

**SE31520**  
**Developing Internet-Based Applications**

**Enhancing the CS-Alumni Application**

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# Contents

|  |           |
|--|-----------|
| <b>Document Summary</b>                      | <b>3</b>  |
| <b>Application Design</b>                    | <b>3</b>  |
| CS-Alumni Chrome Browser Extension . . . . . | 3         |
| Rational . . . . .                           | 3         |
| Module Diagrams . . . . .                    | 3         |
| Program Operation . . . . .                  | 3         |
| CS-Alumni Rails Application . . . . .        | 11        |
| New Additions . . . . .                      | 11        |
| Modifications . . . . .                      | 11        |
| Communication Between Applications . . . . . | 11        |
| RESTful Web Interfaces . . . . .             | 11        |
| Data Flow Diagrams . . . . .                 | 11        |
| <b>Application Testing</b>                   | <b>11</b> |
| QUnit Tests . . . . .                        | 11        |
| CS-Alumni Rails Application . . . . .        | 11        |
| Communication Between Applications . . . . . | 11        |
| <b>Evaluation</b>                            | <b>11</b> |
| <b>Something Extra</b>                       | <b>11</b> |

## Document Summary

## Application Design

### CS-Alumni Chrome Browser Extension

#### Rational

#### Module Diagrams

#### Program Operation

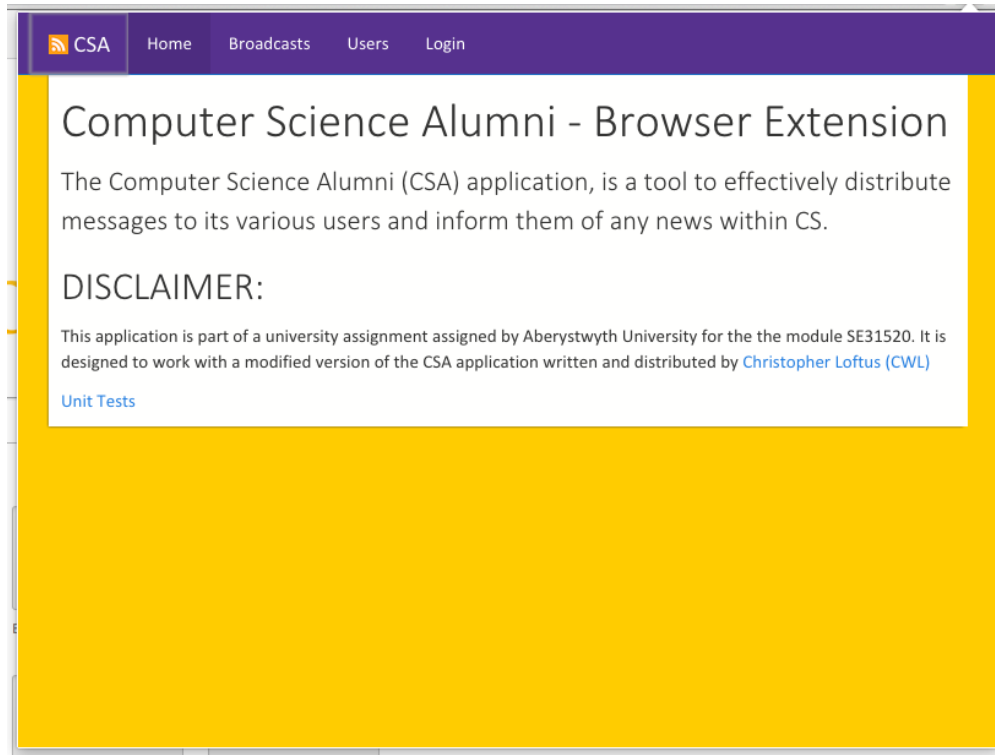


Figure 1: The screenshot above is the landing screen for the browser extension.

