

Server push data with HTML5 SSE

SUPINFO Hands-On 4



JS.everywhere Europe (Paris, 16-17, Nov)

{JavaScript}

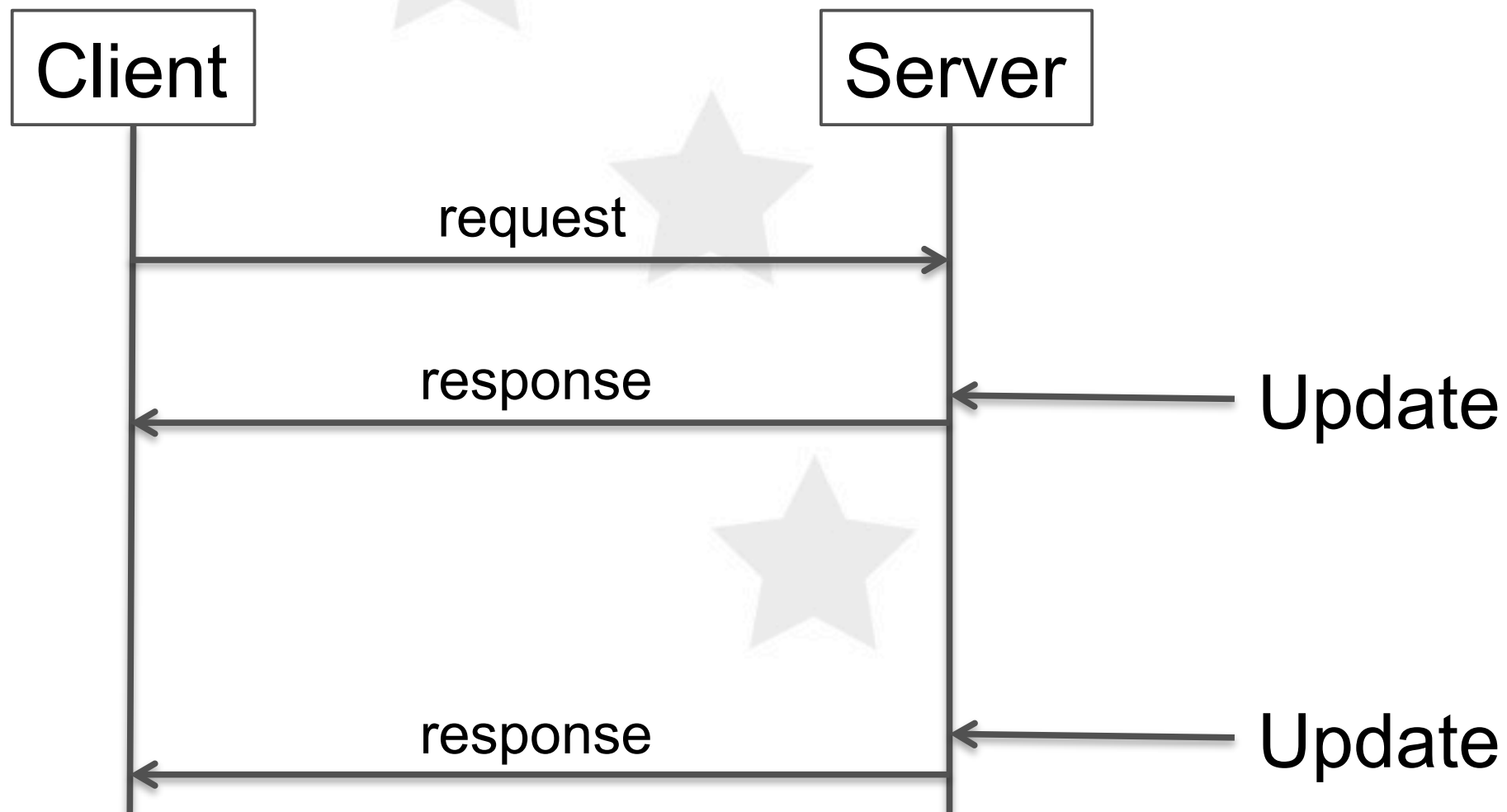
HTML5



JS.everywhere(EU)

