Project 2

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# Introduction

Student body and staff members from any public or private institution have the opportunity to embrace the school spirit at its highest capacity. Marymount University has developed an incredible web application to promote engagement within the university for both students and faculty.

MU Engage is a web application which allows students and staff members to participate, engage, and be part of multiple activities that are taking place during the academic school year. Students and staff members can track such activities which involve being part of a student club, school enrolment, guest speakers, religious activities, and much more.

# Description

For this report, I will be conducting a test environment to analyze the behavior of MU engage. It is important to understand that the web application is fully functional with zero bugs. Students and staff members from Marymount University are the only users that are allowed to use the application. Meaning, that no one outside of the institution can create an account and join the events that MU Engage displays on its portal. MU Engage carries and manipulates sensitive information from their users.

As a developer, it is compulsory that the application is running flawlessly. Moreover, the tool that will be utilized in order to conduct the test environment is “Pen-test tool”. This software helps us to understand, analyze and search for any functional and non-functional bugs that MU Engage may have. In addition, Pen-test tool provides several features which helps developers target bugs and enhance the security from the application.

# Types of software test

Software testing a product before and after production is crucial for the life spawn of such product. This often means that it is a requirement to check all aspects of the software before and after updating it with new functional and non-functional features. There are 2 major types of software testing which are Black box and White box software testing. For this report, black box testing will be used in order to conduct all the required software testing for MU Engage. The 2 main types of software testing that contain the Black box software testing methodology, are functional and non-functional requirements.

Functional requirements target the procedural aspects of the application. In other words, functional requirements are software features that allows users to accomplish their tasks within the application. For example: a proper search bar, a pop-up display with alerts, sending tokens to emails for verification, to name a few.

Non-functional requirements target the behavior of the application. In other words, non- functional requirements are the software features that control the software environment, performance, and usability for their users. For example: the waiting time for a loading screen should take no longer than 10 seconds, the maximum number of users using the application simultaneously without the server being crashed, every icon on screen is responsive, in others.

# Test Cases

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| **TEST CASE # 1** | |
| Test Case Name | Sign-in Feature Testing |
| Test Case ID | 01 |
| Type of Test | Functional testing |
| Test Scenario | 1. Launch the web application by using direct weblink <https://marymount.campuslabs.com/engage/> 2. Click the push button with the text “Sign-in” located in the upper right corner of screen. 3. Wait until everything is loaded successfully. |
| Test Data | <https://marymount.campuslabs.com/engage/> |
| Expected Result | The sign-in dashboard is successfully loaded. |
| Entry Criteria | * Web browsers have been updated with the latest software update. * Devices for testing have been connected via network connection and Wi-Fi connection. |

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| **TEST CASE # 2** | |
| Test Case Name | Testing the sign-in dashboard |
| Test Case ID | 02 |
| Type of Test | Functional testing |
| Test Scenario | 1. Wait for the sign-in dashboard to successfully load. 2. Enter the username and password to their corresponding input data textboxes. 3. Click the log-in push button. 4. Wait until the credentials are verified with the school servers. 5. After the credentials are being verified, the dashboard will disappear and redirect the user to the MU Engage portal. |
| Test Data | Username: JohnDoe123  Password: HelloWorld123 |
| Expected Result | The dashboard successfully captures the user’s credentials and logs-in to the MU Engage portal. |
| Entry Criteria | * Web browsers have been updated with the latest software update. * Devices for testing have been connected successfully via network connection and Wi-Fi connection. |

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| **TEST CASE # 3** | |
| Test Case Name | Navigation to the events webpage testing |
| Test Case ID | 03 |
| Type of Test | Functional testing |
| Test Scenario | 1. Navigate to the upper left corner to locate the drop-down menu. 2. Click the menu and locate the option “Events”, click the option. 3. Wait until the webpage loads. |
| Test Data | Drop-down menu and events push button. |
| Expected Result | The web application successfully displays the events to the user. |
| Entry Criteria | * Web browsers have been updated with the latest software update. * Devices for testing have been connected successfully via network connection and Wi-Fi connection. |

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| **TEST CASE # 4** | |
| Test Case Name | Navigation to the organizations panel testing |
| Test Case ID | 04 |
| Type of Test | Functional testing |
| Test Scenario | 1. Navigate to the upper left corner to locate the drop-down menu.  2. Click the menu and locate the option “Organizations”, click the option.  3. Wait until the webpage loads. |
| Test Data | Menu push bottom and organizations push button. |
| Expected Result | The web application successfully displays the organizations to the user. |
| Entry Criteria | * Web browsers have been updated with the latest software update. * Devices for testing have been connected successfully via network connection and Wi-Fi connection. |