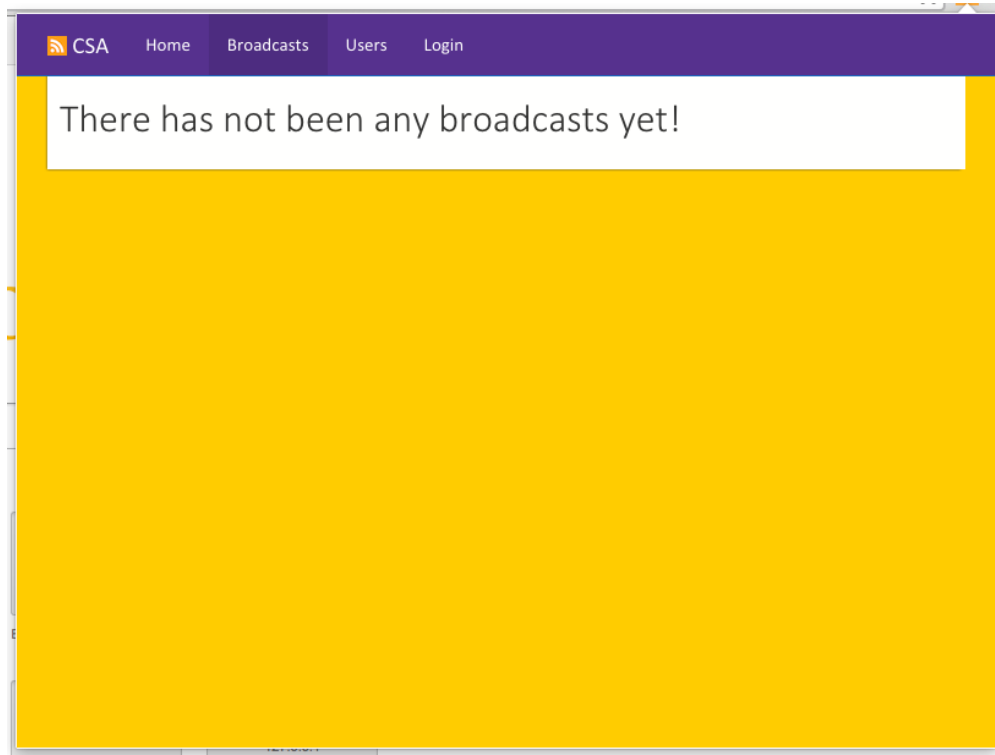


Figure 2: Above we see the broadcasts screen with no broadcasts available.