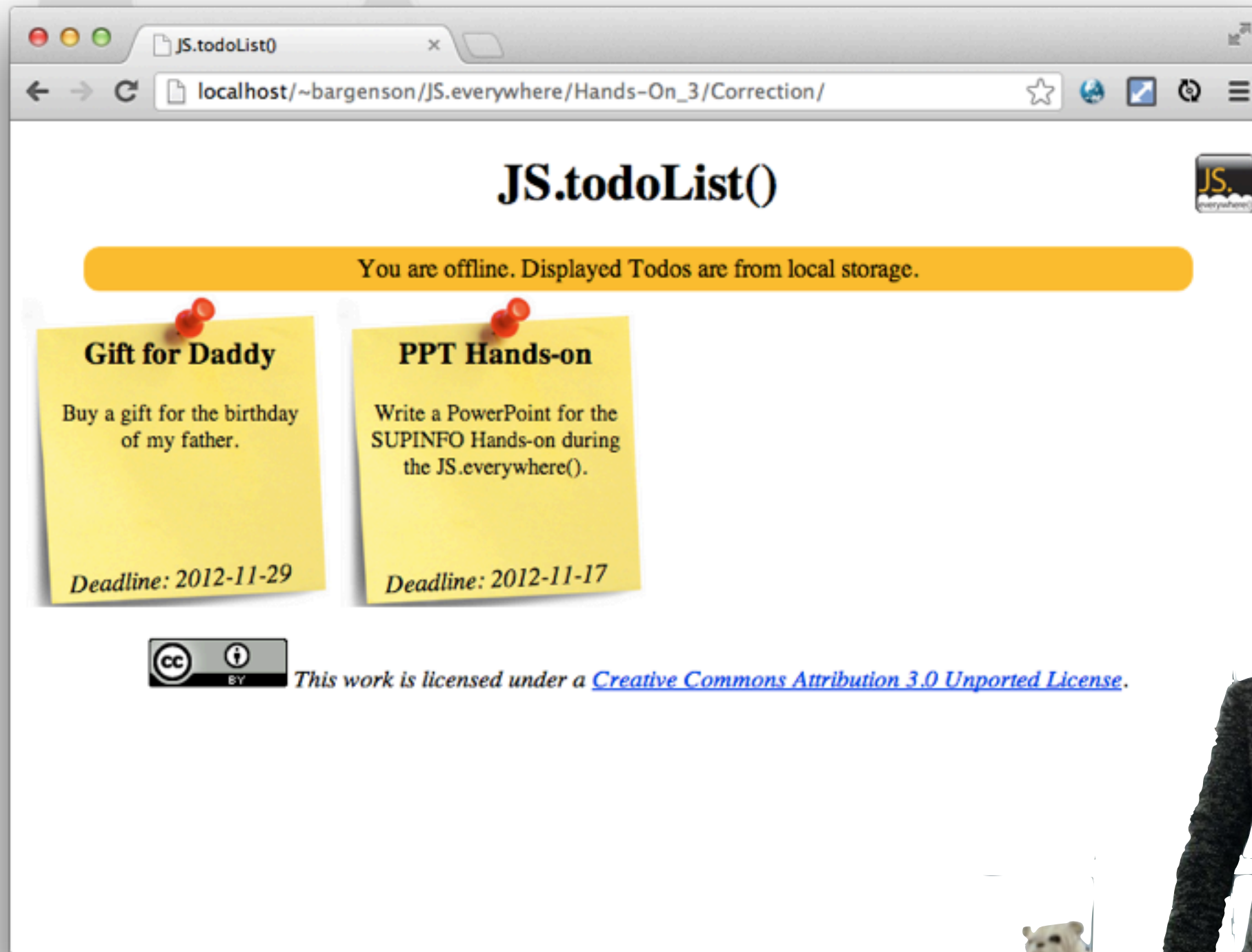


Server Sent Event



With streaming, the browser sends a complete request, but the server maintains an open response that is continuously updated

Your mission



Your tools



Your tools



...



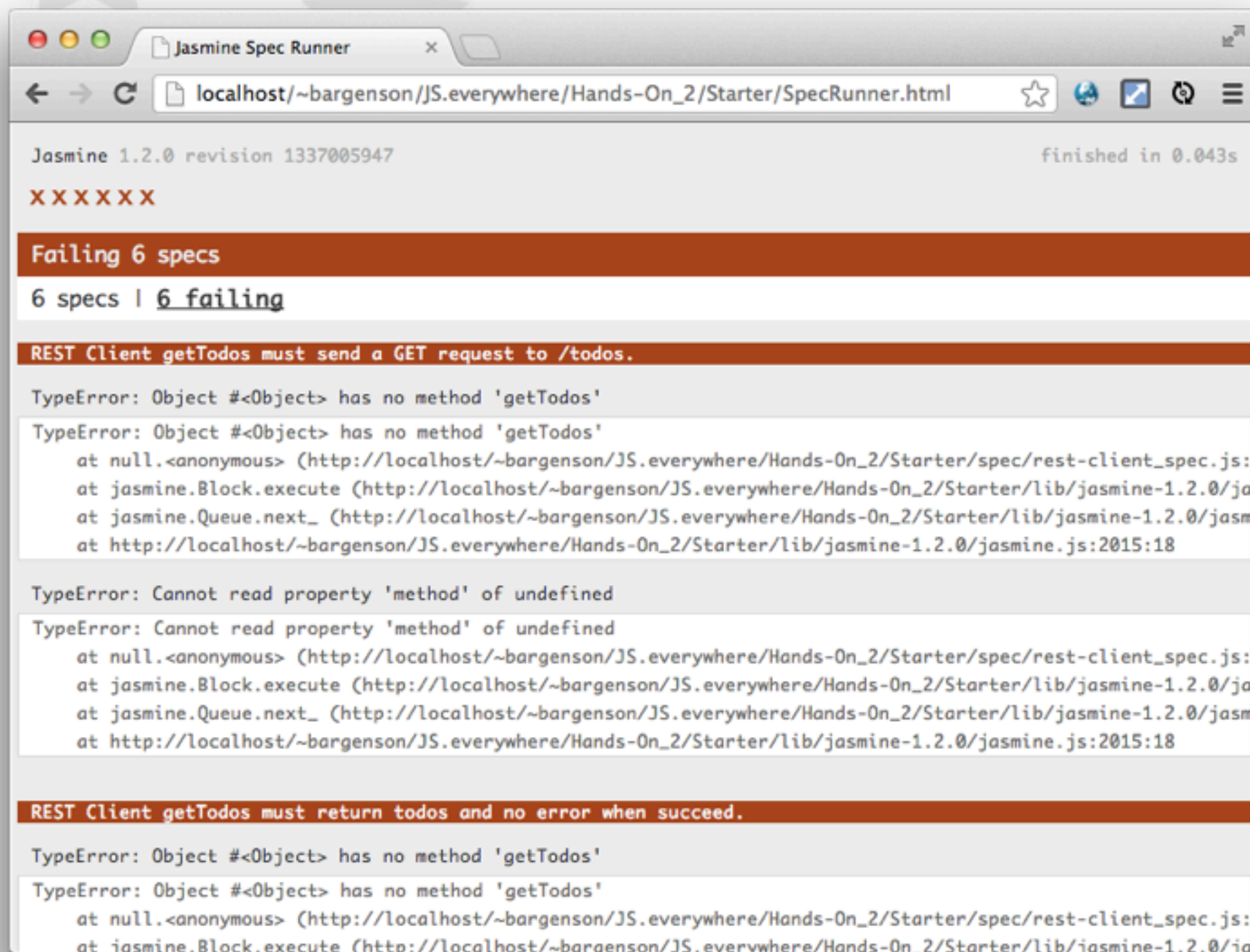
Your tools



...



