

# Musi-Cali Business Requirements Document

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**Product Name:** Musi-Cali

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## **Product- Wide Scope:**

The Musi-Cali application will be deployed as a single web page. It will be supported by Chrome Desktop in 1920 x 1080 resolution and also the mobile version of Chrome in 720 x 1080 resolution. Initially, Musi-Cali will cover the city of Long Beach (PST Time Zone), and eventually cover the rest of Southern California in the future (PST, CST, EST).

## **Distinct User Types:**

### **Unregistered User (Prospective User):**

- An unregistered user in Musi-Cali is someone who has initiated the registration process but has not yet completed it. They may have provided some initial information but have not verified their email address or finalized the registration.
- Can start the process of creating a Musi-Cali account but cannot access features until authenticated and registered.
- Permissions:
  - Initiating the Musi-Cali account creation process.
  - Providing the required registration information (email, password, name).
  - Receiving a confirmation email for account verification.
  - Limited access to Musi-Cali until the registration is finalized.

### **Registered User (Captured User):**

- A registered user in Musi-Cali is someone who has successfully created an account and can log in using their credentials.
- Can access registered-user-specific features, customize their profile, and interact with the platform as an authenticated user.

### **Authenticated User (Active User):**

- An authenticated user in Musi-Cali is a subset of registered users who have logged into their accounts and are actively using the platform's features.
- Can fully utilize all features available to registered users after authenticating themselves by logging in.

## **Phase 1 Feature Requirements:**

### **User Management:**

UM-1 (Effort Points - 5): As an unregistered user, I want to create a Musi-Cali account to access registered-user content.

#### **Required Inputs:**

- Email
  - 3-254 Characters consisting of:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z
    - Numbers: 0-9
    - Symbols:  
"@.\_-!#\$%`\*+/?^'{}|~"
- Password
  - 8-25 characters and must include one or more of each:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z
    - Numbers: 0-9
    - Symbols:  
"@.\_-!#\$%`\*+/?^'{}|~"
- First Name
  - 2-25 Characters consisting of:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z

#### **Optional Inputs:**

- Last Name
  - Defaults to null.
  - 2-25 Characters consisting of:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z
- Artist Occupation:
  - Defaults to null.
  - The user selects one of the following options for their artist portfolio:

- Composer
- Arranger
- Producer
- Instrumentalist

### **App Permissions:**

- Unregistered users have "write-only" app permissions to insert into the user table.

### **Target Audience:**

- Any unregistered user who wants to create an account on Musi-Cali

### **Pre-Conditions:**

1. User inputs undergo web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.
2. Unregistered users are connected to, able to see, and have access to the registration page.
3. The unregistered user authenticates their email address by verifying the email we send them.

### **Success Outcomes:**

- The unregistered user successfully creates an account and becomes registered.
- The unregistered user receives a confirmation email to verify their email and register their account.
- Authenticated users are redirected to the login page after they verify their email address.

### **Failure Outcomes:**

- An unregistered user's email must be unique.
- Unregistered users encounter an error during registration, such as:
  - Duplicate email=
    - The unregistered user is presented with an error message that says:
      - "Sorry this email is already being used, please try again with a different email."
    - A duplicate email error is logged in a persistent data store.
  - Inadequate password =
    - The unregistered user is presented with an error message that says:
      - "This password is inadequate: {explains what it is missing or needs to be removed to be adequate}."
  - Email verification fails to deliver=
    - The unregistered user is presented with an error message that says:
      - "It looks like we were unable to send an email to that address! Please try again with a different email."

- Creating an account takes longer than 3 seconds to complete.

**UM-2** (Effort Points - 4): As a registered user, I want to log in to my account to access registered user-specific content.

**Required Inputs:**

- Email
  - Must be associated with a registered account.
  - 3-254 Characters consisting of:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z
    - Symbols:
 

```
"@._-!#$%`*+/?^'{}|~"
```
- Password
  - Must be associated with a registered account.
  - 8-25 characters and must include one or more of each:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z
    - Numbers: 0-9
    - Symbols:
 

```
"@._-!#$%`*+/?^'{}|~"
```

**Optional Inputs:**

- N/A

**App Permissions:**

- The registered user needs “read-only” app permissions to validate their email and password within our application’s persistent data store.

**Target Audience:**

- Registered users who wish to log in to their Musi-Cali accounts.

**Pre-Conditions:**

1. The authenticated user inputs undergo web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.
2. Registered users have already created valid email and passwords.
3. Registered users are viewing and have access to the login page.