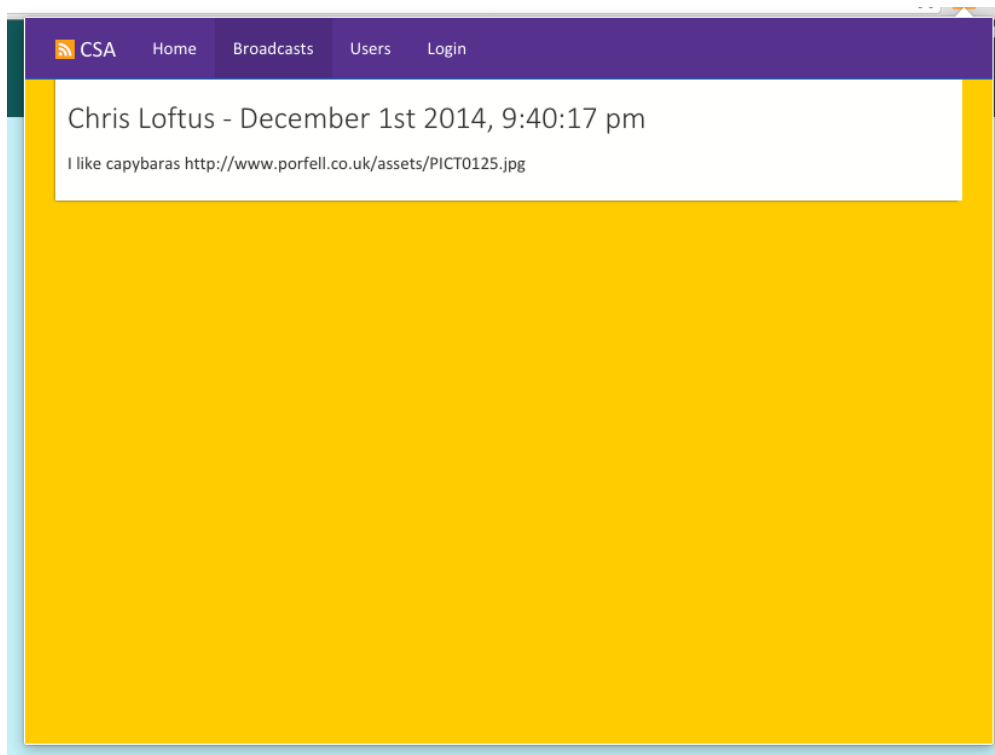


Figure 3: This is what the populated broadcast screen looks like.

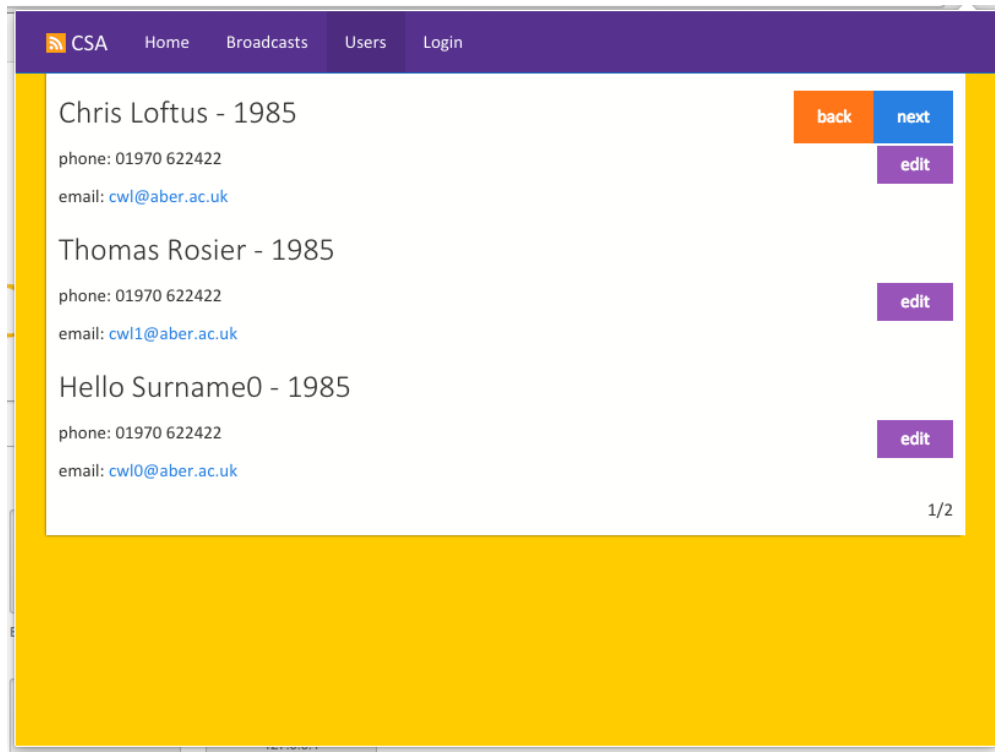


Figure 4: Here we have a screenshot of the user's screen.

