**MU Engage Test Cases**

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# **Introduction**

Marymount University Engage is a social media platform which enables the university community to communicate and get involved in organization and events on the university campus. MU Engage allows the student to track involvement in any of the campus organizations that students are interested in and take participate in the activities and events with organization members and tasks or volunteer opportunities. MU Engage needs logging with Marymount ID and password so all Marymount Student have access to all the tools and features of MU Engage and it helps to keep track of campus events and announcement and help to track involvement in the campus community. Student can choose the club or organization and request to be the member of that community or club. Each club have different mission and agendas and if the mission of club suits the student interest then they can be enrolled in that club. MU Engage provides a full list of student organization and services opportunity which includes the events and meeting participation, conversation with organization member and task or volunteer that student have signed up for. Student can register their student organization through MU Engage and promote their upcoming events, news posts and shared photos and file. It also contains the data collection through assessment features, forms, membership information and event participation tracking and access to campus events. Considering these functional features of MU Engage the test case should be structure on each and every element that are present on the Website. In addition to that test case report will have the criteria to run functional features, test scenarios, and data that are used to test the specific function. In addition to that, test cases are presented to test usability, configuration and security of the Website since it is critical for the Website to be easily accessible and secure.

# **Test Environment and Test Type**

The test environment is a setup of the software for testing to execute the test cases. Test environment supports the test execution with hardware, software and network configured. Test environment is configured as per the need of the application under the test and setting a right test environment ensures testing success and any flaw in this process may lead to extra cost and time to the client. For the MU Engage website, the test environment involves some network and software configuration along with some hardware configuration. The area to set up the test environment are Browsers, Client operating systems, databases, networks, Hardware involving processor and RAM, and security involving authentication and authorization. The type of tests for the MU Engage website involves Black box testing with the test data set, white box testing with scanning through codes without executing it, usability testing, configuration testing, security testing and performance testing. Usability testing involves the User interface testing of the MU Engage website including intuitive, consistency, flexibility, comfortable, and accessibility testing. Configuration testing involves testing the MU Engage website in different OS and hardware conditions. Security testing involves revealing vulnerabilities in the security mechanism of the MU Engage website by the security assessment includes authentication, authorization, availability, and integrity. Performance testing involves how the website response to the user with certain constrains.

# **Test Cases**

The ten-test case to test some important aspect of MU Engage are:

1. A) Login test (security testing, Test-to-pass)

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| **TEST CASE # 1** | |
| **Test Case Name** | Login into MU Engage |
| **Test Case ID** | 0001a |
| **Type of Test** | Black Box Test (security) |
| **Test Scenario** | 1. Launch the browser from the test device 2. Type the URL for MU portal in the browser address bar 3. Login into MU portal using **valid credentials** 4. Click MU Engage link from the left side bar |
| **Test Data** | Url: my.marymount.edu  Username (valid): a0z12045  Password (valid): password123 |
| **Expected Result** | The landing page of MU engage Website |
| **Entry Criteria** | 1. Latest web Browser 2. Test automation scripts are ready 3. Device is connected to the internet access and network credentials are provided |

B) Login test (security testing, Test-to-Fail)

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| **TEST CASE # 1b** | |
| **Test Case Name** | Login into MU Engage |
| **Test Case ID** | 0001b |
| **Type of Test** | Black Box Test |
| **Test Scenario** | 1. Launch the browser from the test device 2. Type the URL for MU portal in the browser address bar 3. Login into MU portal using **Invalid credentials** |
| **Test Data** | Url: my.marymount.edu  Alternating Username (Invalid): a0z1204500 or valid: a0z12045  Password (Invalid): Password123 or valid password123 |
| **Expected Result** | Error message |
| **Entry Criteria** | 1. Latest web Browser 2. Test automation scripts are ready 3. Device is connected to the internet access and network credentials are provided |

1. Performance load time testing

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| **TEST CASE # 2** | |
| **Test Case Name** | Time to load a website |
| **Test Case ID** | 0002 |
| **Type of Test** | Performance testing and Black Box Test |
| **Test Scenario** | 1. Launch the browser from the test device 2. Type the URL for MU portal in the browser address bar 3. Login into MU portal using **valid credentials** 4. Click MU Engage link from the left side bar 5. Check the time to load the Website |
| **Test Data** | Time between Clicking the MU Engage and home page of Engage |
| **Expected Result** | Less than 1 minute open within a second |
| **Entry Criteria** | 1. Updated browser 2. Device is connected to high speed internet 3. Login credentials are valid |