**Success Outcomes:**

- The registered user has successfully logged in to their account.
- Authenticated users are granted access to registered-user-specific content and features.
- Authenticated users are redirected to their personalized home dashboard.

**Failure Outcomes:**

- Nonexistent email or incorrect password:
  - Regardless of which field is invalid, the user is presented with a message saying “Invalid credentials.”
- Login takes longer than 3 seconds to complete.

UM-3 (Effort Points - 6): As a registered user, I want to reset my password if I forget it.

**Required Inputs:**

- Email
  - Must be associated with a registered account.
  - The link sent to the email will read “Reset your Musi-Cali password with the link below”.
  - Once the authenticated user clicks the link, they will enter a new password
    - 8-25 characters and must include one or more of each:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Numbers: 0-9
      - Symbols:  
"@.\_-!#\$%`\*+/?^'{}|~"
    - Then the authenticated user will be asked to reenter the same password
    - That new password will then be saved.
  - The authenticated user will be asked to log in with the new password.

**Optional Inputs:**

- Cancellation of resetting password:
  - The authenticated user has the option to cancel the process of resetting their password.
  - The authenticated user can either hit “Cancel” in the body of the email or simply ignore it.

**App Permissions:**

- Registered users have "read-only" app permissions to validate registered user email.
- Registered users have "write-only" app permissions to update the user password table.

**Target Audience:**

- Registered users who need to reset their Musi-Cali account password.

**Pre-Conditions:**

1. Registered user input undergoes web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.
2. Registered users have a valid email address associated with their Musi-Cali account.
3. The registered user is viewing the login page.
4. Registered users have access to the "Forgot Password" functionality.
5. The authenticated user must use the link 30 minutes after receiving it, or it will not be valid anymore.

**Success Outcomes:**

- The registered user initiates the password reset process by providing a valid email address.
- A password reset link is sent to the provided email address.
- The authenticated user clicks the link in their email inbox and is redirected to a page to create a new password.
- After creating a new password, the registered user can now log in with their updated credentials.

**Failure Outcomes:**

- Invalid email address:
  - The registered user receives an error message indicating that the provided email address is not associated with any account.
- Email delivery failure:
  - The registered user receives an error message indicating that the password reset email couldn't be sent.
- Invalid reset link:
  - The authenticated user is informed if they click the reset link and it has expired after 30 minutes, they need to request a new one.
  - The authenticated user is not able to use the link provided by Musi-Cali in the body message of the email.
- Password reset takes longer than 3 seconds to complete.

UM-4 (Effort Points - 5): As an authenticated user, I want to delete my account and all of its associated data.

**Required Inputs:**

- Email:
  - The email associated with the authenticated user's Musi-Cali account.
- Password:



- The password associated with the authenticated user's Musi-Cali account
- Confirmation:
  - The user must click a button reading "Confirm" to delete their account.

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated users have the "read-write" permission to delete their account and its associated data.

**Target Audience:**

- Authenticated users who wish to delete their Musi-Cali accounts and all related data permanently.

**Pre-Conditions:**

1. The user must be authenticated.
2. Authenticated user input undergoes web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.
3. The authenticated user logs into their Musi-Cali account and confirms the deletion by clicking the "Confirm" button.

**Success Outcomes:**

- The authenticated user initiates the account deletion process by authenticating their account and confirming their intention to delete the account using the "Confirm button".
- All data associated with the user's Musi-Cal account is permanently deleted.
- The deleted user receives a confirmation that the account has been successfully deleted on their screen.
- Deleted users can return to the login page.

**Failure Outcomes:**

- Unauthorized access:
  - Incorrect email or password:
    - Authorized user receives an error message indicating the login credentials are incorrect.
- Cancellation of deletion:
  - Authenticated users have the option to cancel the deletion process at any time before the final confirmation step.
- The deletion process takes longer than 3 seconds to complete.

**UM-5** (Effort Points - 4): As an authenticated user, I want to reset my password.

**Required Inputs:**

- “Reset Password” option
  - The authenticated user’s email inbox will receive a message from the app with a link.
  - Above the link will read “Reset your Musi-Cali password with the link below”.
  - Once the authenticated user clicks the link, they will enter a new password
    - 8-25 characters and must include one or more of each:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Numbers: 0-9
      - Symbols:  
"@.\_-!#\$%`\*+/?^'{}|~"
    - Then the authenticated user will be asked to reenter the same password
    - That new password will then be saved.
  - The authenticated user will be asked to log in with the new password.