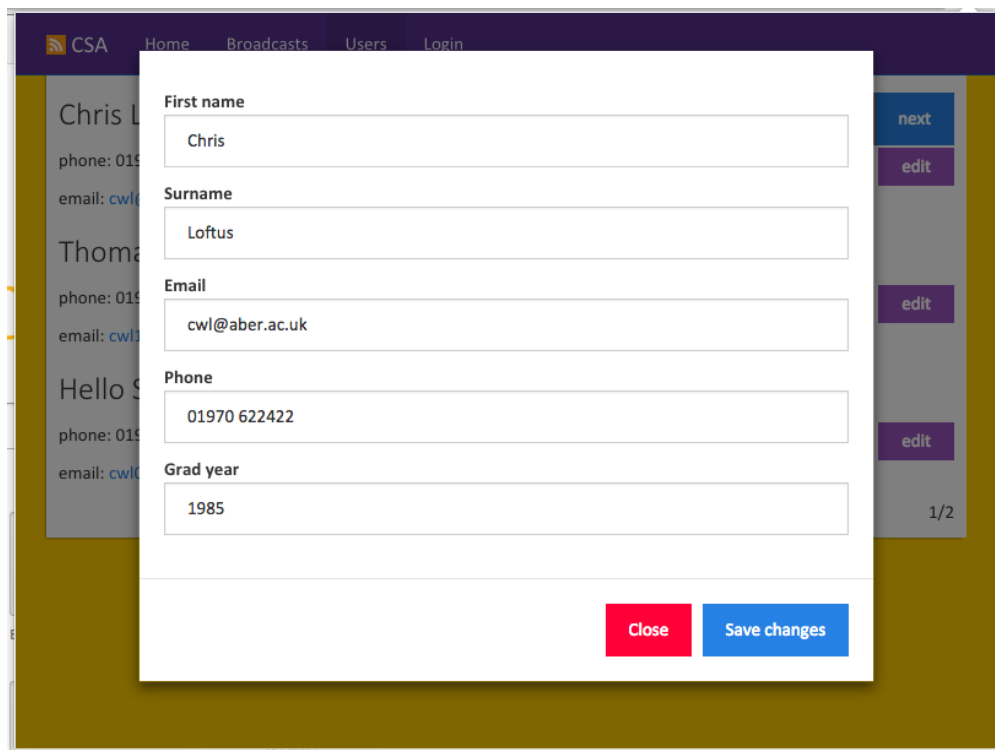
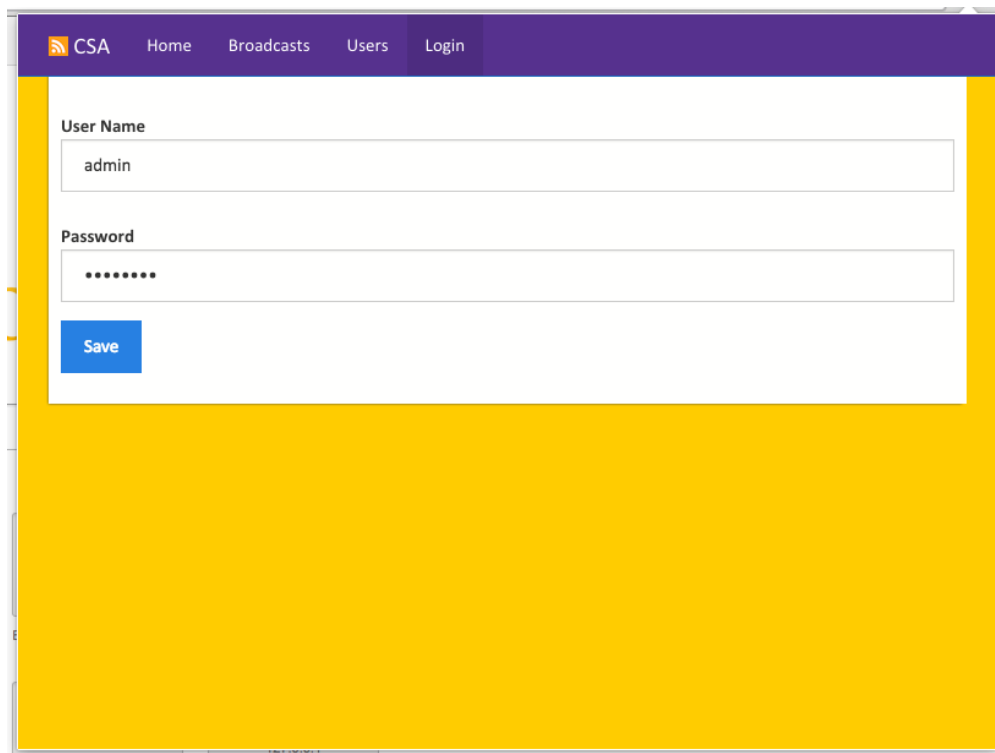


Figure 5: Above we have a screenshot showing the appearance of the modal window we used to edit the user information.