1. Scalability performance testing

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| **TEST CASE # 3** | |
| **Test Case Name** | Scalability testing |
| **Test Case ID** | 0003 |
| **Type of Test** | Performance testing and Black Box Test |
| **Test Scenario** | 1. Increase the number of users at the same time 2. All users type Login into MU portal using **valid credentials** 3. Click MU Engage link from the left side bar 4. Check the processing of the webpage |
| **Test Data** | Multiple users at the same time |
| **Expected Result** | Webpages accommodate and process the data successfully without crashing. |
| **Entry Criteria** | 1. Multiple users with updated browser 2. Device is connected to high speed internet 3. Multiple logins at a same time with valid credentials |

1. Usability testing

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| **TEST CASE # 4** | |
| **Test Case Name** | User interface organization and layout testing |
| **Test Case ID** | 0004 |
| **Type of Test** | Usability testing and Black Box Test |
| **Test Scenario** | 1. Login into MU portal using **valid credentials** 2. Click MU Engage link from the left side bar 3. Check for the layout and accommodate with screen 4. Type in the search bar in MU Engage home page 5. Check for menu, dropdowns, and buttons for consistency 6. Search and select the listed club |
| **Test Data** | 1. Shrinking the browser to smaller size 2. Clicking on menu and watch the transition from home to events 3. Search bar: “WISDOM” and Click on it to view the club 4. Click on “View Full roster” button |
| **Expected Result** | 1. Website is well layout and accommodate the screen when it was shrunk. 2. WISDOM club was shown when typed in search bar 3. Menu transition work well 4. Dropdown and buttons are functional |
| **Entry Criteria** | 1. Login from updated browser 2. Device is connected to high speed internet 3. Valid credentials to access MU Engage |

1. Configuration testing for hardware

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| **TEST CASE # 5** | |
| **Test Case Name** | Hardware require to execute Website |
| **Test Case ID** | 0005 |
| **Type of Test** | Configuration testing and Black Box Test |
| **Test Scenario** | 1. Check for network card and physical layers. 2. Check for memory and processor of system and drivers 3. Checking for input and output devices 4. Which kind of device is it? Computer, smartphone or tablets |
| **Test Data** | 1. Testing power cable and Ethernet cable if required and the network card to make sure it is connected to internet 2. Drivers of the system 3. Memory to check speed and processor. 4. input devices keyboard, mouse is required 5. configure for the type of device |
| **Expected Result** | 1. Power cable is connected, and network card works fine. 2. Drivers are installed and updated 3. Memory size is upgraded greater than 4GB processor is intel i5 4. Keyboard and mouse are functional 5. MUenage can be access from all the devices browser |
| **Entry Criteria** | 1. Must have a electrical power 2. Keyboard and mouse cables are in working condition 3. Replaceable or upgradable memory in the system. |

1. Configuration testing for software:

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| **TEST CASE # 6** | |
| **Test Case Name** | Client software platform configuration |
| **Test Case ID** | 0006 |
| **Type of Test** | Configuration testing and Black Box Test |
| **Test Scenario** | 1. Check for the operating system 2. Check for installed browser |
| **Test Data** | 1. Operating system windows, MacOS, Linux, Android 2. Type of browser used to access MU Engage chrome, safari, Firefox, internet explorer, Microsoft edge. |
| **Expected Result** | 1. Work well in Latest version of Operating systems 2. Browser are downloaded in all operating systems 3. Work will in Updated version of Operating system |
| **Entry Criteria** | 1. Power on each device 2. Installed operating system 3. Login from updated browser 4. Device is connected to high speed internet 5. Valid credentials to access MU Engage |

1. Website links and navigation

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| **TEST CASE # 7** | |
| **Test Case Name** | Website external links, email links and navigation |
| **Test Case ID** | 0007 |
| **Type of Test** | Usability and Black Box Test |
| **Test Scenario** | 1. Launch MU Engage from updated browser 2. Navigate to campus links which is external link of campus portal 3. Finding the email of club members from the organization that was searched 4. Verify if the links are working |
| **Test Data** | 1. Internal links under the heading “campus links” 2. Club members email link inside the organization |
| **Expected Result** | 1. The external links redirect the user to respective portal like canvas, handshakes, athletics. 2. Email links that are accessed from the club member are valid. |
| **Entry Criteria** | 1. Login using valid credentials in Marymount portal using test scenario as test case 1 to access MU Engage 2. Able to search for the desired organization to find the member. |

