Project Report

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| --- | --- |
| Project Title | Plan, Schedule, Test Community Portal |
| Qualification Name (NICF) | Advanced Certificate in Software Applications (Development and Deployment) |
| Product Name | NICF-Capstone Project using Java |
| Module Name (NICF) | NICF-Capstone Project using Java |

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| --- | --- | --- | --- |
| Student name | | Assessor name | |
| Ida Bagus Ketut Yoghantara | |  | |
| Date issued | Completion date | | Submitted on |
| 29 September 2022 | 14 October 2022 | | 14 October 2022 |
|  | |  | |
| Project title | Plan, Schedule, Test Community Portal | | |

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| Learner declaration |
| I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.  Student signature:  Date: 02 October 2022 |

Content

1. Project background
2. Project Objectives
3. Project Requirement Specifications
4. Task 1
5. Task 2
6. Task 3
7. Task 4
8. Task 5
9. Task 6

Project Background

This Project is used for Summative Assessment of student in the “NICF-Capstone  
Project using Java” of the NICF Course “Advanced Certificate in Web Development”  
In this project you must design, plan & test the community portal website you have  
developed in module 5 “NICF-Web Development Foundations”.

You have been approached by ‘ABC Jobs Pte Ltd’ as a website developer to test  
their community portal for Software Developers. The community portal was  
developed as part of Module 3, Module 4, Module 5. The Scope of the Project is to plan, create, schedule and execute tests.

Project Objective

**Project Outcomes & Deliverables**

You should perform all the tasks in the Project Task List and prepare the following  
during the project:

* Briefly explain different types of testing which you will undertake
* Test Schedule Document
* Phase test plan
* Execute test scripts and verify the results
* Prepare a Project Report as per pre-defined template
* Prepare a Project Presentation as per pre-defined template
* Prepare a Testing Document

**Scope of the Project:**

* Features to be tested:  
  1. Registration  
  2. Login  
  3. Logout  
  4. Reset forgotten password  
  5. Search users  
  6. Posting thread  
  7. Commenting thread  
  8. Posting job  
  9. Applying job
* Features which will not to be tested:  
  1. Send messages

Tools & platform used

1. **Project Libre**

Project Libre is a project management software company with both a free open-source desktop and an upcoming Clod version. Project Libre Cloud is in beta testing. Project Libre desktop is a free and open-source project management software system intended ultimately as a standalone replacement for Microsoft Project.

1. **Microsoft Word**

Microsoft Word is a word processing software developed by Microsoft.

1. **Microsoft Power Point**

Microsoft PowerPoint is a powerful slide show presentation program. It is a standard component of the company's Microsoft Office suite software, and is bundled together with Word, Excel, and other office productivity tools. The program uses slides to convey information rich in multimedia.

Project Requirements Specifications

Define the community portal functional features at high level.

**Software Programmers**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Page Name/ Function Name** | **Description** | **SQL** |
| 1 | Registration | This page is for user to register to the website and save their data to database | Insert into tb\_users (email, enabled, password) values (?, ?, ?);  Insert into tb\_user\_profile (city, country, first\_name, id\_job, last\_name, id\_user) values (?, ?, ?, ?, ?, ?); |
| 2 | Login user | Used for user to login to the website | Select \* from tb\_users where email = “email@email.com” and password = "password123"; |
| 3 | Forgot password | Used for user to get their forgotten password by resetting their old password by email confirmation | Select \* from tb\_users where email = “email@email.com”; |
| 4 | Search user | Used for searching another user and view their profile page | "SELECT \* FROM tb\_user\_profile AS UP LEFT JOIN tb\_jobs AS J ON UP.id\_job = J.id\_job WHERE UP.first\_name LIKE '%' :keyword '%' OR UP.last\_name LIKE '%' :keyword '%' OR UP.country LIKE '%' :keyword '%' OR UP.city LIKE '%' :keyword '%' OR J.company\_name LIKE '%' :keyword '%';" |
| 5 | Update/Edit profile page | Used for user to update or edit their profile page information | UPDATE tb\_user\_profile SET first\_name=”Andri” WHERE id\_user = 1; |
| 6 | Change password | Used for user to change their account password | UPDATE tb\_users SET password=“newpassword” WHERE id\_user = 1; |
| 7 | Posting Thread | Used for user to posting thread for discussion | INSERT INTO tb\_thread (title, content) value (?,?)  INSERT INTO tb\_thread\_tags (id\_thread, first\_tag, second\_tag) value (?,?,?) |
| 8 | Comment Thread | Used for user to comment in thread | INSERT INTO tb\_comment (id\_thread, id\_profile, comment) value (?,?,?) |
| 9 | Apply job | Used for user to applying to a job that exist in the website | INSERT INTO tb\_apply\_job (id\_profile, id\_job, status) value (?,?,?) |

**Admin**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Page Name/ Function Name** | **Description** | **SQL** |
| 1 | Login admin | Used for admin to login as administrator of the website | Select \* from tb\_admin where email = “lithanabcportal@gmail.com” and password = “admin123”; |
| 2 | Dashboard | Administrator page to manage all the users of the website, this page includes add, view list user, edit user, delete user, send bulk email, posting job and accepting user to the job functionality. | Select \* from tb\_users;  Select \* from tb\_user\_profile;  Select \* from tb\_jobs; |
| 3 | Add user | Used for adding new user | Insert into tb\_users (email, enabled, password) values (?, ?, ?);  Insert into tb\_user\_profile (city, country, first\_name, id\_job, last\_name, id\_user) values (?, ?, ?, ?, ?, ?); |
| 4 | Edit user | Used for editing user data | UPDATE tb\_user\_profile SET first\_name=”Andri” WHERE id\_user = 1; |
| 5 | Delete user | Used for deleting user data | DELETE FROM tb\_users  WHERE id\_user = 1; |
| 6 | Posting jobs | Used for posting jobs opportunity to the software programmers/user of the website | Insert into tb\_jobs (job\_level, job\_time, job\_name, job\_description, company\_name) values (?, ?, ?, ?, ?); |
| 7 | Accept user for job | Used for accepting user for the job they applying | Update tb\_user\_profile SET id\_job = 1 WHERE id\_user = 1; |