The screenshot shows a web application interface with a purple header bar containing the CSA logo and navigation links: Home, Broadcasts, Users, and Login. The main content area has a yellow background. It features a login form with two input fields: 'User Name' containing the text 'admin' and 'Password' containing seven dots. Below the password field is a blue 'Save' button.

Figure 6: This is a screenshot of the login screen.



The screenshot shows a web application interface with a dark teal header bar containing a language dropdown set to 'English' and navigation links: Home, Jobs, Profile, Users, and Broadcasts. The main content area has a light blue background. It features a 'New broadcast' form with a large red rectangular area for content. Above this area is the text 'I like capybaras http://www.porfejl.co.uk/assets/PICT0125.jpg'. To the right of the red area is a list of options: 'General news' (selected with a radio button), 'Jobs news' (unselected with a radio button), 'Email' (checked with a checkbox), 'Extension' (checked with a checkbox), and 'Twitter' (checked with a checkbox). Below the red area is a 'Shortens URL' label and an input field. At the bottom are two buttons: 'Broadcast' and 'Back'.

Figure 7: This is the unit tests for the background.js module for the browser extension.

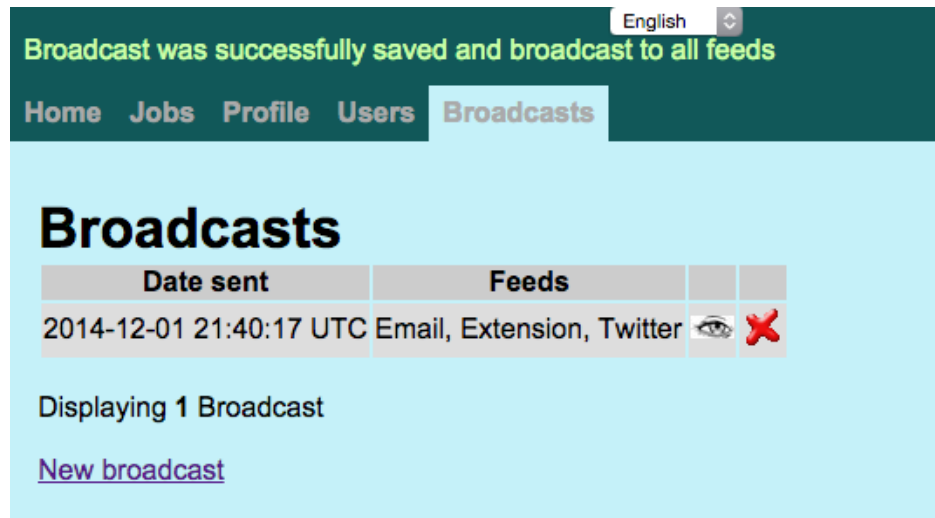


Figure 8: This is the unit tests for the background.js module for the browser extension.

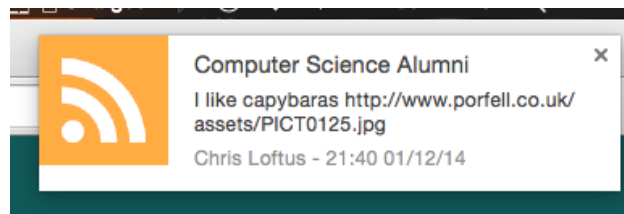


Figure 9: This is the unit tests for the background.js module for the browser extension.

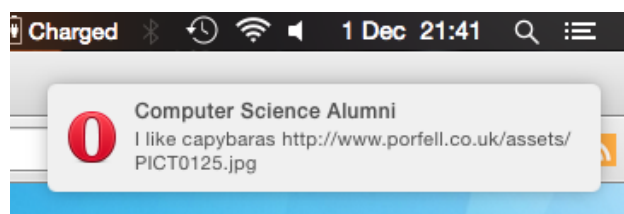


Figure 10: This is the unit tests for the background.js module for the browser extension.



Figure 11: This is the unit tests for the background.js module for the browser extension.

## Background.js – Unit Tests.



Figure 12: This is the unit tests for the background.js module for the browser extension.



