Internet Music Database (IMuDb) - System Test Plan  
  
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# I. Introduction

## I.I Purpose

This document is intended to provide a plan for testing the Internet Music Database (IMuDb) to ensure that it meets the requirements defined in the requirements specification (SRS) and the goals defined in the Development Strategy.

## I.II Scope

This document covers the goals of the testing effort, the types of testing that will be used to achieve those goals, the plan for applying the various types of testing, and the actual test scripts that will be used to perform the testing.

# II. Goals of Testing

This section details the goals of testing the IMuDb application. These goals are:

1. To ensure that IMuDb satisfies all of the functional requirements specified in SRS Section III.I
2. To ensure that IMuDb satisfies all of the non-functional requirements specified in SRS Sections IV, V, and VI
3. To ensure that IMuDb satisfies the maintainability goals set forth in the Development Strategy Section I.C
4. To ensure that the separately-developed components of IMuDb function together

# III. Testing Types

This section of the document describes that types of testing that will be used to achieve the goals set forth in the previous section.

## III.I Functional Testing

Functional Testing involves testing the actual functions of the application. This type of testing is black-box testing and will be used to achieve Goal 1 in the previous section. The functional test scripts defined in Section V of this document provide coverage of the functional requirements in Section III.I of the SRS.

## III.II Integration Testing

Integration testing will be used to verify that separately developed components of the system function as expected when combined. This will partially be covered by the Functional Testing performed. In addition there may be some ad-hoc testing during the integration phase of the development cycle. Successful integration testing will be required to meet Goals 1, 2, and 4 from the previous section.

## III.III Usability Testing

Usability tests will be performed with users that are not a part of the development team. Usability tests will help to measure aspects of the application such as effectiveness, efficiency, learnability, and memorability. This type of testing will help satisfy Goal 2 from the previous section.

## III.IV Security Testing

Security tests will be applied to ensure that the security standards defined in Section VI of the SRS are satisfied. These tests will help to satisfy Goal 2 from above.

## III.V Regression Testing

The regression testing suite does not exist for Cycle 1. After the completion of Cycle 1, those scripts with the highest rate of finding defects will be used as part of a regression suite for later cycles.

## III.VI Installation Testing

Installation testing will involve testing the packaging of the application and installation in a new environment. This may involve a 3rd party that is not part of the project to assist with installing the application in a novel environment.

## III.VII Maintainability Testing

The maintainability of the code will be evaluated by checking the percentage of javadocs and unit tests available for the code. This testing will not be script driven but rather will be integrated into the build process.

## III.VIII Unit Testing

Unit tests will be written for every java function that is included in the application. These tests will attempt to provide at lest 80% coverage of the total unit-testable LOC delivered with the application. This testing will help to achieve all Goals mentioned in the previous section.

# IV. Test Plan

The types of testing described in this document will be applied at various times through the development cycle, but completely in weeks 5 & 6. The following time line provides a guide of when testing will be performed in the 7 week cycle:

* Week 1
* Week 2
* Week 3
* Week 4
* Week 5
  + Maintainability Testing will be integrated into the build process
  + Unit Testing will be performed during development and builds
* Week 6
  + Integration Testing will be performed first
  + Functional Testing will be performed after the system is up and running
  + Usability, Security, and other non-functional testing will occur
  + Installation Testing will occur last
* Week 7

# V. Test Cases

This section of the document provides the test cases that will satisfy the functional requirements

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| **Test Name** | TC1 – Display Musician/Band Information for Available Band |
| **Description** | Test displaying the information for a musician/band that exists in IMuDb |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system |
| **Expected Results** | The following information is displayed:  ·      Musician/band name  ·      Discography  ·      Place of birth/formation  ·      Year of birth/formation  ·      Years of existence  ·      Genre classification(s)  ·      Musical interests  ·      Links to musician’s/band’s website  ·      Notable influences  ·      Top songs for musician/band  ·      Top appearances for musician/band  ·      Musical preferences and abilities by person |
| **Actual Results** |  |