**Test methods chosen for testing ABC Jobs Community Portal are:**

1. **Unit testing**

Unit tests are very low level and close to the source of an application. They consist in testing individual methods and functions of the classes, components, or modules used by your software. Unit tests are generally quite cheap to automate and can run very quickly by a continuous integration server.

1. **UAT testing**

Acceptance tests are formal tests that verify if a system satisfies business requirements. They require the entire application to be running while testing and focus on replicating user behaviors.

1. **Cross-browser testing**

Cross-browser testing, also called browser testing, is a quality assurance (QA) process that checks whether a web-based application, site or page function as intended for end users across multiple browsers and devices.

Task 1

Task Statement:

1. Write a brief requirement specification for the Community Portal.
2. Include it as part of the Project Report

Solution:

1. Functional Requirements

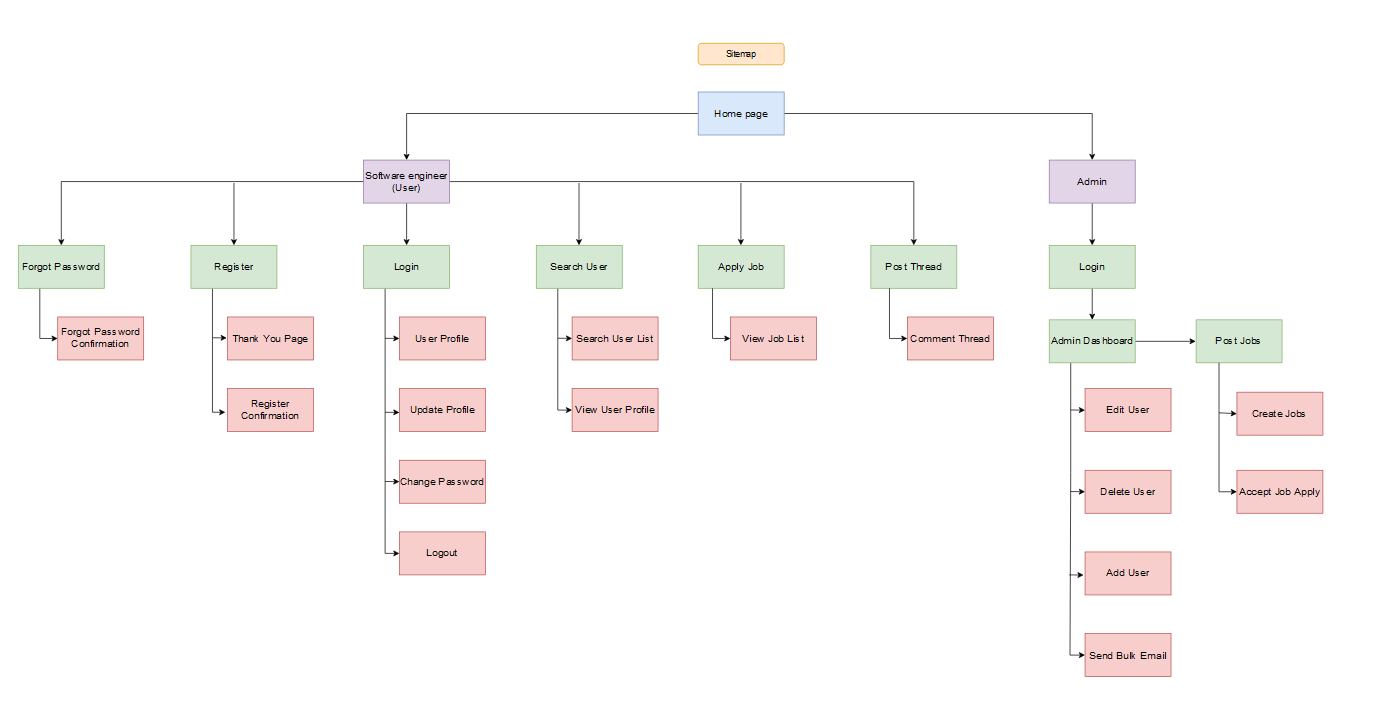
Public module

|  |  |  |  |
| --- | --- | --- | --- |
| No | Web Page/ Process | Requirements | Page Functions (create, edit, view, delete) |
| 1 | Registration | User can register on the register page | Create |
| 2 | Login | User can login on the login page | View |
| 3 | Forgot Password | User can request reset forgotten password | View & edit |
| 4 | Logout | User can logout from the website | View |
| 5 | Search Users | User can search others user | View |
| 6 | Update Profile | User can update their profile | Edit |
| 7 | User Profile | User can view other user profile | View |
| 8 | Thread | User can read and post a thread to start a discussion or sharing a knowledge | Create & view |
| 9 | Comment Thread | User can comment threads that exist in the website | Create |
| 10 | Apply Job | User can apply to job that exist in the website | View & edit |