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| **TEST CASE # 5** | |
| Test Case Name | Event history panel test |
| Test Case ID | 05 |
| Type of Test | Functional testing |
| Test Scenario | 1. Navigate to the upper right corner to locate the drop-down menu. 2. Click the menu and locate the option “Event History”, click the option. 3. 3. Wait until the webpage loads. |
| Test Data | * Menu push button * Event history panel |
| Expected Result | See the registration history of events from the user. |
| Entry Criteria | * Web browsers have been updated with the latest software update. * Devices for testing have been connected successfully via network connection and Wi-Fi connection. |

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| **TEST CASE # 6** | |
| Test Case Name | Searching and enrollment to events on the webpage |
| Test Case ID | 04 |
| Type of Test | Non-functional testing |
| Test Scenario | 1. After the events webpage successfully loads, navigate to the search bar located in the upper middle section of the webpage. 2. Type the keyword “Tomorrow”. 3. Wait until the webpage loads. 4. Click on any event that is interesting. 5. Wait until the selected event webpage loads. 6. Scroll down and locate the push button “RSVP”, click on it to enroll to the event. 7. An email would be sent as confirmation of enrolment. |
| Test Data | * Search bar * Keyword: Tomorrow * Push buttons * Enrolment confirmation email |
| Expected Result | The user can search and enroll in any event that matches their interest. After enrolling to an event, the user must expect a confirmation email. |
| Entry Criteria | * Web browsers have been updated with the latest software update. * Devices for testing have been connected successfully via network connection and Wi-Fi connection. |

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| **TEST CASE # 7** | |
| Test Case Name | MU Engage portal testing |
| Test Case ID | 07 |
| Type of Test | Nonfunctional testing |
| Test Scenario | * Identifying if the events and news are being displayed properly. * Analyzing if there are any non-responsive push buttons. * Resizing the webpage to make sure that all items within the portal change their size. |
| Test Data | MU Engage portal home page |
| Expected Result | * All the items within the MU Engage portal home page must change their size depending on the browser window size. * All items withing the MU Engage portal home page must be responsive. |
| Entry Criteria | * Devices must be connected to a network connection or Wi-Fi connection. * Devices must support webpage view for web applications. |

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| **TEST CASE # 8** | |
| Test Case Name | Opening multiple windows at the same time |
| Test Case ID | 08 |
| Type of Test | Nonfunctional testing |
| Test Scenario | * Identifying any anomalies while opening several windows at the same time within 1 session. * Calculating the loading time for each window to load within 1 session. |
| Test Data | MU Engage portal home page |
| Expected Result | * The web application would allow the user to open multiple windows within 1 session. * The web application would not exit the session while multiple windows are being use simultaneously within 1 session. |
| Entry Criteria | * Devices must be connected to a network connection or Wi-Fi connection. * Devices must use 1 browser vendor in order to open the web application. |

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| **TEST CASE # 9** | |
| Test Case Name | Sign-in into the account while using different web browsers |
| Test Case ID | 09 |
| Type of Test | Nonfunctional testing |
| Test Scenario | * Analyzing if the web application would allow users sign in while using multiple web browsers from different vendors. * Identifying if there are any security issues that would lead to a problem. |
| Test Data | Username: JohnDoe123  Password: HelloWorld123 |
| Expected Result | * The web application would not let the user sign in from multiple web browsers. * The web application only accepts the first sign in from the first web browser in used. |
| Entry Criteria | * Devices must be connected to a network connection or Wi-Fi connection. * Devices must use 1 browser vendor in order to open the web application. |

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| **TEST CASE # 10** | |
| Test Case Name | Exit time from the session testing |
| Test Case ID | 10 |
| Type of Test | Nonfunctional testing |
| Test Scenario | * Sign-in into the web application with user credentials * Leave the session running in the background without any activity. * Calculating the time that the application will close the session while web application is not in use. |
| Test Data | Username: JohnDoe123  Password: HelloWorld123 |
| Expected Result | The web application will close the session automatically after 15 minutes while no interaction was recorded from the server. |
| Entry Criteria | * Devices must be connected to a network connection or Wi-Fi connection. * Devices must use 1 browser vendor in order to open the web application. |

# Exit Criteria

1. All tests have been successfully executed.
2. Performance of the web application is tuned up.
3. All expected results are properly distributed under their corresponding categories.
4. No critical bugs have been encountered.
5. The web application runs properly on different devices.