To guide you



A screenshot of a web browser window titled "Jasmine Spec Runner". The address bar shows the URL: `localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/SpecRunner.html`. The page content displays the results of a Jasmine test suite. At the top, it says "Jasmine 1.2.0 revision 1337005947" and "finished in 0.043s". Below this, there are six red "X" characters indicating failed tests. A summary line shows "Failing 6 specs" and "6 specs | 6 failing". The first failing spec is titled "REST Client getTodos must send a GET request to /todos." and shows a "TypeError: Object #<Object> has no method 'getTodos'" with a stack trace. The second failing spec is titled "REST Client getTodos must return todos and no error when succeed." and also shows a "TypeError: Object #<Object> has no method 'getTodos'" with a stack trace.

```
Jasmine 1.2.0 revision 1337005947 finished in 0.043s
XXXXXX

Failing 6 specs
6 specs | 6 failing

REST Client getTodos must send a GET request to /todos.
TypeError: Object #<Object> has no method 'getTodos'
TypeError: Object #<Object> has no method 'getTodos'
  at null.<anonymous> (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/spec/rest-client_spec.js:
  at jasmine.Block.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/ja
  at jasmine.Queue.next_ (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasmine.js:2015:18

TypeError: Cannot read property 'method' of undefined
TypeError: Cannot read property 'method' of undefined
  at null.<anonymous> (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/spec/rest-client_spec.js:
  at jasmine.Block.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/ja
  at jasmine.Queue.next_ (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasmine.js:2015:18

REST Client getTodos must return todos and no error when succeed.
TypeError: Object #<Object> has no method 'getTodos'
TypeError: Object #<Object> has no method 'getTodos'
  at null.<anonymous> (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/spec/rest-client_spec.js:
  at jasmine.Block.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/ja
```



To guide you

```
Jasmine 1.2.0 revision 1337005947 finished in 0.018s
●XXXXX

Failing 5 specs
6 specs | 5 failing

REST Client getTodos must return todos and no error when succeed.

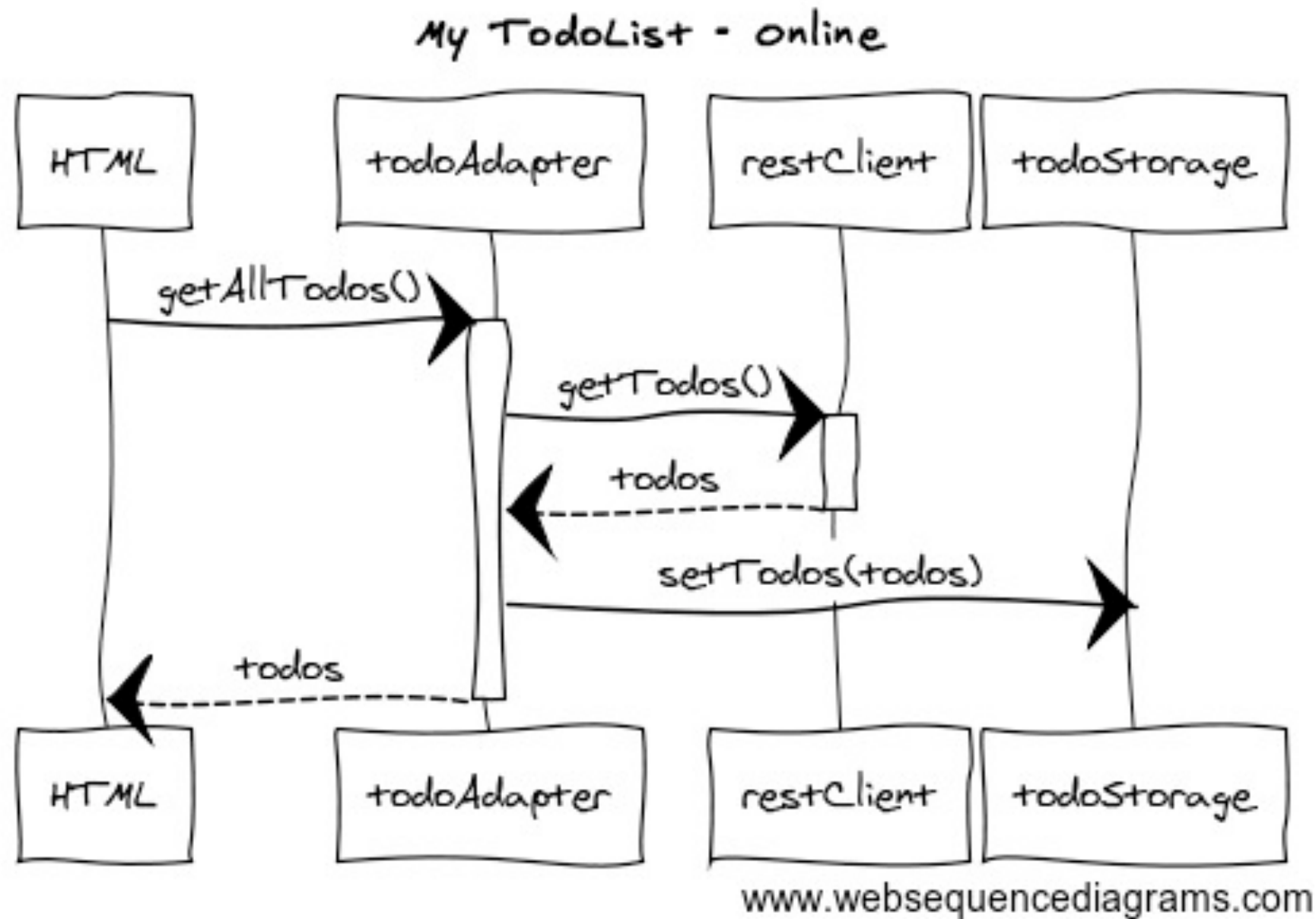
Expected spy callback to have been called.

Error: Expected spy callback to have been called.
  at new jasmine.ExpectationResult (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-
  at null.toHaveBeenCalled (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/ja
  at null.<anonymous> (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/spec/rest-client_spec.js:
  at jasmine.Block.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/ja
  at jasmine.Queue.next_ (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at jasmine.Queue.start (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at jasmine.Spec.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jas
  at jasmine.Queue.next_ (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at onComplete (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasmine.js:20
  at jasmine.Spec.finish (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm

TypeError: Cannot read property '0' of undefined
TypeError: Cannot read property '0' of undefined
  at null.<anonymous> (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/spec/rest-client_spec.js:
  at jasmine.Block.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/ja
  at jasmine.Queue.next_ (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at jasmine.Queue.start (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jasm
  at jasmine.Spec.execute (http://localhost/~bargenson/JS.everywhere/Hands-On_2/Starter/lib/jasmine-1.2.0/jas
```

