSS

CSS。

```
by.cssContainingText('css selector', 'text of css element')
```

```
<ul>
  <li class="users">Mike</li>
  <li class="users">Rebecca</li>
</ul>
```

```
by.cssContainingText('.users', 'Rebecca') // Will return the second li only
```

Angular

```
by.options('options value')
```

```
<select ng-options="country.name for c in countries">
  <option>Canada</option>
  <option>United States</option>
  <option>Mexico</option>
</select>
```

```
by.options('country.name for c in countries')
```

CSS

shadow DOM CSS

```
by.deepCss('css selector')
```

```
<div>
  <span id="outerspan">
    <"shadow tree">
      <span id="span1"></span>
      <"shadow tree">
        <span id="span2"></span>
      </>
    </>
  </div>
```

```
by.deepCss('span') // Will select every span element
```

Protractor。

```
element(locator);
element.all(locator);
```

- *getTextProtractor*

element ◦ elementelement ◦ elementElementFinder ◦

element.all ◦ element.allElementArrayFinder ◦ map ◦

```
element.all(locator).map(function(singleElement) {
    return singleElement.getText();
});
```

◦ locatorElementFinders

```
element(by.repeater('movie in movies')).element(by.linkText('Watch Frozen on Netflix'))
```

◦ ElementFinderElementArrayFinder ◦

<https://riptutorial.com/zh-CN/protractor/topic/10825/>

6:

Protractor / WebDriverJS - promises

Examples

```
it('should test something', function() {  
  browser.get('/dashboard/');  
  
  $("#myid").click();  
  expect(element(by.model('username')).getText()).toEqual('Test');  
  
  console.log("HERE");  
});
```

`console.log()` HERE Protractor ◦ ◦ promisesControl Flow promise

[PromisesControl Flow](#) ◦

<https://riptutorial.com/zh-CN/protractor/topic/8580/>

7: XPath

Examples

DOM

CSSxpath View

```
<ul>
<li><a href='http://www.google.com'>Go to google</a></li>
</ul>
```

```
var googleLink= element (by.xpath('//ul/li/a'));
expect (element.getText()).to.eventually.equal('Go to google','The text you mention was not found');
```

XPathclassidtitle。

```
<div class="HakunaMatata"> Hakuna Matata </div>
```

```
var theLionKing= element (by.xpath('//div[@class="HakunaMatata"]'));
expect (theLionKing.getText()).to.eventually.equal('Hakuna Matata', "Text not found");
```

。 “”

```
<div class="Hakuna Matata"> Hakuna Matata </div>
```

```
var theLionKing= element (by.xpath('//div[contains(@class,"Hakuna")]'));
expect (theLionKing.getText()).to.eventually.equal('Hakuna Matata', "Text not found");
```

'class =“HakunaMatata”'class =“Hakuna Matata”。

```
var theLionKing= element (by.xpath('//div[contains(concat(' ',normalize-space(@class),' '),
"Hakuna")]'));
expect (theLionKing.getText()).to.eventually.equal('Hakuna Matata', "Text not found");
```

id

ID。

```
<div id="HakunaMatata">Hakuna Matata</div>
```

```
var theLionKing= element(by.xpath('//div[@id="HakunaMatata"]'));
expect(theLionKing.getText()).to.eventually.equal('Hakuna Matata', "Text not found");
```

contains

title

```
<div title="Hakuna Matata">Hakuna Matata</div>
```

```
var theLionKing= element(by.xpath('//div[@title="Hakuna Matata"]'));
expect(theLionKing.getText()).to.eventually.equal('Hakuna Matata', "Text not found");
```

```
<div class="Run Simba Run">Run Simba</div>
```

```
var runSimba= element(by.xpath('//div[text()="Run Simba"]'));;
```

containsText

```
<div class="Run Simba Run">Run Simba,run</div>
```

```
var runSimba= element(by.xpath('//div[contains(text(),"Run Simba")]'));
expect(runSimba.getText()).to.eventually.equal('Run Simba, run', "Text not found"); //true
```

```
<input type="text" name="FullName"></input>
```

```
var fullNameInput= element(by.xpath('//input[@name="FullName"]'));
fullNameInput.sendKeys("John Doe");
```

XPath <https://riptutorial.com/zh-CN/protractor/topic/7205/xpath>

8:

- `browser.pause`
- `browser.debugger`

Examples

`browser.pause`

`pause()` **Protractor**

1. `C` `C` `C`

2. `repl`

```
> element(by.css('#username')).getText()
> NoSuchElementError: No element found using locator: by.username("#username")
```

ChromeDev Tools **ChromeDriver**

3. `CTRL+C` `CTRL + C`

```
it('should pause when we use pause method', function () {
  browser.get('/index.html');

  var username = element(by.model('username'));
  username.sendKeys('username');
  browser.pause();

  var password = element(by.model('password'));
  password.sendKeys('password');
  browser.pause();
});
```