Private module

|  |  |  |  |
| --- | --- | --- | --- |
| No | Web Page/ Process | Requirements | Page Functions (create, edit, view, delete) |
| 1 | Login admin | Used for admin to login as administrator of the website | View |
| 2 | Dashboard | Administrator page to manage all the users of the website, this page includes add, view list user, edit user, delete user, send bulk email, posting job and accepting user to the job functionality. | View, edit, create, delete |
| 3 | Posting jobs | Used for posting jobs opportunity to the software programmers/user of the website | Create |
| 4 | Accept user for job | Used for accepting user for the job they applying | View & edit |
| 5 | Send bulk email | Used for sending bulk email to all the users | Create |

Sitemap



1. Non-Functional Requirements

|  |  |  |
| --- | --- | --- |
| No | Requirements | Purpose |
| 1 | Performance | Define how well the application to accomplishes certain functions under specific conditions |
| 2 | Availability | Describe how likely the system is accessible for a user at a given point of time |
| 3 | Security aspect | Assures all data inside the system or its part will be protected against malware attack or unauthorized access |
| 4 | Database backup and recovery | To protect the database against data loss and reconstruct the database after data loss |
| 5 | Compatibility | Defines how a system can coexist with another system in the same environment. |
| 6 | **Localization** | Defines how well a system or its element falls in line with the context of the local market |
| 7 | Scalability | Assesses the highest workloads under which the system will still meet the performance requirements. |

1. Technical Requirements

Hardware

Minimum:  
 a. 2 CPU Cores  
 b. 2 GB Ram  
 c. Disk I/O subsystem applicable to a write-intensive database  
   
 Recommended:  
 a. 4 CPU Cores  
 b. 8 GB Ram  
 c. RAID10 or RAID 0+1 disk setup

System Integration

* JDBC and ODBC connector

Software

* Eclipse Enterprise Edition
* MySQL
* Apache Tomcat
* MySQL Workbench
* Project Libre
* XAMPP
* Mozilla Firefox
* Google Chrome
* Ngrok
* Lamdatest

Task 2

Task Statement:

1. Briefly explain different types of testing, how they will help to create a better  
   system.
2. Include it as part of Project Presentation.

Solution:

1. Unit Testing

* Helps developer write better code
* It helps developer to catch bugs earlier
* It makes the code easier to refactor

1. Integration Testing

* Helps in identifying integration issues between the modules
* Improves test coverage and provides an additional level of reliability
* helps in ensuring that the integrated modules work properly before moving to the system testing of the complete application

1. User Acceptance Testing

* Keeping ongoing maintenance costs as low as possible
* Increase end-user happiness
* Increasing software robustness and usability

1. Cross Browser Testing

* **Reduction of repetitive work**
* **Greater consistency and repeatability**
* **Ease of access to information about tests or testing**

Task 3

Task Statement:

1. Propose relevant tests suitable for the Project Scenario
2. Include it as part of Project Presentation

Solution:

Functional testing:

1. Unit testing
2. User acceptance testing

Non-Functional testing:

1. Cross browser testing
2. Task 4

Task Statement

1. Write briefly on optimal scheduling times for different tests
2. Prepare a schedule for execution of tests
3. Include it as part of Project Presentation.

Solution

1. Scheduling
2. Weighting (1 ~ 3)

* 1 – Simple
* 2 – Medium
* 3 – Complex

1. Functional points (1 ~ 5)

* 1 ~ 2 – If rarely used
* 3 ~ 4 – Often used
* 5 – Most often used

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | **Web page** | **Weighting** | **Functional Points (FP)** | **Total** |
| 1 | Registration | 3 | 2 | 6 |
| 2 | Login | 3 | 5 | 15 |
| 3 | Logout | 1 | 3 | 3 |
| 4 | Forgot Password | 1 | 1 | 1 |
| 5 | Search Users | 2 | 4 | 8 |
| 6 | Update user profile | 1 | 2 | 2 |
| 7 | View user profile | 1 | 5 | 5 |
| 8 | Posting Thread | 2 | 2 | 4 |
| 9 | Comment Thread | 2 | 5 | 10 |
| 10 | Send bulk email | 1 | 2 | 2 |
| 11 | Apply Job | 3 | 3 | 9 |
|  | Total functional points | | | 64 |
|  | Estimated person hour/ FP | | | 2 |
|  | Total hours needed | | | 128 |
|  | Total days needed (8h/day) | | | 16 |

1. Test schedule

|  |  |  |
| --- | --- | --- |
| Test Schedule ID: | TSCH01 |  |
| Product ID / Name: | ABC Jobs Community Portal |  |
| Product Version or Build: | 0.0.1 |  |
| Present Owner: | Ida Bagus Ketut Yoghantara | Software Engineer |
| Created On: | 29 September 2022 |  |
| Review On: | 03 October 2022 |  |
| Review By: | Alex Sulivan | QA Manager |
| Review Comments: | Good |  |
| Current Version: | 1.0 |  |
| Change Details: | Posting thread feature |  |
| Current Status: | Complete |  |
| Signing Off Authority: | Ida Bagus Ketut Yoghantara | Software Engineer |

1. Task 5

Task Statement

1. Develop a Phase Test Plan for testing the application.
2. Include it as part of Project Report.

Solution

Goal

The goal of this test is to identify and measure the problems / issue in the web application.

Objectives

Validate and verify system functionality works according to requirements.

