

Systematic, Functional tests using Partitioning, Test drivers and Test oracles

| | |
|---------------------------|--|
| Test Number | UA_1 |
| Test Suite | User Authentication |
| Summary | should invalidate the form if passwords do not match |
| Preconditions | N/A |
| Test Data | Password: Password123 Confirm Password: Password321 |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup invalid |
| Actual Result | Formgroup invalid |
| Automation | PASS |

| | |
|---------------------------|--|
| Test Number | UA_2 |
| Test Suite | User Authentication |
| Summary | should validate the form if passwords match |
| Preconditions | N/A |
| Test Data | Password: Password123 Confirm Password: Password123 |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup valid |
| Actual Result | Formgroup valid |
| Automation | PASS |

| | |
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| Test Number | UA_3 |
| Test Suite | User Authentication |
| Summary | should invalidate the form when both password and confirm password are empty, because even tho passwords match, we cannot accept |

Test case specification

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|---------------------------|---|
| | empty password fields. |
| Preconditions | N/A |
| Test Data | Password: Confirm Password: |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup invalid |
| Actual Result | Formgroup valid |
| Automation | FAIL |
| Next Steps | Introduce functionality to invalidate form for empty fields, check every other field to ensure it invalidates form in empty |

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|---------------------------|---|
| Test Number | UA_4 |
| Test Suite | User Authentication |
| Summary | should invalidate the form when password is valid and confirm password is empty |
| Preconditions | N/A |
| Test Data | Password: Password123 Confirm Password: |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup invalid |
| Actual Result | Formgroup invalid |
| Automation | PASS |

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| Test Number | UA_5 |
| Test Suite | User Authentication |
| Summary | should invalidate the form when password is empty and confirm password is valid |

Test case specification

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| Preconditions | N/A |
| Test Data | Password: Confirm Password: Password123 |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup invalid |
| Actual Result | Formgroup invalid |
| Automation | PASS |

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|---------------------------|---|
| Test Number | UA_6 |
| Test Suite | User Authentication |
| Summary | should validate the form when password and confirm password have minimum length and match |
| Preconditions | N/A |
| Test Data | Password: Pass12 Confirm Password: Pass12 |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup valid |
| Actual Result | Formgroup valid |
| Automation | PASS |

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|----------------------|---|
| Test Number | UA_7 |
| Test Suite | User Authentication |
| Summary | should validate the form when password contains special characters and matches confirm password |
| Preconditions | N/A |
| Test Data | Password: P@ssw0rd! Confirm Password: P@ssw0rd! |

Test case specification

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| Steps to reproduce | run ng test |
| Expected Result | Formgroup valid |
| Actual Result | Formgroup valid |
| Automation | PASS |

| | |
|---------------------------|--|
| Test Number | UA_8 |
| Test Suite | User Authentication |
| Summary | should validate the form when password is long and matches confirm password |
| Preconditions | N/A |
| Test Data | Password: ThisIsAVeryLongPassword12345 Confirm Password: ThisIsAVeryLongPassword12345 |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup valid |
| Actual Result | Formgroup valid |
| Automation | PASS |

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|---------------------------|--|
| Test Number | UA_9 |
| Test Suite | User Authentication |
| Summary | should invalidate the form when password contains only letters and does not match confirm password |
| Preconditions | N/A |
| Test Data | Password: onlyletters Confirm Password: stilljustletters |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup invalid |
| Actual Result | Formgroup invalid |