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| **Test Name** | TC2 – Display Musician/Band Information for Unavailable Band |
| **Description** | Test displaying the information for a musician/band that does not exist in IMuDb |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is not saved in the system |
| **Expected Results** | IMuDb presents a notification that says the musician or band does not exist in the system. |
| **Actual Results** |  |

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| **Test Name** | TC3 – Display Album Information for Available Album |
| **Description** | Test displaying the information for an album that does exist in IMuDb |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select an album from the discography |
| **Expected Results** | IMuDb presents the information about the album:  ·      Title  ·      Track Listing  ·      Track Times  ·      Producer(s)  ·      Collaborator(s)  ·      Links to 30 second clips of Tracks  ·      Option to Purchase Songs  ·      Album Sales  ·      Popularity (Chart-based) |
| **Actual Results** |  |

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| **Test Name** | TC4 – Display Album Information for Unavailable Album |
| **Description** | Test displaying the information for an album that does not have information in IMuDb |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select an album from the discography that does not have information in the system |
| **Expected Results** | IMuDb presents a notification that says the album does not have information in the system. |
| **Actual Results** |  |

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| **Test Name** | TC5 – Play Song Preview for Song with Preview |
| **Description** | Test playing the song preview for a song that has a preview clip |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select an album from the discography  4.     From the track listing, attempt to click the preview button for a specific song that has a clip |
| **Expected Results** | IMuDb provides a 30 second audio clip of the song that was selected. |
| **Actual Results** |  |

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| **Test Name** | TC6 – Play Song Preview for Song without Preview |
| **Description** | Test playing the song preview for a song that has no preview clip |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select an album from the discography  4.     From the track listing, attempt to click the preview button for a specific song that does not have a clip |
| **Expected Results** | IMuDb does not allow for the preview button to be clicked; the button should also be somehow represented as disabled or unavailable |
| **Actual Results** |  |

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| **Test Name** | TC7 – Purchase a Song |
| **Description** | Test purchasing a song that is discovered in IMuDb |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select an album from the discography  4.     From the track listing, attempt to click one of the third party site icons next to a track |
| **Expected Results** | IMuDb directs the user to a third party site where the song that was selected can be purchased; further, the user should immediately be presented with the option to purchase the song rather than being directed to a generic page |
| **Actual Results** |  |

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| **Test Name** | TC8 – View Band/Musician Chronology |
| **Description** | Test viewing the time line of a particular band or musician |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select the option to view a chronology |
| **Expected Results** | IMuDb presents the user with the chronology of the band that was selected |
| **Actual Results** |  |

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| **Test Name** | TC9 – Perform Basic Search with Results |
| **Description** | Test performing a basic search with data that should return results and not an error |
| **Steps** | 1.     Arrive at site home page  2.     Select the option to search  3.     Enter the search keyword “Pearl Jam”  4.     Select the option to search |
| **Expected Results** | IMuDb presents the user with results related to “Pearl Jam” |
| **Actual Results** |  |

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| **Test Name** | TC10 – Perform Basic Search with No Results |
| **Description** | Test performing a basic search with data that should not return results |
| **Steps** | 1.     Arrive at site home page  2.     Select the option to search  3.     Enter the search keyword “Notaband”  4.     Select the option to search |
| **Expected Results** | IMuDb displays a message stating that no results could be found for “Notaband” and asks the user to search again |
| **Actual Results** |  |

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| **Test Name** | TC11 – Perform Advanced Search with Results |
| **Description** | Test performing an advanced search that should return results |
| **Steps** | 1.     Arrive at site home page  2.     Select the option to search  3.     Select the advanced search option  4.     Enter the search criteria (Name=”Jimmy Page”; Filter Results=”Collaborations”) |
| **Expected Results** | IMuDb displays all the collaborations for the musician Jimmy Page |
| **Actual Results** |  |