**Features to be tested**

1. Registration
2. Login
3. Logout
4. Reset forgotten password
5. Search users
6. Posting thread
7. Commenting thread
8. Posting job
9. Applying job

**Features Not to Be Tested**

1. Send messages

**Approach**

1. Unit Testing
2. Cross Browser Testing
3. UAT

**Suspension Criteria**

Component testing will be suspended under the following conditions:

1. Critical errors found preventing test completion
2. Change

Resumption Criteria

Component testing will resume when the following criteria are met:

1. All issues in suspension criteria have been resolved or mitigated
2. New software build has been redeployed
3. New build with fixed Critical

Exit Criteria (Test Completeness)

Component testing can be considered complete when the following conditions have been met:

1. All High and Medium priority requirements have been tested without Critical or Medium severity defects.

**Test Deliverables**

1. Phase Test plan
2. Test schedules
3. Test scripts
4. Test Results
5. Bugs write-up

**Phase test plan schedule**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Task | Start | End | Person Days | Resource |
| 1 | Prepare Test Plan | 29 Sep 2022 | 4 Oct 2022 | 3 | QA Manager, QA |
| 2 | Define metrics | 5 Oct 2022 | 5 Oct 2022 | 1 | QA Manager, QA |
| 3 | Review plan | 6 Oct 2022 | 6 Oct 2022 | 1 | QA Manager, QA |
| 4 | Prepare Test Scripts | 7 Oct 2022 | 11 Oct 2022 | 2 | QA Manager, QA |
| 5 | Review Test Scripts | 12 Oct 2022 | 12 Oct 2022 | 1 | QA Manager, QA |
| 6 | Set up Test Environment | 13 Oct 2022 | 13 Oct 2022 | 1 | QA Manager, QA |
| 7 | Execute Testing/Record Faults | 14 Oct 2022 | 17 Oct 2022 | 2 | QA Manager, QA |
| 8 | Re-execute Test as Needed | 18 Oct 2022 | 18 Oct 2022 | 1 | QA Manager, QA |
| 9 | Document the test results | 19 Oct 2022 | 19 Oct 2022 | 1 | QA Manager, QA |
| 10 | Review Document | 20 Oct 2022 | 20 Oct 2022 | 1 | QA Manager, QA |

1. Task 6

Task Statement:

1. Execute the tests created, take appropriate screen capture & include it as part of  
   Project Presentation.
2. Present the results of testing and include it as part of Project Presentation

Solution

Test scenario

|  |  |  |  |
| --- | --- | --- | --- |
| Requirements | Test Scenario ID | Test Scenario | Number of test cases |
| Functional Testing | TS001-Unit testing | Ensure that user enters correct data in the registration page | 1 |
| Check login functionality is run normally | 1 |
| Test the search functionality to search users | 1 |
| TS002-UAT testing | 1. Check that a navigation menu is provided on each page and is consistent. | 3 |
| Non-Functional Testing | TS003-Cross Browser testing | 1. Check that the application is run normally on multiple web browser | 2 |

**Scenario 1: Unit Testing**

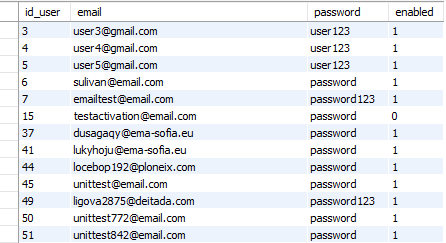
|  |  |
| --- | --- |
| Test Scenario | Ensure that user enters correct data in the registration page |
| TS001 |
| Test Cases | Unit Testing |
| TC001 | Check all the mandatory fields are entered |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Test Step | Test Data | Expected Results | Pass / Fail |
| TC001 | 1. Write the test code 2. Enter all the fields needed 3. Run junit4 | Email = “[unittest<random number>@email.com](mailto:unittest01@email.com)”  Password= “password”  First name = Test  Last name = Test  Country = Test  City = Test  Enabled = true | After successfully registering, the user data will be saved to database | Pass |

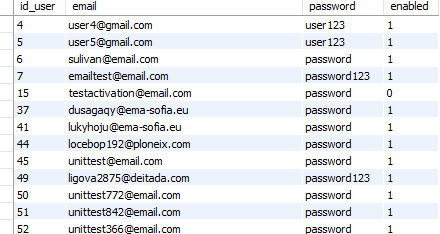
Test script



Database before:



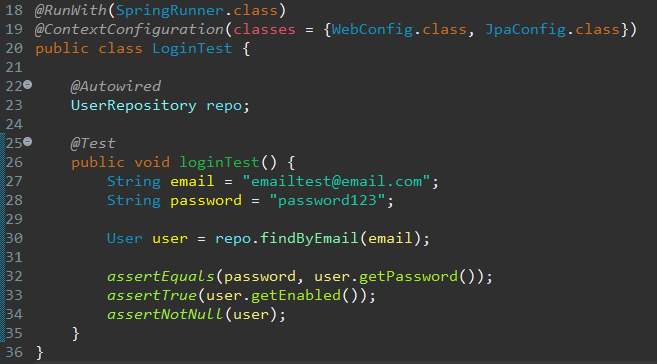
Database after:

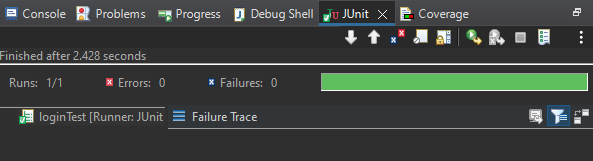


|  |  |
| --- | --- |
| Test Scenario | Check login functionality is run normally |
| TS001 |
| Test Cases | Unit Testing |
| TC001 | Check user after login is not null |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Test Step | Test Data | Expected Results | Pass / Fail |
| TC001 | 1. Write the test code 2. Enter all the fields needed 3. Run junit4 | Email = “[emailtest@email.com](mailto:unittest01@email.com)”  Password= “password123” | Login successfully, user enabled is true for login, user is not null, and the password is equal to the database | Pass |