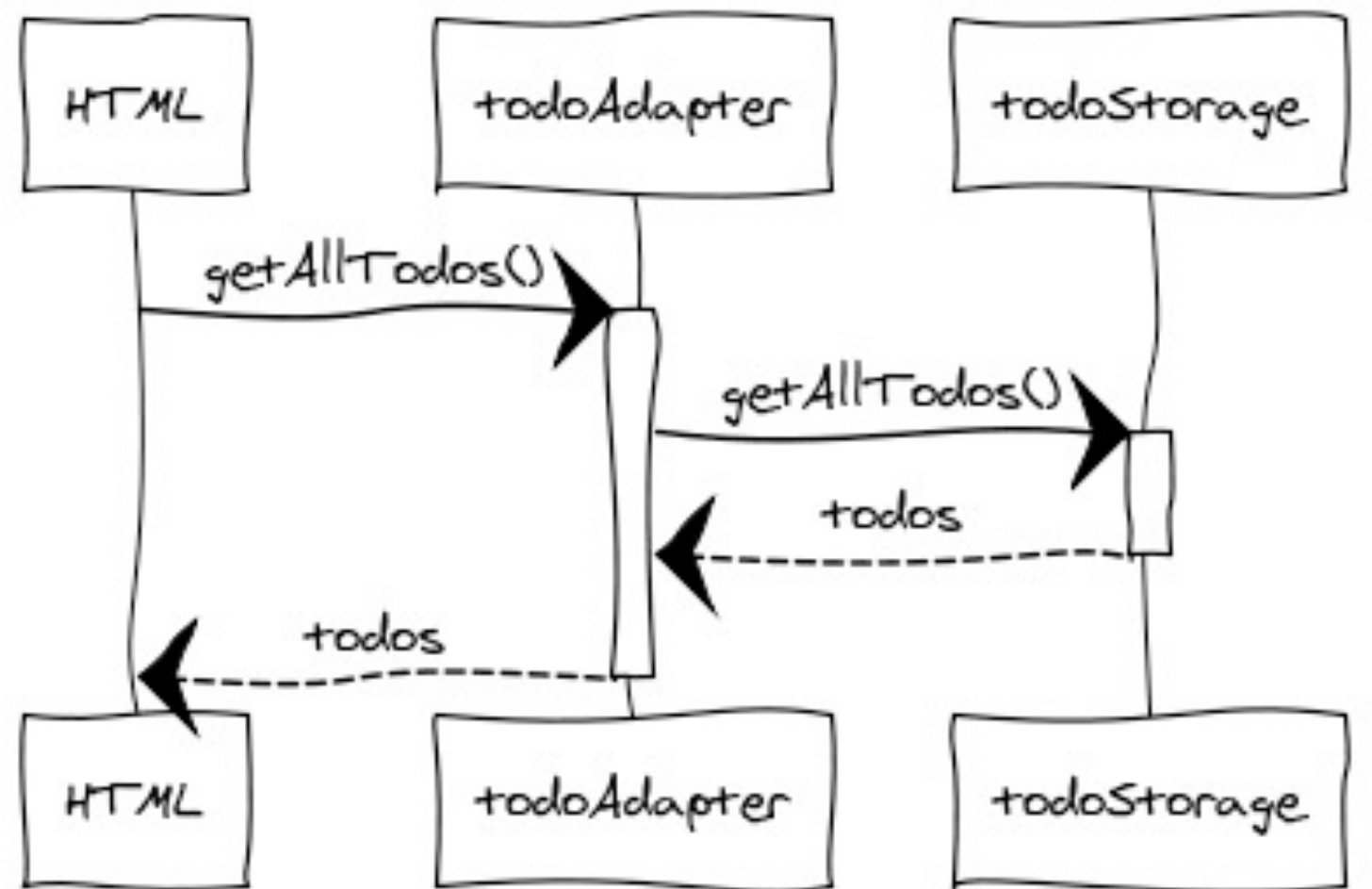


Design



Design

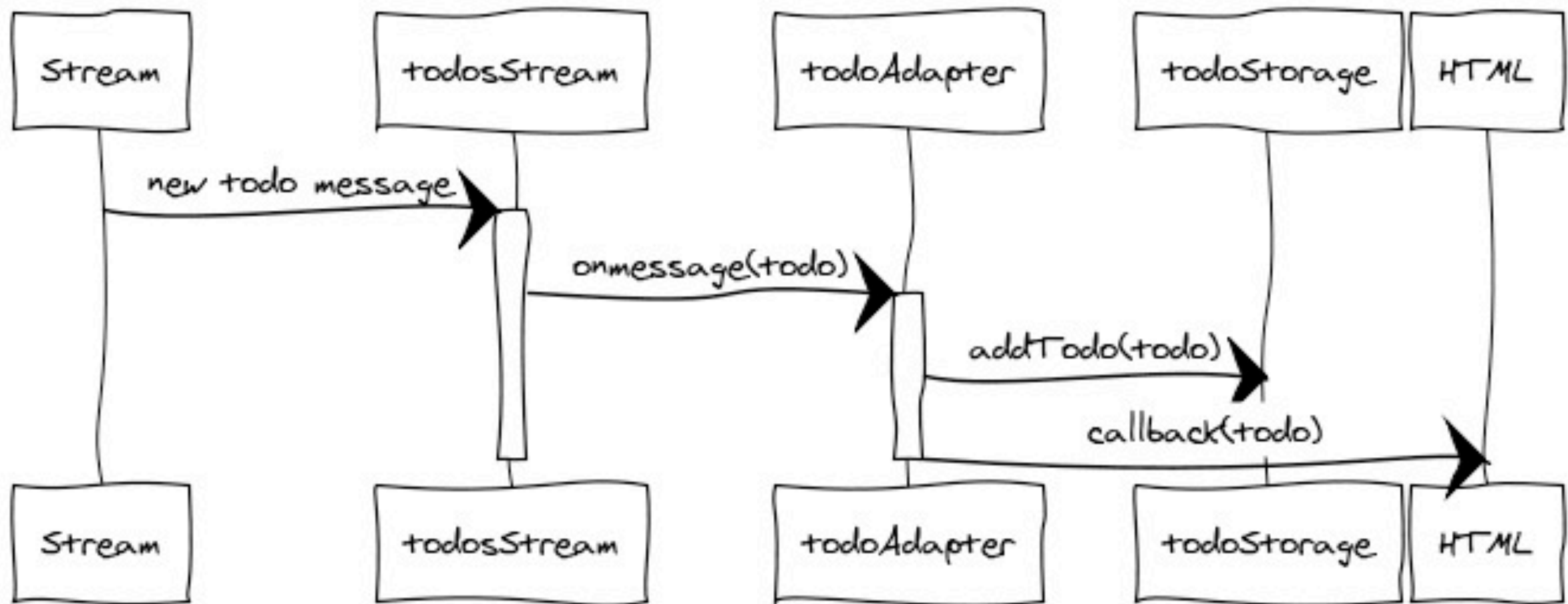
My TodoList - offline



www.websequencediagrams.com

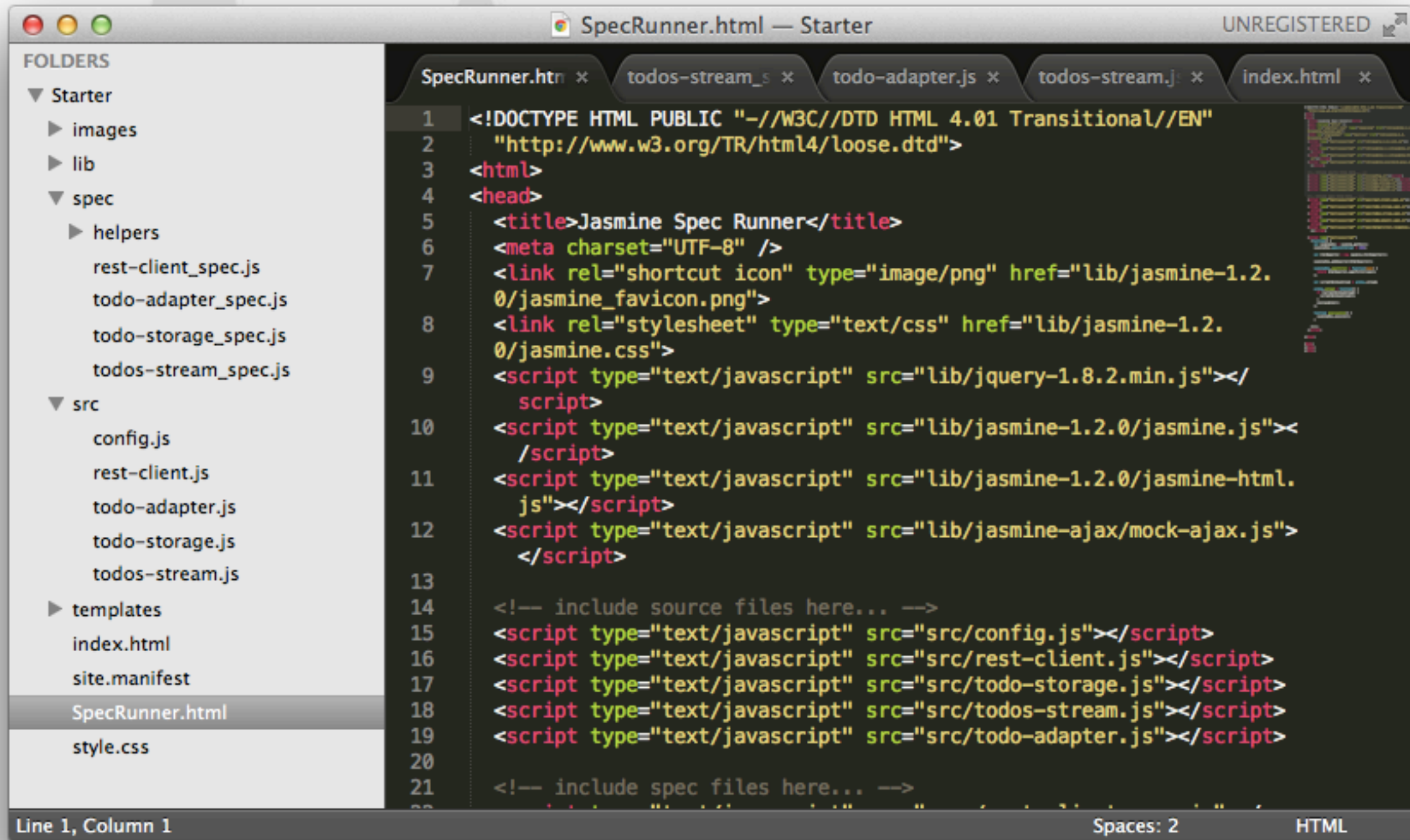
Design

My TodoList - on new todo



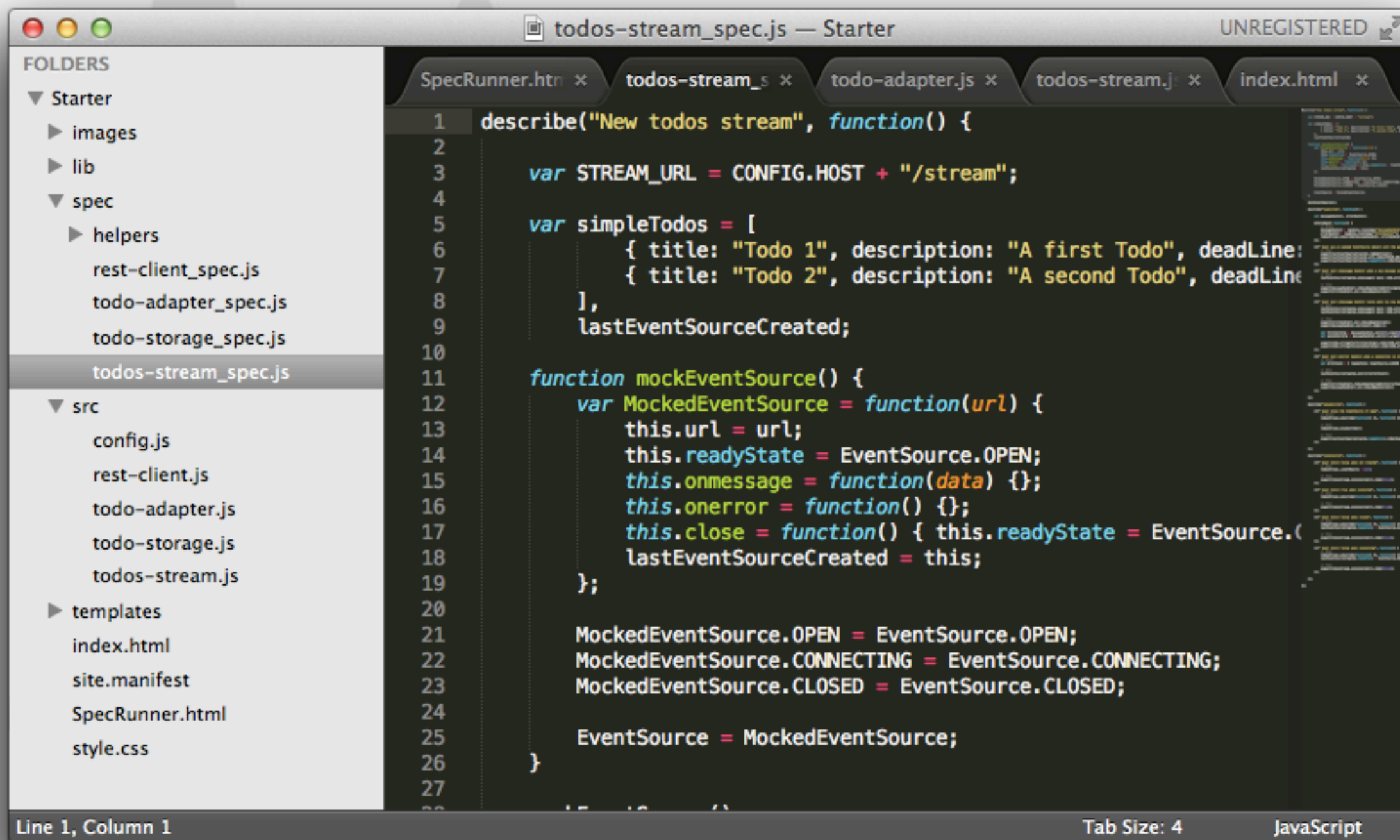
www.websequencediagrams.com

Project Skeleton

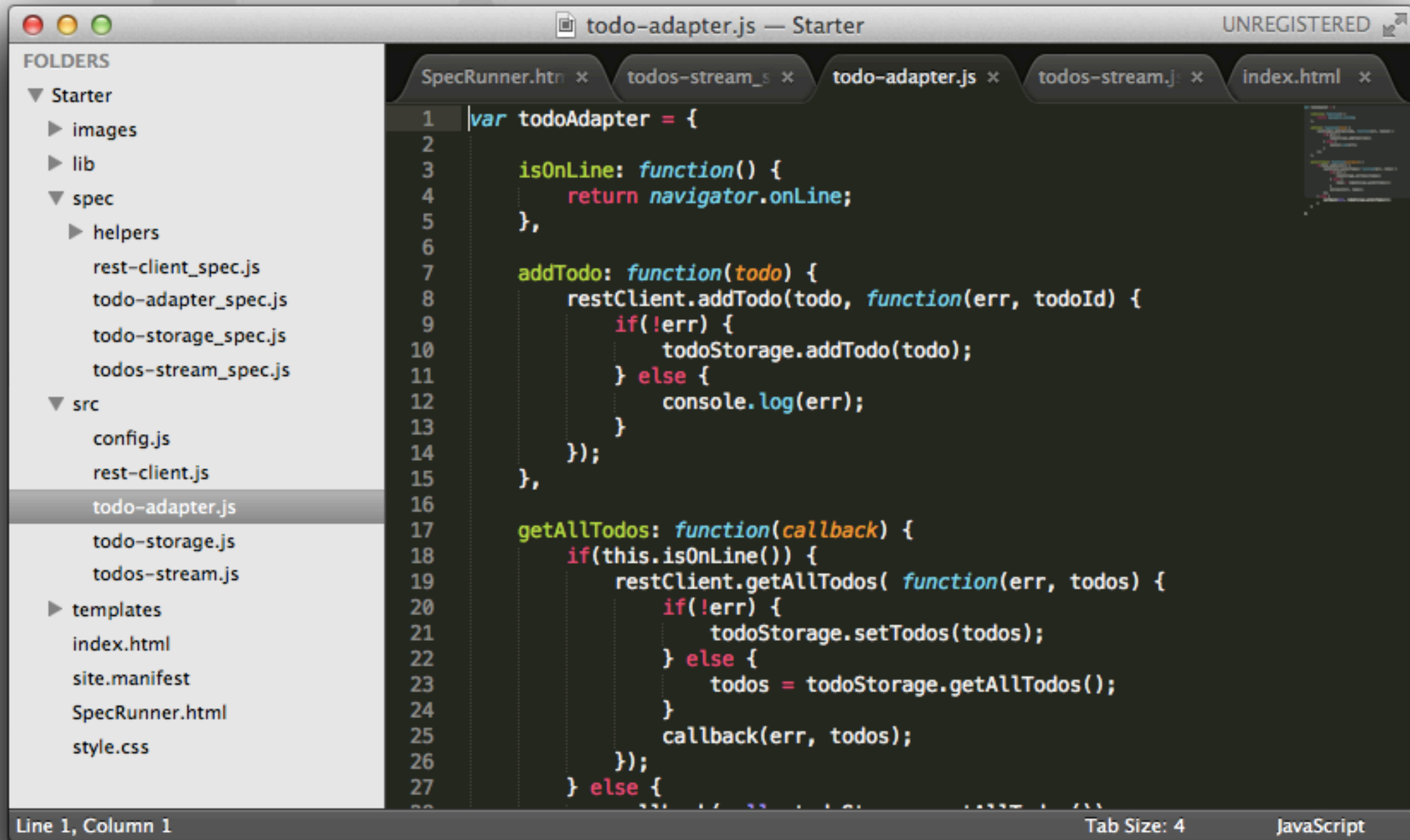


```
1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
2 "http://www.w3.org/TR/html4/loose.dtd">
3 <html>
4 <head>
5   <title>Jasmine Spec Runner</title>
6   <meta charset="UTF-8" />
7   <link rel="shortcut icon" type="image/png" href="lib/jasmine-1.2.
8   0/jasmine_favicon.png">
9   <link rel="stylesheet" type="text/css" href="lib/jasmine-1.2.
10  0/jasmine.css">
11  <script type="text/javascript" src="lib/jquery-1.8.2.min.js"></
12  script>
13  <script type="text/javascript" src="lib/jasmine-1.2.0/jasmine.js"></
14  script>
15  <script type="text/javascript" src="lib/jasmine-1.2.0/jasmine-html.
16  js"></script>
17  <script type="text/javascript" src="lib/jasmine-ajax/mock-ajax.js">
18  </script>
19  <!-- include source files here... -->
20  <script type="text/javascript" src="src/config.js"></script>
21  <script type="text/javascript" src="src/rest-client.js"></script>
22  <script type="text/javascript" src="src/todo-storage.js"></script>
23  <script type="text/javascript" src="src/todos-stream.js"></script>
24  <script type="text/javascript" src="src/todo-adaptor.js"></script>
25  <!-- include spec files here... -->
```