## Browser Info – Unit Tests.

CSA Extension - Unit Testing

☐ Hide passed tests ☐ Check for Globals ☐ No try-catch

**Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_10\_1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.71 Safari/537.36**

Tests completed in 30 milliseconds.  
3 assertions of 3 passed, 0 failed.

|                                    |       |      |
|------------------------------------|-------|------|
| 1. Check Browser Name (1)          | Rerun | 2 ms |
| 2. Check Browser Minor Version (1) | Rerun | 0 ms |
| 3. Check Browser Major Version (1) | Rerun | 0 ms |

[Back to Testing](#)

Figure 13: This image shows the browserinfo.js module completing its tests successfully.

## Local Storage – Unit Tests.

CSA Extension - Unit Testing

☐ Hide passed tests ☐ Check for Globals ☐ No try-catch

**Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_10\_1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.71 Safari/537.36**

Tests completed in 27 milliseconds.  
3 assertions of 3 passed, 0 failed.

|                              |       |      |
|------------------------------|-------|------|
| 1. Load Nothing (1)          | Rerun | 3 ms |
| 2. Local Storage Save. (1)   | Rerun | 2 ms |
| 3. Local Storage Reload. (1) | Rerun | 0 ms |

[Back to Testing](#)

Figure 14: This shows the LocalStorage.js module passing all its unit tests.

## Rest Tool Kit– Unit Tests.

| CSA Extension - Unit Testing  |       |       |
|---|-------|-------|
| <input type="checkbox"/> Hide passed tests <input type="checkbox"/> Check for Globals <input type="checkbox"/> No try-catch     |       |       |
| <b>Mozilla/5.0 (Macintosh; Intel Mac OS X 10_10_1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.71 Safari/537.36</b> |       |       |
| Tests completed in 70 milliseconds.<br>7 assertions of 7 passed, 0 failed.  |       |       |
| 1. Auth Token is built correctly. (1)   | Rerun | 2 ms  |
| 2. Rest Get Object (1)  | Rerun | 20 ms |
| 3. Authentication succeeded. (1)  | Rerun | 12 ms |
| 4. Build Auth Token (1)   | Rerun | 1 ms  |
| 5. Authentication clear succeeded. (2)  | Rerun | 19 ms |
| 6. Update user record via POST (1)  | Rerun | 2 ms  |
| <a href="#">Back to Testing</a>   |       |       |

Figure 15: Above we see the RestToolkit.js module successfully completing all its unit tests.

## Utils.js – Unit Tests.

| CSA Extension - Unit Testing  |       |      |
|---|-------|------|
| <input type="checkbox"/> Hide passed tests <input type="checkbox"/> Check for Globals <input type="checkbox"/> No try-catch     |       |      |
| <b>Mozilla/5.0 (Macintosh; Intel Mac OS X 10_10_1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.71 Safari/537.36</b> |       |      |
| Tests completed in 19 milliseconds.<br>2 assertions of 2 passed, 0 failed.  |       |      |
| 1. Diffed Array (1)   | Rerun | 2 ms |
| 2. Reverse Diffed Array (1)   | Rerun | 1 ms |
| <a href="#">Back to Testing</a>   |       |      |

Figure 16: Included above we see the Utils.js module efficiently complete all of its unit tests.

## CS-Alumni Rails Application

New Additions

Modifications

Communication Between Applications

RESTful Web Interfaces

Data Flow Diagrams

## Application Testing

QUnit Tests

## Technologies

CS-Alumni Rails Application

Communication Between Applications

Evaluation

Something Extra



Figure 17: Above is a image of the Pebble smartwatch running the CSA application.



Figure 18: This is a screenshot taken from the Pebble smartwatch.

## Attributions

## References

- [1] Mark McDonnell. *SQLite and ActiveRecord*. Oct. 2013. URL: <http://www.integralist.co.uk/posts/sqlite-and-activerecord/>.
- [2] Daniel Morrison. *Building Awesome Rails APIs: Part 1*. June 2013. URL: <http://collectiveidea.com/blog/archives/2013/06/13/building-awesome-rails-apis-part-1/>.