Test script

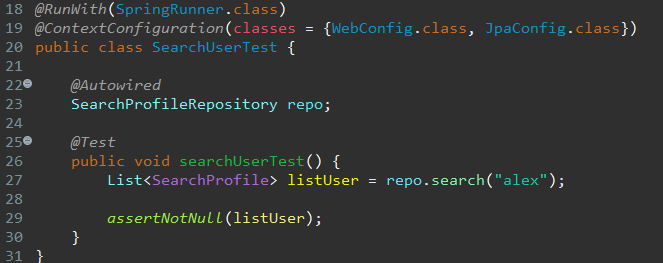


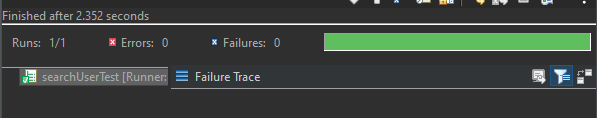


|  |  |
| --- | --- |
| Test Scenario | Test the search functionality to search users |
| TS001 |
| Test Cases | Unit Testing |
| TC001 | Check search users run normally and is not null result |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Test Step | Test Data | Expected Results | Pass / Fail |
| TC001 | 1. Write the test code 2. Enter all the fields needed 3. Run junit4 | Keyword = “alex” | Search is successfully and the result is not null | Pass |

Test script





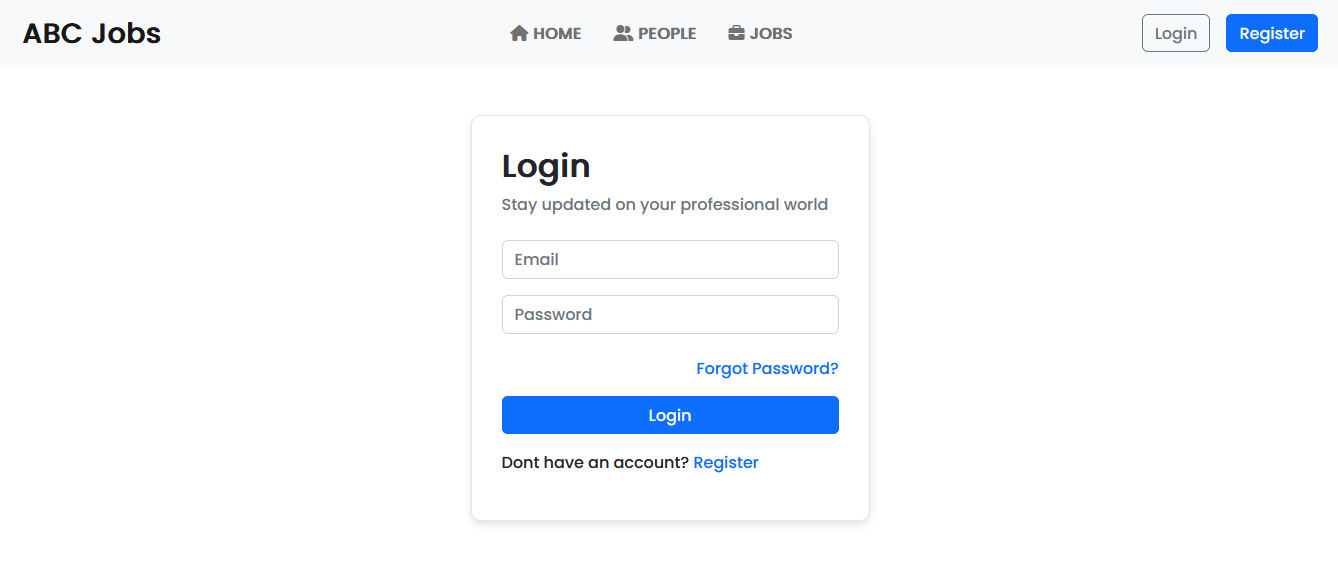
**Scenario 2: User Acceptance (UAT) Testing**

|  |  |
| --- | --- |
| Test Scenario | Check that a navigation menu is provided on each page and is consistent.  Check that user can login  Check that user can use the forgot password functionality |
| TS002 |
| Test Cases | UAT Testing |
| UAT01 | Check each hyperlink menu is loading correct page |
| UAT02 | Verify that user with valid email and password can login successfully |
| UAT03 | User can reset their forgotten password |

