User Authentication System

Project: CSE427

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Table of Contents

1. TEST PLAN IDENTIFIER

User Authentication System – V 1.0

2. INTRODUCTION

The main purpose of the test plan for the User Authentication System is to discuss the testing details of the use cases of the User Authentication System. The software project test plan also describes the objective, scope and approach of the software testing effort for the User Authentication System project. The test plan for the User Authentication System also indicates the personnel responsible for each task and also specifies the risks associated with the test plan.

2.1 OBJECTTIVES

The main objectives of the test plan for the User Authentication System are as follows:

- To identify the features of the system that will be tested
- To identify and define all the activities necessary to prepare for and conduct the testing process on the User Authentication System
- To define the pass/fail criteria for each item that will be tested
- To identify the deliverables of the testing phase
- To define any suspension criteria and resumption techniques
- To discuss the testing techniques being used to test the User Authentication System

2.2 REFERENCES

The following references have been used in the preparation of the Test Plan document for the User Authentication System:

- IEEE Standard for Software Test Documentation Std 829-1998

- Deliverables of the Phase I for the User Authentication System

- Lectures online

- Wikipedia

2.3 DEFINITIONS

The following are some of the terms and definitions that are related to the test plan of the User Authentication System:

- Pass/Fail criteria: Decision rules that are used to determine whether a software item passes or fails a test

- Test: A collection of one or more test cases

- Test Item: A software item that is an objective of testing

- Test Plan: A document describing the scope, approach, resources and schedule of the intended testing activities

- Test Summary Report: A document summarizing the testing activities and results

- Testing: The process of analyzing a software item to detect the differences between the existing and required conditions

3. TEST ITEMS

This section of the test plan lists all the items of the User Authentication System project that will be tested:

- Username Field

- Email Field

- Password Field

- Submit Button

4. APPROACH

This section of the test plan describes the overall approach for testing the User Authentication System project. The approach followed for testing the User Authentication System ensures that the major features of the project are adequately tested. All the testing will be done with the help of JUnit using Selenium web driver. The testing would be carried out on the User Authentication System while logging into the system as a customer or a normal user of the system.

4.1 Unit Testing

The Unit Testing is a test that tests each single module of the software to check for errors. This is mainly done to discover errors in the code of the User Authentication System. The main goal of the unit testing would be isolate each part of the program and to check the correctness of the code. In the case of the User Authentication System, all the web forms and the java classes will be tested. There are many benefits for this unit testing:

- The unit testing facilitates change in the code
- It allows testing to be done in a bottom up fashion

At the same time, unit testing has some disadvantages such as; it might not identify each and every error in the system.

4.2 INTEGRATION TESTING

In Integration Testing, the individual software modules are combined and tested as a whole unit. The integration testing generally follows unit testing where each module is tested as a separate unit. The main purpose of the integration testing is to test the functional and performance requirements on the major items of the project. All the modules of the project developed individually would be combined together and tested as a whole system in the integration testing.

4.3 REGRESSION TESTING

The Regression Testing is generally done whenever modifications are made to the source code of a project. The Regression Testing can also be defined as the process of testing changes made to the computer program and also makes sure that the older programming still works with the new changes. So, before any new version of a software product is released, the old test cases for the project will be run against the software with the changes made, to make sure that the old functionalities of the project still work.

4.4 ACCEPTANCE TESTING

This testing is generally performed when the project is nearing its end. This test mainly qualifies the project and decides if it will be accepted by the users of the system. The users or the customers of the project are responsible for the test.

4.5 SYSTEM TESTING

The system testing is mainly done on the whole integrated system to make sure that the project that has been developed meets all the requirements. The test cases for the system testing will be the combination of unit and integration tests.

5. TESTING ENVIRONMENT & TOOLS

For testing the user authentication system, we are using unit software tools and server tools. For unit testing, JUnit are combatively used. For server testing, selenium web drivers as well as Maven have been used for fulfilling the requirement.

5.1 JUnit

JUnit is an open-source unit testing tool that helps to test units of code. It is mainly used for unit testing Java projects; however, it can be used with Selenium

Webdriver to automate the testing of web applications. So, you can even perform automation testing of a web application with JUnit.

5.2 Selenium

Selenium is a portable framework for testing web applications. Selenium provides a playback (formerly also recording) tool for authoring functional tests without the need to learn a test scripting language (Selenium IDE). It also provides a test domain-specific language (Selenese) to write tests in a number of popular programming languages. The tests can then run against most modern web browsers.

5.3 Maven

Apache Maven is a software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information.

6. TEST CASES – LOGIN PAGE

Following is the possible list of functional and non-functional test cases for a login page:

6.1 VALID USERNAME AND PASSWORD
Verify if a user will be able to login with a valid username and valid password and the pass criteria is positive

6.2 VALID USERNAME AND AN INVALID PASSWORD
Verify if a user cannot login with a valid username and an invalid password and the pass criteria is negative

6.3 FIELD IS BLANK AND SUBMIT BUTTON IS CLICKED

Verify the login page for both, when the field is blank and Submit button is clicked and the pass criteria is negative.

6.4 FORGOT PASSWORD FUNCTIONALITY

Verify the Forgot Password functionality and pass criteria is positive.

6.5 MESSAGES FOR INVALID LOGIN

Verify the messages for invalid login and the pass criteria is positive

6.6 REMEMBER ME

Verify the Remember Me functionality and the pass criteria is positive

6.7 PASSWORD FIELD

Verify if the data in password field is either visible as asterisk or bullet signs and the pass criteria is positive

6.8 CHANGED THE PASSWORD

Verify if a user is able to login with a new password only after he/she has changed the password and the pass criteria is positive

6.9 DIFFERENT BROWSER

Verify if the login page allows logging in simultaneously with different credentials in a different browser and the answer is positive

6.10 ENTER KEY

Verify if the Enter key of the keyboard is working correctly on the login page and the answer is positive.

6.11 SPECIFIED RANGE

Verify if a user cannot enter the characters more than the specified range in each field (Username and Password) and the pass criteria is negative

6.12 BACK BUTTON

Verify the login page by pressing 'Back button' of the browser. It should not allow to enter into the system once log out and the pass criteria is positive

6.13 LOGIN SESSION

Verify the timeout functionality of the login session and the pass criteria is positive

6.14 SAME BROWSER

Verify if a user should not be allowed to log in with different credentials from the same browser at the same time and the answer is negative

7. PASS OR FAIL CRITERIA

The test cases executed on the User Authentication System will pass if they meet the specific requirements mentioned in the Vision document of the project. A test case is said to fail, if the desired functionality is not satisfied by the system.

8. SUSPENSION CRITERIA AND RESUMPTION REQUIREMENTS

8.1 SUSPENSION CRITERIA

Testing for all the dependant features will be suspended if a test case fails. The failed test case will be logged onto the test log which contains the description for the error.

8.2 RESUMPTION REQUIREMENT

The test cases which are not dependant on the case where the bug is reported will be executed in parallel with the bug fixing. Once the failed test case has been taken note of and has been identified and fixed then the testing for the failed test case will resume.

9. TEST DELIVERABLES

The following documents will be produced after the testing phase for the User authentication System.

User authentication System has been completed.

- Test Plan
- Test Cases
- Test Log