Project II: Testing the Functionality of Facebook's Software

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IT-355-A: Software Testing and Quality Assurance

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April 22, 2024

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As a student working to find a career in the field of Information Technology, it is crucial to understand the significance of software testing; along with what methodologies should be used for testing in order to assure quality and reliability of software products. The purpose of the tests conducted for this project were to observe the functionality and non-functionality of Facebook applications. Functionality refers to the basic features and capabilities of the website or software. When classifying an application as functional, it is in reference to focusing on assessing the behavior of the system and its performance. Non-Functionality of an application refers to evaluating the system's attributes such as performance, usability and security. When evaluating Facebook's functional applications, I tested the login practicality, creation of a post, deletion of a post, search ability, sending and declining friend requests, and creation of an album. The purpose of these tests were to check for the potential failure of basic user features. In regards to the applications that present as non-functional, I tested password security, data encryption and the capabilities of different browsers and devices. The idea behind each of these tests was to evaluate the safety, usability and reliability of the application.

There were a total of ten test cases, eight of these tests were conducted in an environment using Google Chrome for the web browser, Windows 10 for the operating system and through a laptop. The two tests that did not use these test environments were the "capability of different browsers" tests which used Google Chrome, FireFox, and Microsoft Edge as well as Windows 10 and a laptop. For the last test case, using a different environment the "capability of different operating systems/ devices" will consist

of different operating systems such as Windows, IOS, Android and different devices such as laptops, tablets and smartphones.

The report begins with an overview of the subject being tested, the purpose of the testing taking place and what features were considered for testing. This also included the test type such as functional or non-functional. To follow is a description of the test scenario which provides the steps taken when conducting each test. Next comes the test data that was used or required for the testing. Lastly, each test case concludes with its expected results and the entry criteria that was needed for each test case.

TEST CASE #1	
Test Case Name	Login Functionality
Test Case ID	TC01
Type of Test	Functional
Test Scenario	Navigate to Facebook.com, Enter in a valid username and password credentials, Press the login button.
Test Data	Username: John@gmail.com Password: test123!

Expected Result	The expected result is that with these credentials it will login to Facebook.
Entry Criteria	Requires internet and a valid Facebook username and password.

TEST CASE #2	
Test Case Name	Creating a Post
Test Case ID	TC02
Type of Test	Functional
Test Scenario	Access Facebook home page, Click the create button, Followed by the post button, Write your desired post Click the post button.
Test Data	Message: "Hello Facebook!"
Expected Result	This post should be created and posted on the user's timeline.
Entry Criteria	Requires internet, Login in to Facebook.

TEST CASE #3

Test Case Name	Deleting Post
Test Case ID	TC03
Type of Test	Functional
Test Scenario	Navigate to the users profile page, Scroll down to the post to be deleted, Select the "..." in the right corner, Select delete post.
Test Data	Deleting "Hello Facebook" post.
Expected Result	Post should be deleted from the users page and all other users pages.
Entry Criteria	Requires internet, login to Facebook and at least on post to delete.

TEST CASE #4

Test Case Name	Search Function
Test Case ID	TC04
Type of Test	Functional

Test Scenario	Access Facebook home page, Enter in the name or related topic into the search bar, Click enter
Test Data	Search: Marymount University
Expected Result	Should display relevant search results such as profiles, posts, and groups related to the search topic.
Entry Criteria	Requires internet, login to facebook account.

TEST CASE #5	
Test Case Name	Friend Request
Test Case ID	TC05
Type of Test	Functional
Test Scenario	Go to a profile that the user is not already friends with, Click on the "Add Friend" button.
Test Data	Profile: Jane Doe

Expected Result	A friend request should be sent to the other user and a notification should appear on their profile when they are added back.
Entry Criteria	Internet and Facebook login.

TEST CASE #6	
Test Case Name	Creating a Photo Album
Test Case ID	TC06
Type of Test	Functional
Test Scenario	Login to Facebook, Navigate to the users profile page, Select photos tab,select create album button and enter information such as Title, additional information, location and audience(Private, Public, Friends only), upload multiple photos to album and click create. Verify the album is created under the photos tab from the users page.
Test Data	Album name: Vacation Description: "Trip to Florida" Audience:"Only me"

	Photos: Select photos from the topic
Expected Result	The album should be created with all the provided details. This album should only be visible to the creator and should display all photos that were selected.
Entry Criteria	Requires internet connection, Facebook login and access to photos to add to the album.

TEST CASE #7	
Test Case Name	Password Security
Test Case ID	TC07
Type of Test	Non-Functional
Test Scenario	Navigate to Facebook settings, Click on password and security, Select change password, Enter a weak password.
Test Data	Password: Password123
Expected Result	Should tell the user to provide a password of at least 6 characters and include special characters such as (!$?)

Entry Criteria	Requires internet, login in to Facebook and ability to change password.

TEST CASE #8	
Test Case Name	Compatibility with Browsers
Test Case ID	TC08
Type of Test	Non-Functional
Test Scenario	Access Facebook using Google Chrome, Mozilla Firefox, and Microsoft Edge Verify the consistency of the functions, layout and overall performance
Test Data	Different web browsers installed on test device.
Expected Result	Facebook should display and run smoothly on all large web browsers and overall should all perform similarly.
Entry Criteria	Access to multiple web browsers, internet.

TEST CASE #9	

Test Case Name	Data Encryption
Test Case ID	TC09
Type of Test	Non-Functional
Test Scenario	Access Facebook login page, Inspect the network traffic to view the encryption used for data transmission.
Test Data	Network traffic tools(example: Wireshark)
Expected Result	All data transmitted should be encrypted using protocols such as HTTPS for any information shared between server and user.
Entry Criteria	Requires internet, access to network traffic tools and Facebook login

TEST CASE #10	
Test Case Name	Compatibility with Mobile Devices
Test Case ID	TC010
Type of Test	Non-Functional
Test Scenario	Access Facebook from multiple mobile devices such as smartphones and tablets

	Verify the Facebook interface and its functionality is compatible across different platforms(IOS, Android).
Test Data	Various mobile devices with different screen sizes and operating systems.
Expected Result	Facebook should be able to correctly display and function on different mobile devices and maintain a stable functionality throughout use.
Entry Criteria	Access to multiple mobile devices and tablets. Access to internet and Facebook login.

Throughout this testing process to determine the functionality and non functionality of Facebook's software applications, there were several standards of exit criteria that had to be met; these are meeting entry criteria, meeting the test environment and successful execution. By following the entry criteria such as having a Facebook account and internet connection and making sure to have the correct test environment for each test depending on if other browsers or devices are necessary. Functionality of applications such as logging in, creating a post and friend requesting were all successful. As well as non-functionality features such as data encryption and compatibility were also all successful. There were no defects in any of the testing cases.

In conclusion, Facebook was able to successfully test all functional cases without critical issues based on the users actions. The actions such as, adding a friend or creating a post were able to be completed seamlessly and have been verified to work. As for non-functional cases, Facebook was able to meet all performance, security, and compatibility standards to promote

efficiency and scalability of their site as well as protect its users. These tests such as, testing weak passwords and encryption of information, help protect the user and the web application from any possible vulnerabilities. This ensures the highest standards of security, and allows for cross platform and browser compatibility.