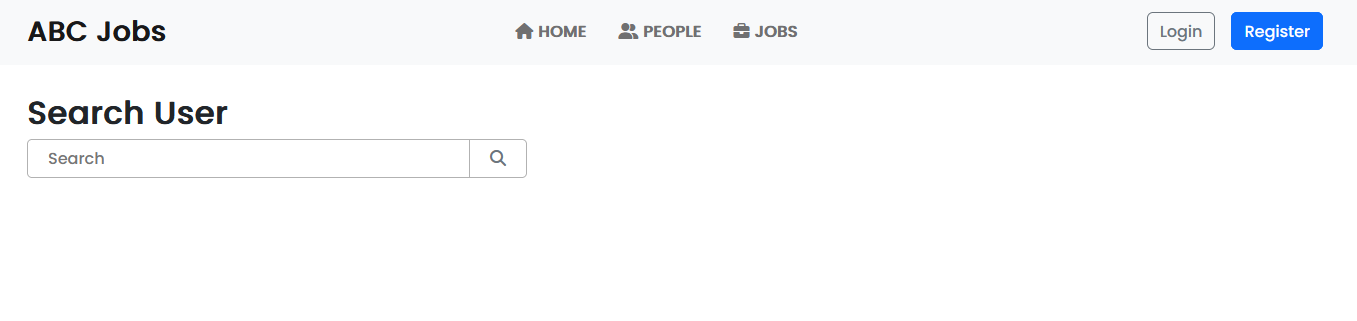
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Test Step | Test Data | Expected Results | Pass / Fail |
| UAT01 | 1. Go to Google Chrome 2. Type www.abcjobs.com and enter 3. Click on all the links provided for test | Click on Login link  Click on People  Click on register | Loaded login page  Loaded search user page  Loaded register page | Pass |
| UAT02 | 1. Go to Google Chrome 2. Type www.abcjobs.com and enter 3. Click login link 4. Enter fields and login | Email = “sulivan@email.com”  Password = “password” | Login successfully and redirected to user profile after login | Pass |
| UAT03 | 1. Go to Google Chrome 2. Type www.abcjobs.com and enter 3. Click login link 4. Click forgot password link 5. Enter email of forgotten password | Email = “lukyhoju@ema-sofia.eu” | Receive temporary password sent to email address | Pass |