Project Skeleton



Project Skeleton



The screenshot shows a code editor window titled 'todo-adaptor.js — Starter' with a status bar indicating 'UNREGISTERED'. The editor has several tabs open: 'SpecRunner.html', 'todos-stream.js', 'todo-adaptor.js', 'todos-stream.js', and 'index.html'. The 'todo-adaptor.js' tab is active, displaying the following JavaScript code:

```
1 var todoAdapter = {
2
3   isOnline: function() {
4     return navigator.onLine;
5   },
6
7   addTodo: function(todo) {
8     restClient.addTodo(todo, function(err, todoId) {
9       if(!err) {
10         todoStorage.addTodo(todo);
11       } else {
12         console.log(err);
13       }
14     });
15   },
16
17   getAllTodos: function(callback) {
18     if(this.isOnline()) {
19       restClient.getAllTodos(function(err, todos) {
20         if(!err) {
21           todoStorage.setTodos(todos);
22         } else {
23           todos = todoStorage.getAllTodos();
24         }
25         callback(err, todos);
26       });
27     } else {
28       todos = todoStorage.getAllTodos();
29       callback(null, todos);
30     }
31   }
32 }
```

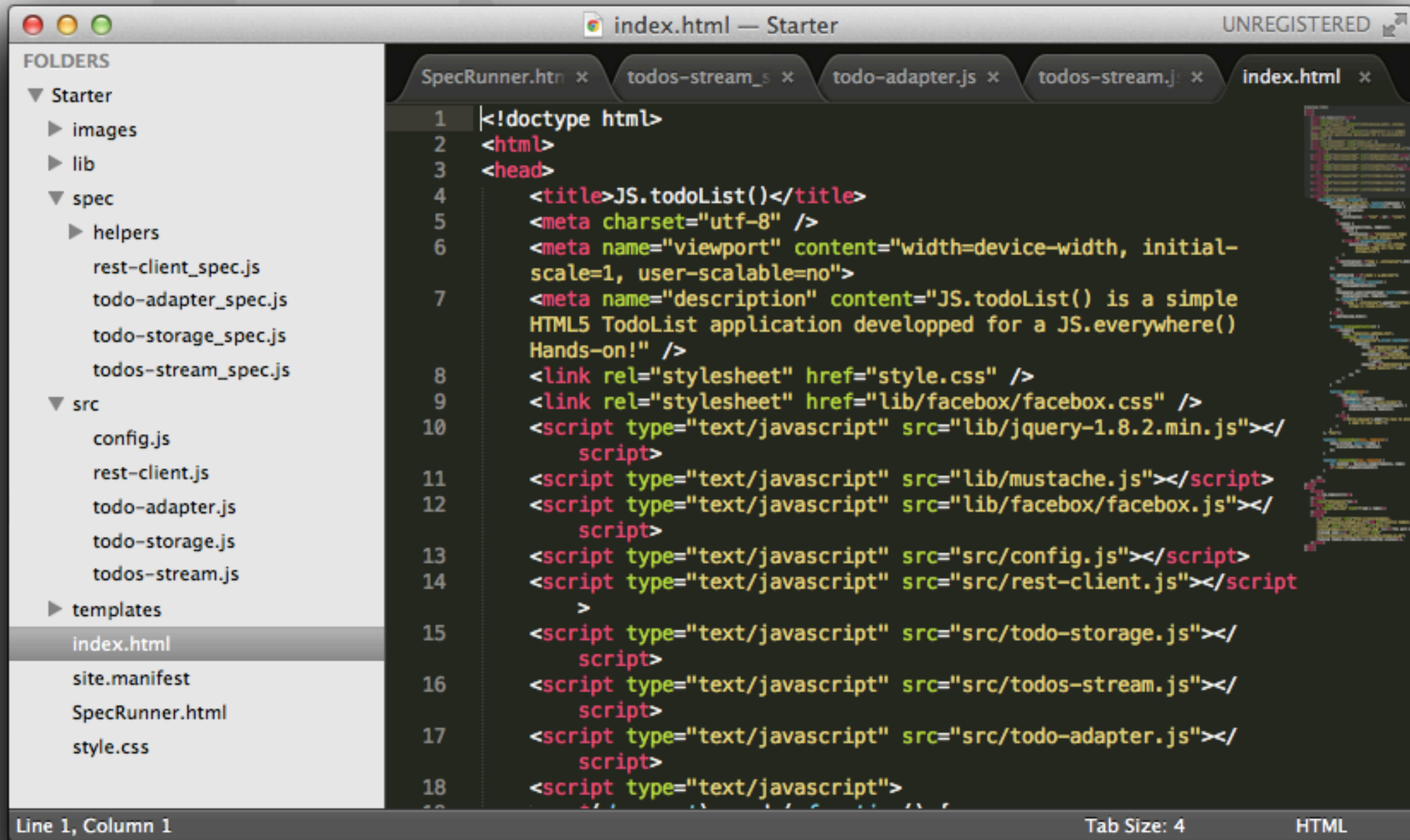
The left sidebar shows the project structure under 'FOLDERS':

- ▼ Starter
 - ▶ images
 - ▶ lib
 - ▼ spec
 - ▶ helpers
 - rest-client_spec.js
 - todo-adaptor_spec.js
 - todo-storage_spec.js
 - todos-stream_spec.js
 - ▼ src
 - config.js
 - rest-client.js
 - todo-adaptor.js
 - todo-storage.js
 - todos-stream.js
 - ▶ templates
 - index.html
 - site.manifest
 - SpecRunner.html
 - style.css

The status bar at the bottom indicates 'Line 1, Column 1', 'Tab Size: 4', and 'JavaScript'.