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| **Test Name** | TC12 – Perform Advanced Search with No Results |
| **Description** | Test performing an advanced search that should not return results |
| **Steps** | 1.     Arrive at site home page  2.     Select the option to search  3.     Select the advanced search option  4.     Enter the search criteria (Name=”Notaband”; Filter Results=”Collaborations”) |
| **Expected Results** | IMuDb displays a message stating that no results could be found for “Notaband” collaborations and asks the user to search again |
| **Actual Results** |  |

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| **Test Name** | TC13 – Sort Search Results |
| **Description** | Test sorting search results by each available column in the returned result set |
| **Steps** | 1.     Arrive at site home page  2.     Select the option to search  3.     Enter the search keyword “New Order”  4.     Select search  5.     For the returned result set, select the ascending and descending icon on each column |
| **Expected Results** | The results should be sorted by the selected column in ascending or descending order depending on the list icon clicked |
| **Actual Results** |  |

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| **Test Name** | TC14 – Display Band/Musician Awards for a Band/Musician with Awards |
| **Description** | Test displaying the awards for a band/musician |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Scroll to the awards section of the page |
| **Expected Results** | The awards for the specific musician/band are properly displayed. |
| **Actual Results** |  |

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| **Test Name** | TC15 – Display Band/Musician Awards for a  Band/Musician with No Awards |
| **Description** | Test displaying the awards for a band/musician with no awards |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Scroll to the awards section of the page |
| **Expected Results** | IMuDb states that the band/musician has yet to win any awards that are tracked in the system |
| **Actual Results** |  |

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| **Test Name** | TC16 – Post Comment to Page as Authenticated Site Member |
| **Description** | Test posting a comment to a page for a user that has privileges to do so. |
| **Steps** | 1.     Arrive at site home page  2.     Log in as a Site Member  3.     Navigate to the page of a band or musician that is saved in the system  4.     Select the option to add a comment to the page  5.     Enter a comment for the page  6.     Select the option to save the comment |
| **Expected Results** | IMuDb adds the comment to the page in the comments section. |
| **Actual Results** |  |

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| **Test Name** | TC17 – Post Comment to Page as Unauthenticated User |
| **Description** | Test posting a comment to a page for a user that does not have privileges to do so. |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to the page of a band or musician that is saved in the system  3.     Select the option to add a comment to the page |
| **Expected Results** | IMuDb displays an error message that says only site members can post page comments; IMuDb presents the Site Visitor with the ability to log in or create an account. |
| **Actual Results** |  |

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| **Test Name** | TC18 – View IMuDb Musical Suggestions as Authenticated User |
| **Description** | Test the suggestion engine to see if the musical suggestions make sense based upon suggestion engine configuration |
| **Steps** | 1.     Arrive at site home page  2.     Log in as a Site Member  3.     Select the Option to View Musical Suggestions |
| **Expected Results** | IMuDb displays musical suggestions that make sense based upon the Site Member’s suggestion engine configuration |
| **Actual Results** |  |

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| **Test Name** | TC19 – View IMuDb Musical Suggestions as Unauthenticated User |
| **Description** | Test displaying musical suggestions when in an unauthenticated state |
| **Steps** | 1.     Arrive at site home page  2.     Select the Option to View Musical Suggestions |
| **Expected Results** | IMuDb displays a message stating that it can only generate musical suggestions for Site Member’s; IMuDb provides the option to log in or create an account |
| **Actual Results** |  |

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| **Test Name** | TC20 – Configure Music Suggestion Engine as an Authenticated User |
| **Description** | Test saving a suggestion engine configuration as an authenticated user |
| **Steps** | 1.     Arrive at site home page  2.     Log in as Site Member  3.     Select the Option to Configure User Settings  4.     Select the Option to Configure the Suggestion Engine  5.     Fill out the options for the suggestion engine  6.     Select the option to save |
| **Expected Results** | IMuDb updates the Site Member’s suggestion engine configuration with the values selected. |
| **Actual Results** |  |