UAT01

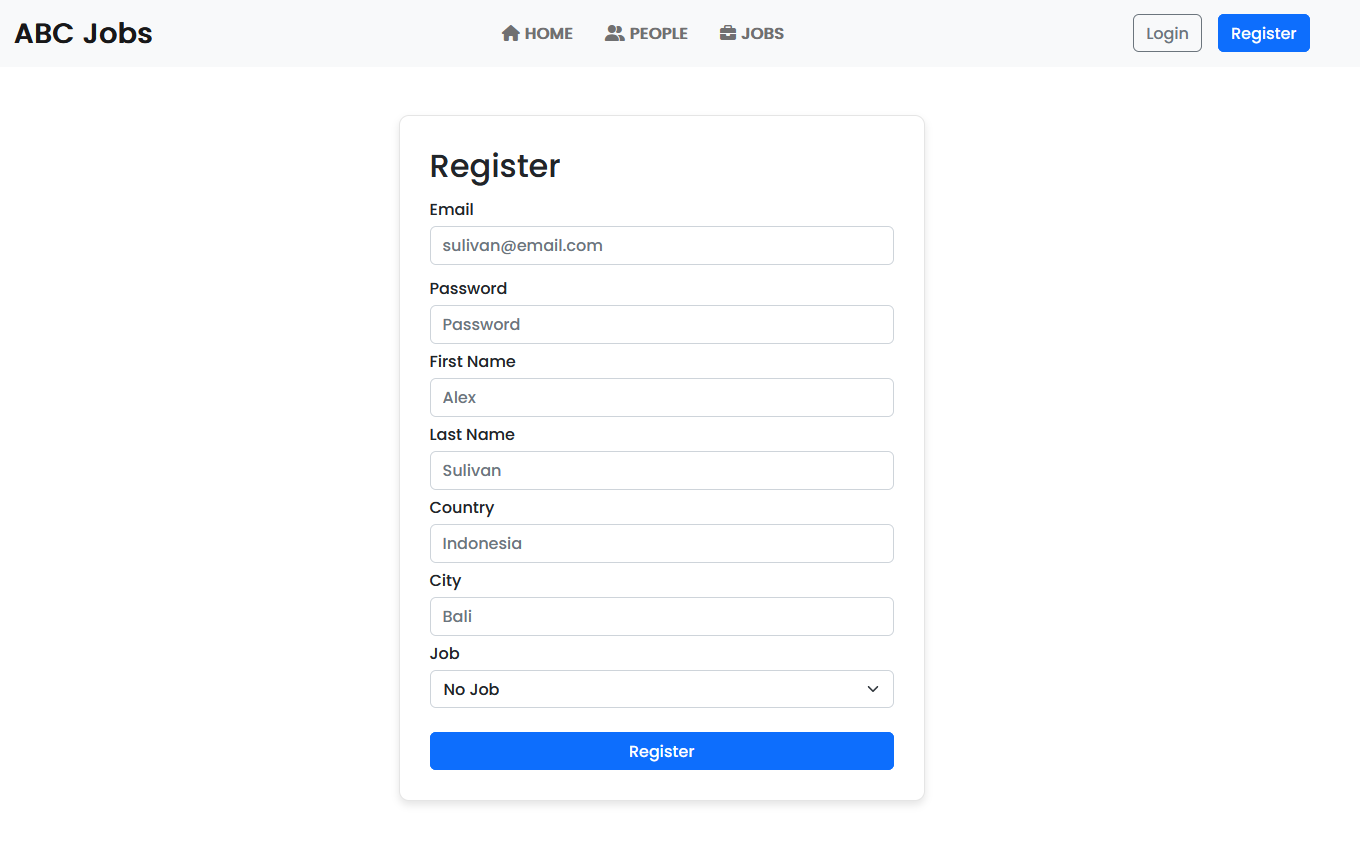




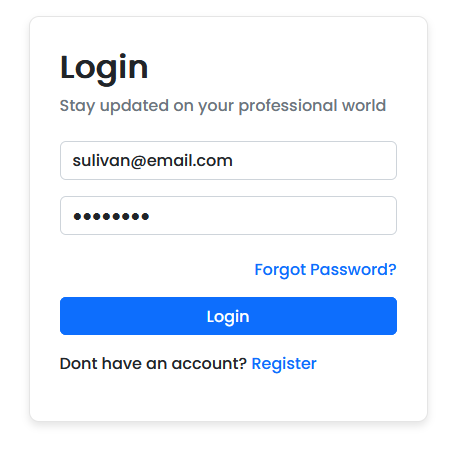


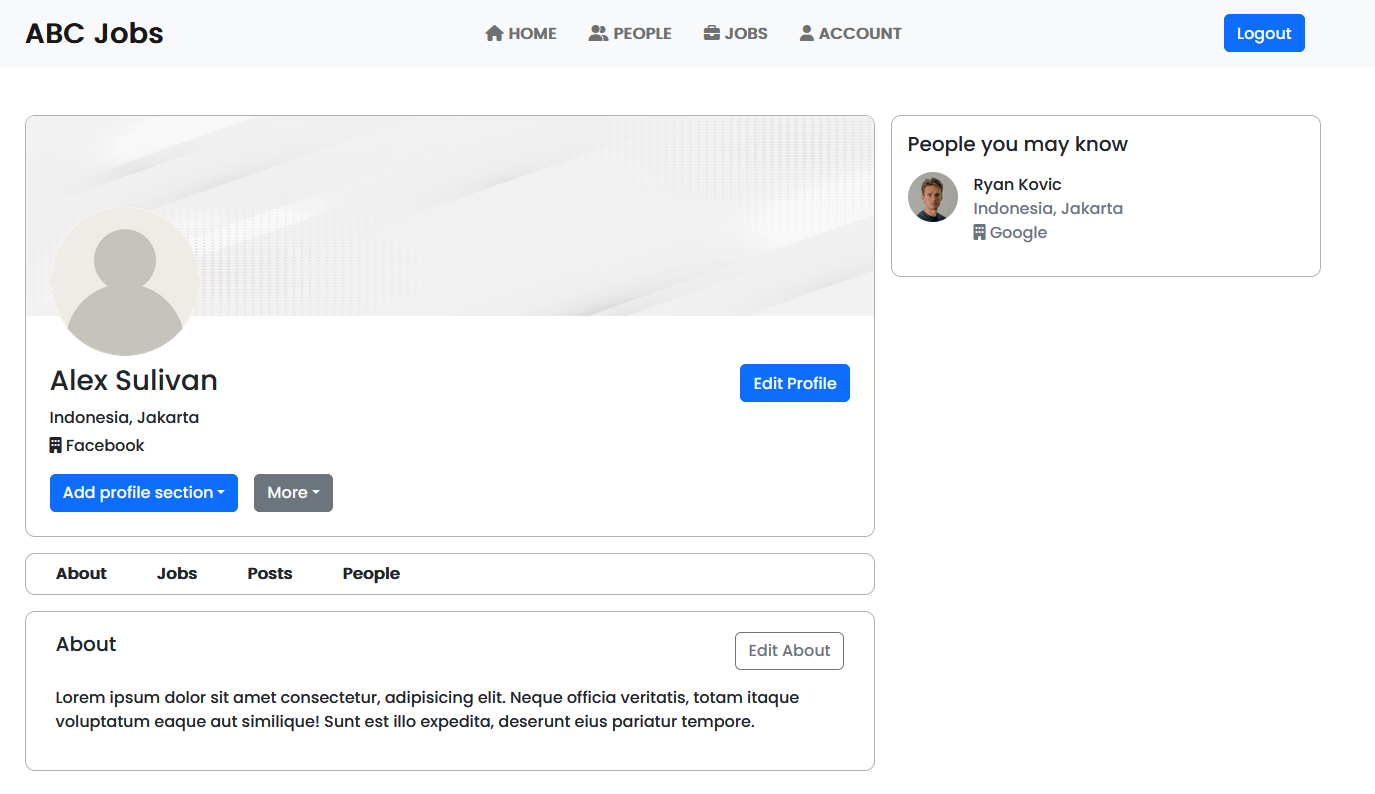




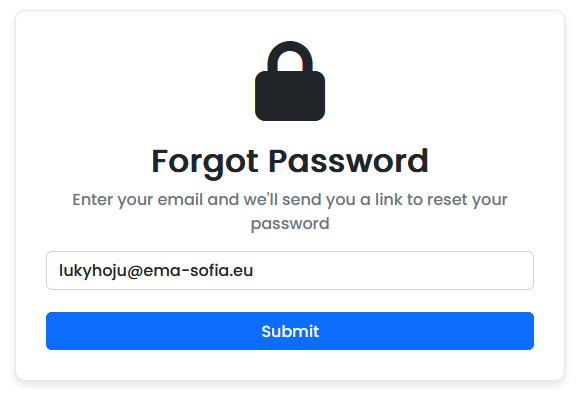


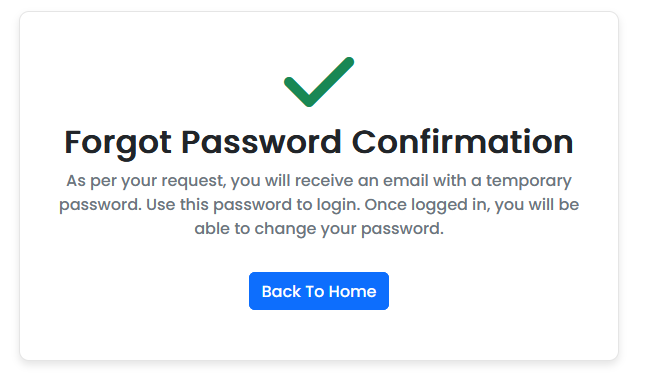
UAT02

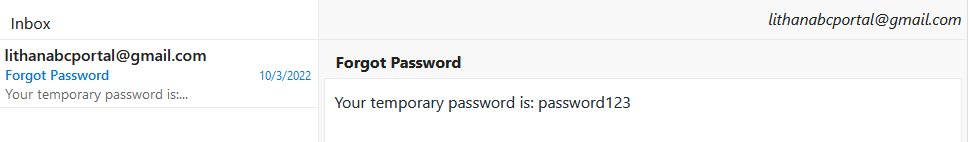




UAT03







**Before:**

****

**After:**

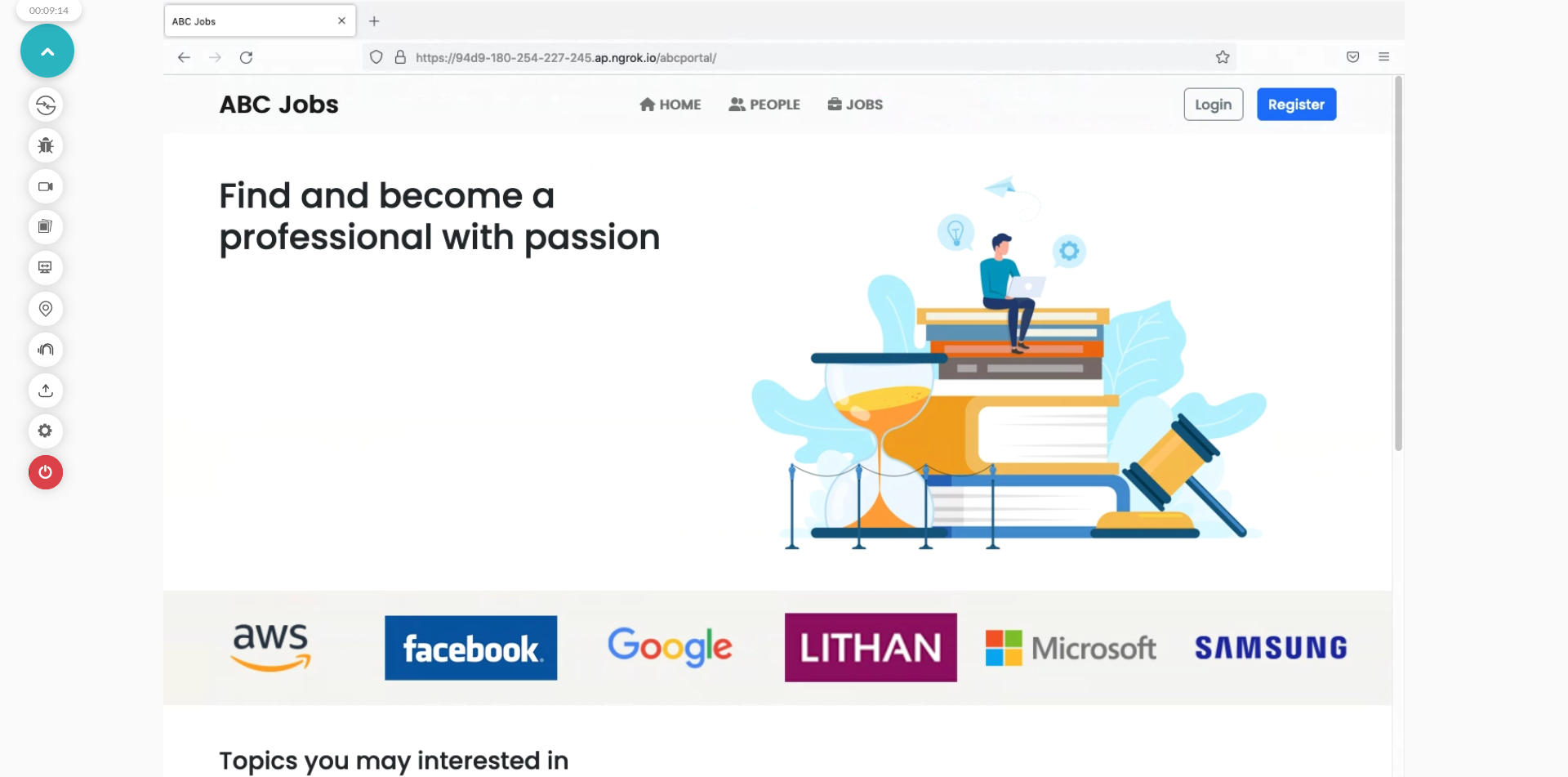
****

**Scenario 3: Cross Browser Testing**

|  |  |
| --- | --- |
| Test Scenario | Check that the application is run normally on multiple web browser |
| TS003 |
| Test Cases | UAT Testing |
| CBT01 | Check browser can run on Mozilla Firefox web browser using lamdatest |
| CBT02 | Check browser can run on Google Chrome web browser using lamdatest |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Test Case | Test Data | Expected Results | Pass / Fail |
| CBT01 | Check browser can run on Mozilla Firefox web browser using lamdatest | ABC Jobs Portal website hosted in ngrok software | Run normally as it should | Pass |
| CBT02 | Check browser can run on Google Chrome web browser using lamdatest | ABC Jobs Portal website hosted in ngrok software | Run normally as it should | Pass |

CBT01



CBT02