1. Code testing

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| **TEST CASE # 8** | |
| **Test Case Name** | Testing of static and dynamic codes used in MU Engage |
| **Test Case ID** | 0008 |
| **Type of Test** | White Box Testing |
| **Test Scenario** | 1. Be able to access all the code that are used to develop this Website. |
| **Test Data** | 1. Unit testing and block of codes to find a bug in the code |
| **Expected Result** | 1. All logical decision is verified on their true and false values. 2. All loop is executed at their boundaries and with in their operation bounds internal data structure are validate. |
| **Entry Criteria** | 1. System with correct IDE to run the code |

1. Backend database testing

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| **TEST CASE # 9** | |
| **Test Case Name** | Testing database and its connection |
| **Test Case ID** | 0009 |
| **Type of Test** | Black box testing and white box testing |
| **Test Scenario** | 1. Check if collected data is getting to save in the database upon successful submission of membership request and the comment post 2. Acceptable database server downtime 3. Check the database for data integrity and primary key 4. Code connecting to database is stable. |
| **Test Data** | 1. Submission of membership request to WISDOM club 2. Posting a comment “Great work” on the club page 3. Frequent checking a database server for uptime and loading it manually. 4. Accessing data using primary key and completeness of data 5. Scanning through code that manage Database management system. |
| **Expected Result** | 1. Submitted membership request is added to the database 2. Posted comment is listed in the database 3. Database uptime is maximum without crashing the DB server 4. Primary key is assigned to the unique ID in the database 5. Database server is running and managed by DBMS. |
| **Entry Criteria** | 1. MU Engage website store data in the database 2. Every activity on the Website are connected to the database server. |

1. Security testing (logging and monitoring)

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| **TEST CASE # 10** | |
| **Test Case Name** | Logging and monitoring test |
| **Test Case ID** | 0010 |
| **Type of Test** | Security testing and Black Box testing |
| **Test Scenario** | 1. Frequent monitoring of the logs and activity in the MU Engage website for threat. 2. Checking for unauthorize login 3. Verify that if the user is inactive then the session expired, and user must login again. |
| **Test Data** | 1. Trying suspicious activities like frequent login fail. 2. Try staying inactive for more than 15 minutes. 3. Sending request for more than 10 clubs in one login. 4. Trying to access more email information of club members. |
| **Expected Result** | 1. Failed login for 3 times locks the Student login ID and are not authorized until the student call at Marymount university IT department to enable the access. 2. Session end in approximately 15 to 20 minutes of inactive. 3. Logs are monitored for the suspicious activity by Marymount IT department. |
| **Entry Criteria** | 1. MU Engage website is up and running 2. High speed internet connection |

# **Exit Criteria**

Exit criteria for testing the MU Engage website involves the condition that the test case has been fulfilled before completing the testing life cycle. It involves ensuring all the test cases are passed and achieve the complete functional and nonfunctional coverage of this Website. It also helps in fixing the bugs and retesting if necessary. The exit criteria give the report on test logs, incident report log and test summary and finding reports. Exit Criteria output the perfect pages when the test is completed that match the acceptance criteria of the customer. It determines the Website is performing the task as request. The above-mentioned test cases are planned based on the assumption and when they are implemented in testing the software, the exit criteria give whether the MU Engage website works fine or failed the test cases. Based on the above-mentioned test cases, the MU Engage website gives the expected result. In term of login test, MU Engage pass the test by landing in the home page when the valid User ID and password was input. It also passes the test to fail test when we try to input the invalid credentials, it displays the error message. The Website locked the user account after three unsuccessful login attempts as expected. The load time of the Website was less than a second as well as the Website can accommodate the multiple users at a same time without crashing or slowing down therefore it passes the scalability and load time test. The functional requirement test involving buttons, dropdowns, menu and user interface layout pass the usability test. The external links and email link were working as expected and the configuration testing pass the test of hardware and software requirement to load the MU Engage website. In term of white box testing, the code does not contain any logical, runtime and syntactical error and database testing contain well formatted table with appropriate primary keys and DBMS connectivity. The important nonfunctional requirement which is security involving monitoring of unusual activity in the Website are responded as expected. Unsuccessful login attempt locks the user ID until the user call MU IT to grant access and session ends when the user is inactive for more than 15 to 20 minutes. In terms of given test cases, this Website meets all the exit criteria and acceptance criteria.