

 免費電子書

學習

# protractor

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#protractor

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# 1:

## ProtractorAngularJS。

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

0.0.1 201681

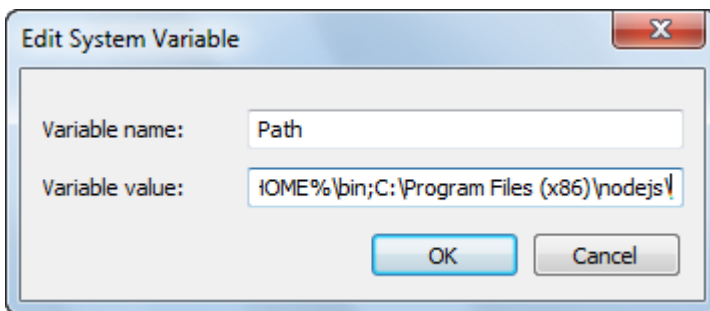
## Examples

### Windows

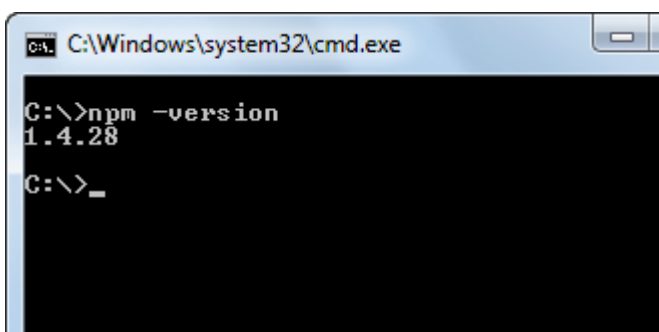
- Java JDK 1.7
- Node.js v4

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
});
});
```

fitdescribefdescribe。 fdescribefitit。

```
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-TW/protractor/topic/1524/css>

---

## 3: browser.wait

### Examples

`browser.sleep` vs `browser.wait`

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

Protractor / WebDriverJS

`browser.wait()` [Protractor / WebDriverJS Expected Condition](#)

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

---

## 4: Protractor

Angular Protractor

### Examples

#### Protractor

```
browser.driverdriver
```

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

Protractor“angular”

[Protractor https://riptutorial.com/zh-TW/protractor/topic/8830/protractor](https://riptutorial.com/zh-TW/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-TW/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-TW/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-TW/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()
> NoSuchElementException: 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-TW/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 ◦ ◦ maxInstances ◦

◦

```
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-TW/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-TW/protractor/topic/9747/>

S. No		Contributors
1		<a href="#">Bhoomi Bhalani</a> , <a href="#">Community</a> , <a href="#">Devmati Wadikar</a> , <a href="#">Manuli Piyalka</a> , <a href="#">olyv</a> , <a href="#">Peter Stegnar</a> , <a href="#">Praveen</a> , <a href="#">Priyanshu Shekhar</a> , <a href="#">SilentLupin</a> , <a href="#">sonhu</a> , <a href="#">Stephen Leppik</a>
2	CSS	<a href="#">alecxe</a> , <a href="#">Droogans</a> , <a href="#">leon</a> , <a href="#">Priyanshu Shekhar</a> , <a href="#">sonhu</a>
3	browser.wait	<a href="#">alecxe</a>
4	Protractor	<a href="#">Sakshi Singla</a>
5		<a href="#">Sébastien Dufour-Beauséjour</a>
6		<a href="#">alecxe</a>
7	XPath	<a href="#">Shubhang</a>
8		<a href="#">Devmati Wadikar</a> , <a href="#">Priyanshu Shekhar</a> , <a href="#">Ram Pasala</a> , <a href="#">Sakshi Singla</a> , <a href="#">Stephen Leppik</a>
9		<a href="#">Barney</a>
10		<a href="#">Barney</a> , <a href="#">Suresh Salloju</a>