Project Skeleton



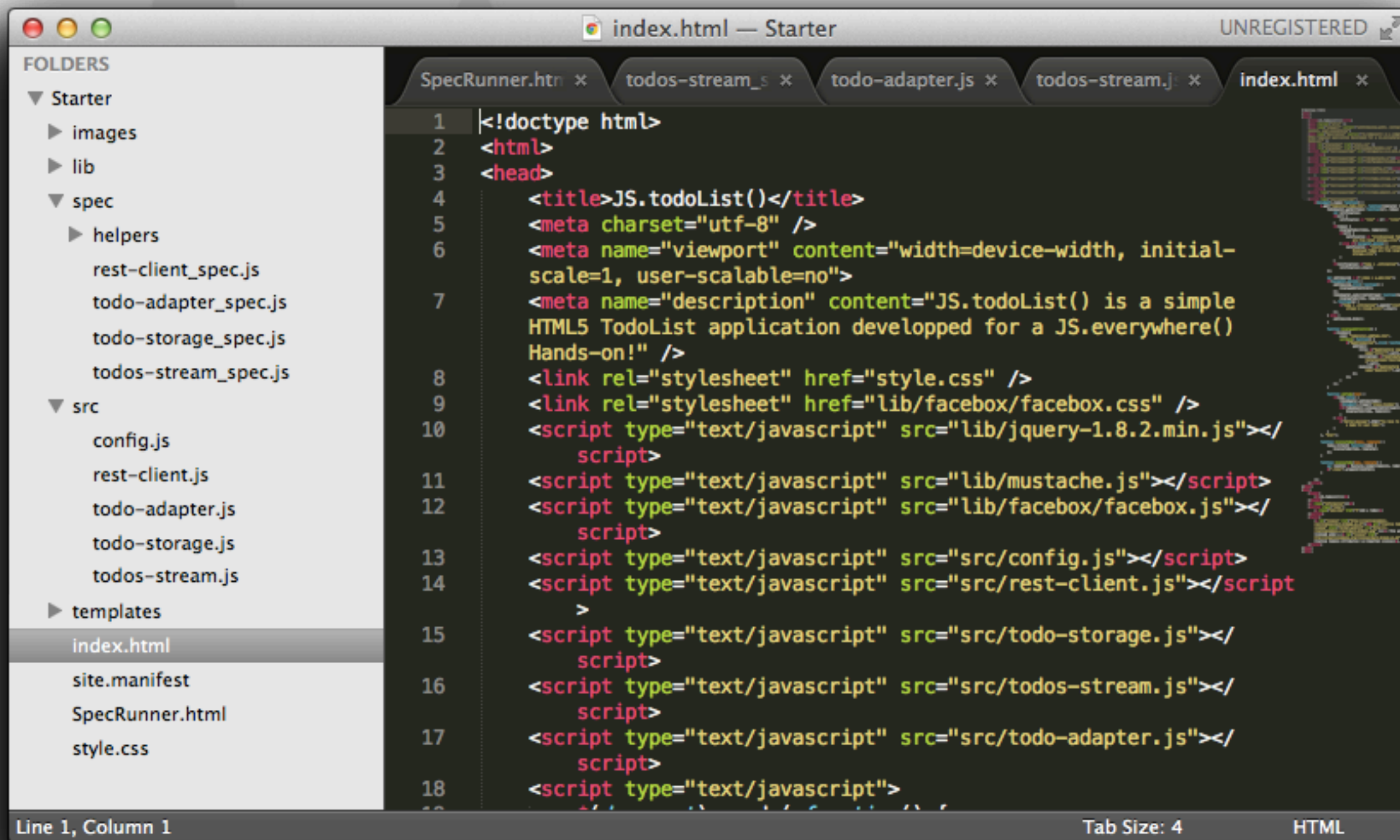
The screenshot shows a web browser window with the title "index.html — Starter" and a status bar indicating "UNREGISTERED". The browser's address bar shows "index.html". The page content is an HTML document with the following structure:

```
1 <!doctype html>
2 <html>
3 <head>
4   <title>JS.todoList()</title>
5   <meta charset="utf-8" />
6   <meta name="viewport" content="width=device-width, initial-
7     scale=1, user-scalable=no">
8   <meta name="description" content="JS.todoList() is a simple
9     HTML5 TodoList application developped for a JS.everywhere()
10    Hands-on!" />
11   <link rel="stylesheet" href="style.css" />
12   <link rel="stylesheet" href="lib/facebox/facebox.css" />
13   <script type="text/javascript" src="lib/jquery-1.8.2.min.js"></
14     script>
15   <script type="text/javascript" src="lib/mustache.js"></script>
16   <script type="text/javascript" src="lib/facebox/facebox.js"></
17     script>
18   <script type="text/javascript" src="src/config.js"></script>
19   <script type="text/javascript" src="src/rest-client.js"></script>
20   <script type="text/javascript" src="src/todo-storage.js"></
21     script>
22   <script type="text/javascript" src="src/todos-stream.js"></
23     script>
24   <script type="text/javascript" src="src/todo-adapter.js"></
25     script>
26   <script type="text/javascript">
```

The browser's status bar shows "Line 1, Column 1", "Tab Size: 4", and "HTML".



Project Skeleton



```
1 <!doctype html>
2 <html>
3 <head>
4   <title>JS.todoList()</title>
5   <meta charset="utf-8" />
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21     script>
22   <script type="text/javascript" src="src/todos-stream.js"></
23     script>
24   <script type="text/javascript" src="src/todo-adaptor.js"></
25     script>
26   <script type="text/javascript">
```



The Web API

<http://<MY-IP-ADDRESS>:3000/>

- GET /todos
 - Return all todos
- POST /todos
 - Create a new todo
- GET /stream
 - New todos stream



Resources

- About Server Sent Event:

https://developer.mozilla.org/en-US/docs/Server-sent_events/Using_server-sent_events

- About localStorage:

<https://developer.mozilla.org/en-US/docs/DOM/Storage>



For the fastest ones

- Add the Meta Viewport and test it with a Mobile Browser (Opera Mobile Emulator)

<http://dev.opera.com/articles/view/an-introduction-to-meta-viewport-and-viewport/>

- Make your code modular and use RequireJS !

Need help ?

- If you are stuck or have any questions:
 - Renaud
 - Marc
 - Adrien
 - And me (Brice)

Questions ?



Download the project !

JS.everywhere



JS.everywhere Europe (Paris, 16-17, Nov)

Saturday, November 17, 12