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| **Test Name** | TC21 – Configure Music Suggestion Engine as an Unauthenticated User |
| **Description** | Test saving a suggestion engine configuration as an authenticated user |
| **Steps** | 1.     Arrive at site home page  2.     Select the Option to Configure User Settings |
| **Expected Results** | IMuDb displays a message stating that you must be logged in to the site to configure your user settings. IMuDb provides the option to log in. |
| **Actual Results** |  |

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| **Test Name** | TC22 – Configure Music Suggestion Engine as an Unauthenticated User |
| **Description** | Test saving a suggestion engine configuration as an unauthenticated user |
| **Steps** | 1.     Arrive at site home page  2.     Select the Option to Configure User Settings |
| **Expected Results** | IMuDb displays a message stating that you must be logged in to the site to configure your user settings. IMuDb provides the option to log in. |
| **Actual Results** |  |

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| **Test Name** | TC23 – Add New Site Content as an Authenticated Contributor |
| **Description** | Test adding new site content as an authenticated user |
| **Steps** | 1.     Arrive at site home page  2.     Log in as Contributor  3.     Navigate to Contributions page  4.     Select the option to add new content  5.     Select the type of content as “Album”  6.     Fill out the album information and associate it with “The Clash”  7.     Select the option to save |
| **Expected Results** | IMuDb saves the data provided and the data is now available when browsing or searching for the new album or “The Clash” |
| **Actual Results** |  |

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| **Test Name** | TC24 – Add New Site Content as an Unauthenticated Contributor |
| **Description** | Test adding new site content as an unauthenticated user |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to Contributions page |
| **Expected Results** | IMuDb displays a message stating that only authenticated contributors can access the Contributions portion of the site. |
| **Actual Results** |  |

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| **Test Name** | TC25 – Update existing Site Content as an Authenticated Contributor |
| **Description** | Test updating existing site content as an authenticated user |
| **Steps** | 1.     Arrive at site home page  2.     Navigate to Contributions page  3.     Select the option to update existing content  4.     Search for the content to update as “Jimi Hendrix”  5.     Select the content to update as “Birthplace”  6.     Modify the field to read “Seattle, WA”  7.     Select the option to save |
| **Expected Results** | IMuDb stores the information and it is available to all site visitors via searching and browsing for “Jimi Hendrix” |
| **Actual Results** |  |

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| **Test Name** | TC26 - Create Contributor Account |
| **Description** | Test the user account creation procedure for Contributor Accounts |
| **Steps** | 1. Contact IMuDb administrator and request a new account to be created 2. Manually edit the MySQL database table containing the Contributor Accounts 3. Create a randomly-generated password 4. Test out the newly created account by logging into it 5. Send out an e-mail confirmation to the requesting individual/entity |
| **Expected Results** | The account should be created with no exceptions being thrown. Any unique MySQL database table keys should be taken into account. When logging into the account to test it the user should be promoted to change their password and to accept the terms-of-use policy of the IMuDb application |
| **Actual Results** |  |

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| **Test Name** | TC27 – Edit site content as an Administrative User |
| **Description** | Test the functionality of the Administrative User site editing function(s) |
| **Steps** | * 1. Login to the IMuDb website and an Administrative user   2. Edit the contents of a Band/Artist’s website   3. Save the new contents   4. Open a new Webpage Browser window and see if the new/edited content is being displayed correctly |
| **Expected Results** | Once the Administrative user starts editing the content on a Band/Artist’s website, the entire page should go into “Editing Mode” – i.e. a mode where only the Administrator is allowed to make changes to the page and any other changes will not be saved.  The Administrator should be able to edit the contents of the page, including the user comments section. |
| **Actual Results** |  |