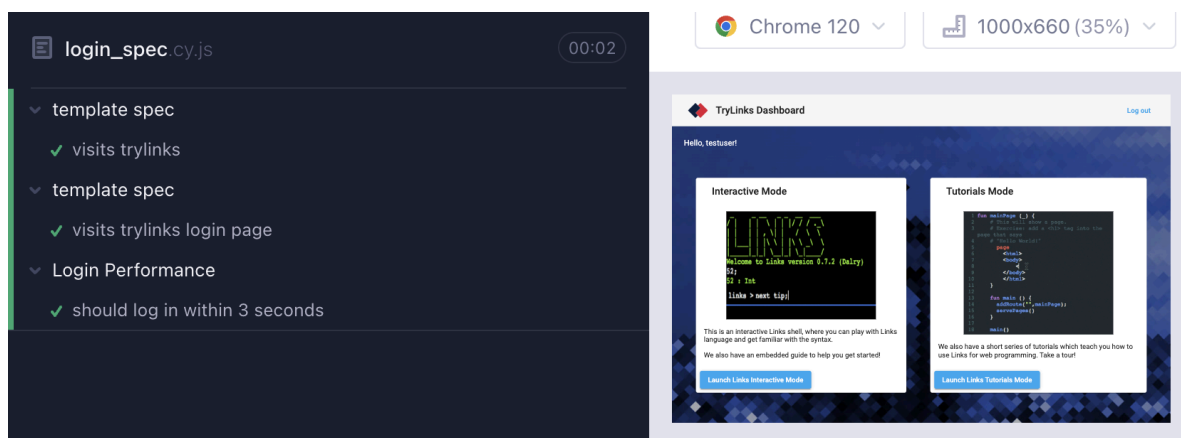
Test case specification

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| Automation | PASS |
|------------|------|

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|--------------------|---|
| Test Number | UA_10 |
| Test Suite | User Authentication |
| Summary | should validate the form when password contains only numbers and matches confirm password |
| Preconditions | N/A |
| Test Data | Password: 12345678 Confirm Password: 12345678 |
| Steps to reproduce | run ng test |
| Expected Result | Formgroup invalid |
| Actual Result | Formgroup invalid |
| Automation | PASS |


e2e tests using cypress tested on deployed domain trylinks.net

The outcome of these tests is effectively communicated within the cypress GUI. Each test outcome is displayed and more detail is shown if clicked into. I will show a few screenshots below but it is best to run the e2e tests and have a look.



The image shows two side-by-side screenshots. The left screenshot is the Cypress test runner interface, displaying a test suite named 'login_spec.cy.js' with a duration of 00:02. The test suite includes two 'template spec' blocks and a 'Login Performance' block, all of which are marked as passed with green checkmarks. The right screenshot is the TryLinks dashboard, which features a 'Hello, testuser!' greeting and two main sections: 'Interactive Mode' and 'Tutorials Mode'. The 'Interactive Mode' section shows a terminal window with the 'LINKS' logo and a prompt to enter a command. The 'Tutorials Mode' section displays a code editor with a JavaScript snippet for a login function. Both sections have buttons to 'Launch Links Interactive Mode' and 'Launch Links Tutorial Mode'.

Test case specification

 dashboard_spec.cy.js 00:10

Dashboard Tests

✓ should logout, and redirect to welcome page

BEFORE EACH

```
1  visit http://trylinks.net/start
2  get #mat-input-0
3  -type testuser
4  get #mat-input-1
5  -type password
6  get .sign-in-button
7  -click
   (xhr) ● POST 200 /api/user/login
8  get .tl-logout-button
9  -assert expected <button.mat-focus-indicator.tl-logout-button.mat-button.mat-button-base.mat-primary> to be visible
   (new url) http://trylinks.net/dashboard
```

TEST BODY

```
1  get .tl-logout-button
2  -click
   (xhr) ● GET 200 /api/logout
3  get button:contains("Sign up / Sign in")
4  -assert expected <button.mat-focus-indicator.mat-raised-button.mat-button-base> to be visible
   (new url) http://trylinks.net/welcome
```

✓ should not have access to dashboard (logged out user)

✓ should not have access to interactive (logged out user)

✓ should not have access to tutorial (logged out user)

✓ should have access to dashboard (logged in user)

✓ should have access to interactive (logged in user)

✓ should have access to tutorial (/interactive)

and so on.....

Final Coverage for unit tests

```
===== Coverage summary =====  
Statements   : 15.82% ( 47/297 )  
Branches     : 12.9% ( 8/62 )  
Functions    : 8.77% ( 10/114 )  
Lines        : 15.69% ( 46/293 )  
=====
```