4. `d`

`browser.debugger`

`browser.debugger`

```
`protractor debug <configuration.file.js>`
```

`cnnext`

Protractor ◦ `username.sendKeys('username')`
`browser.debugger()` ◦

```
it('should pause when we use pause method', function () {
  browser.get('/index.html');

  var username = element(by.model('username'));
  username.sendKeys('username');
  browser.debugger();

  var password = element(by.model('password'));
  password.sendKeys('password');
});
```

repl -

```
debug > repl
> element(by.model('abc')).sendKeys('xyz');
```

sendKeys ◦

Port no. -

```
browser.debugger(4545); //will start the debugger in port 4545
```

`debugger()` **Protractor** ◦

`window.clientSideScripts.findInputs('username');`

<https://riptutorial.com/zh-CN/protractor/topic/3910/>

9:

Protractor。

Examples

- Chrome

```
var config = {};  
var timeout = 120000;  
  
config.framework = 'jasmine2';  
config.allScriptsTimeout = timeout;  
config.getPageTimeout = timeout;  
config.jasmineNodeOpts.isVerbose = true;  
config.jasmineNodeOpts.defaultTimeoutInterval = timeout;  
config.specs = ['qa/**/*.Spec.js'];  
config.browserName = 'chrome';  
  
exports.config = config;
```

- Chrome

```
var config = {};  
var timeout = 120000;  
  
config.framework = 'jasmine2';  
config.allScriptsTimeout = timeout;  
config.getPageTimeout = timeout;  
config.jasmineNodeOpts.isVerbose = true;  
config.jasmineNodeOpts.defaultTimeoutInterval = timeout;  
config.specs = ['qa/**/*.Spec.js'];  
config.capabilities = {  
  browserName: 'chrome',  
  'chromeOptions': {  
    'args': ['start-minimized', 'window-size=1920,1080']  
  }  
};  
  
exports.config = config;
```

shardTestFiles - Chrome

spec。

。

```
var config = {};  
var timeout = 120000;  
  
config.framework = 'jasmine2';
```

```

config.allScriptsTimeout = timeout;
config.getPageTimeout = timeout;
config.jasmineNodeOpts.isVerbose = true;
config.jasmineNodeOpts.defaultTimeoutInterval = timeout;
config.specs = ['qa/**/*.Spec.js'];
config.capabilities = {
  browserName: 'chrome',
  shardTestFiles: true,
  maxInstances: 2,
  'chromeOptions': {
    'args': ['start-minimized', 'window-size=1920,1080']
  }
};

exports.config = config;

```

- chrome

```

var config = {};
var timeout = 120000;

config.framework = 'jasmine2';
config.allScriptsTimeout = timeout;
config.getPageTimeout = timeout;
config.jasmineNodeOpts.isVerbose = true;
config.jasmineNodeOpts.defaultTimeoutInterval = timeout;
config.specs = ['qa/**/*.Spec.js'];
config.multiCapabilities = [{
  browserName: 'chrome',
  shardTestFiles: true,
  maxInstances: 2,
  'chromeOptions': {
    'args': ['start-minimized', 'window-size=1920,1080']
  }
},
{
  browserName: 'chrome',
  shardTestFiles: true,
  maxInstances: 1,
  'chromeOptions': {
    'args': ['show-fps-counter=true'],
    'mobileEmulation': {
      'deviceName': 'Apple iPhone 6'
    }
  }
}
];

exports.config = config;

```

<https://riptutorial.com/zh-CN/protractor/topic/9745/>

10:

o

Examples

```
/* save the file in 'pages/loginPage'
var LoginPage = function(){

};

/*Application object properties*/
LoginPage.prototype = Object.create({}, {
  userName: {
    get: function() {
      return browser.driver.findElement(By.id('userid'));
    }
  },
  userPass: {
    get: function() {
      return browser.driver.findElement(By.id('password'));
    }
  },
  submitBtn: {
    get: function() {
      return browser.driver.findElement(By.id('btnSubmit'));
    }
  }
});

/* Adding functions */
LoginPage.prototype.login = function(strUser, strPass) {
  browser.driver.get(browser.baseUrl);
  this.userName.sendKeys(strUser);
  this.userPass.sendKeys(strPass);
  this.submitBtn.click();
};

module.exports = LoginPage;
```

o

```
var LoginPage = require('../pages/loginPage');
describe('User Login to Application', function() {
  var loginPage = new LoginPage();

  beforeEach(function() {
    loginPage.login(browser.params.userName, browser.params.userPass);
  });

  it('and see a success message in title', function() {
    expect(browser.getTitle()).toEqual('Success');
  });
});
```

<https://riptutorial.com/zh-CN/protractor/topic/9747/>

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