**Optional Inputs:**

- Cancellation of resetting password:
  - The authenticated user has the option to cancel the process of resetting their password.
  - The authenticated user can either hit “Cancel” in the body of the email or simply ignore it.

**App Permissions:**

- The authenticated user has write permissions.

**Target Audience:**

- Any authenticated user that wants to reset their password.

**Pre-Conditions:**

1. The authenticated user must have an email associated with their account.
2. The authenticated user must use the link 30 minutes after receiving it, or it will not be valid anymore.

**Success Outcomes:**

- The authenticated user receives an email from Musi-Cali.
- The authenticated user clicks the link in their email inbox and is redirected to a page to

create a new password.

- The authenticated user successfully changes their password and can log back into their account with their updated credentials.

**Failure Outcomes:**

- The authenticated user cannot log in after changing their password:
  - Musi- Cali still displays a login error.
- Email delivery failure:
  - The authenticated user receives an error message indicating that the password reset email couldn't be sent.
- Invalid reset link:
  - The authenticated user is informed if the reset link has expired after 30 minutes, and they need to request a new one.
  - The authenticated user is not able to use the link provided by Musi-Cali in the body message of the email.
- Password reset takes longer than 3 seconds to complete.

## **Collaboration Search:**

CS-1 (Effort Points - 6): As an authenticated user, I want to make myself appear in the search results or make myself not appear in the search results.

### **Required Inputs:**

- “Enable” or “Disable” option in authenticated user’s profile:
  - Enabling this setting grants authenticated users permission to search for other registered users using filters and also makes them discoverable to other registered users using the search feature.
  - Disabling this setting will make the authenticated user incapable of using the collaboration search feature and undiscoverable to other registered users using the search feature.

### **App Permissions:**

- The authenticated user must have “write-only” app permissions to update the search visibility flag setting.

### **Target Audience:**

- Any authenticated user who wants to make themselves visible or invisible to other authenticated users who use Collaboration Search.

### **Pre-Conditions:**

1. The authenticated user must have created an account with a valid email and username.
2. The authenticated user must have chosen an occupation.

### **Success Outcomes:**

- The authenticated user successfully shows up in the search results if they have this setting enabled.
- The authenticated user does not show up in the search results if they have this setting disabled.

### **Failure Outcomes:**

- The authenticated user does not show up in the search results if they have this setting enabled.
- The authenticated user shows up in the search results if they have this setting disabled.
- Updating the search visibility flag setting takes longer than 3 seconds to complete.

CS-2 (Effort Points - 6): As an authenticated user, I want to filter my search results by choosing the artist(s) I’m looking for.

### **Required Inputs:**

- Occupation of choice

- Instrumentalist
- Arranger
- Composer
- Cover artist

**App Permissions:**

- Read input from the persistent data store

**Target Audience:**

- Any authenticated user who wants to narrow down the results when they search for other users

**Pre-Conditions:**

1. The authenticated user must have an occupation listed on their portfolio when creating one

**Success Outcomes:**

- The authenticated user is able to see every authenticated user of the occupation that they included in their filter(s) when searching for artists

**Failure Outcomes:**

- The authenticated user cannot see the authenticated users that have the occupation included in their filter(s) when searching for artists

## **Ear Training:**

**ET-1** (Effort Points - 7): As an authenticated or unauthenticated user, I want to improve my relative pitch by playing an ear training game.

### **Required Inputs:**

- “Start” option
  - This lets the user enter the game
  - This option is available when the authenticated user is currently not in the Ear Training game
- Answer of Choice:
  - 4 options
    - a, b, c, and d
- “Quit” option
  - This lets the user exit the game
  - This option is available after the user chooses the “Start” option

### **Optional Inputs:**

- The “View Ear Training Score” option
  - Allows the authenticated user to view their Ear Training game score

### **App Permissions:**

- Read and write

### **Target Audience:**

- Any authenticated user that wants to improve their relative pitch

### **Pre-Conditions:**

1. The authenticated user must have created a portfolio
2. The authenticated user must be signed in

### **Success Outcomes:**

- The authenticated user is able to start the game
- The authenticated user’s answer of choice is read by the app
- The authenticated user is able to see the right and correct answer after every answer of choice
- The authenticated user is able to read the answers of choice
- The authenticated user is able to quit the game

### **Failure Outcomes:**

- The authenticated user is not able to start the game after choosing the “Start” option
- The authenticated user is not able to hear the note being played after choosing the “Start” option

- The authenticated user cannot see the answers of choice during the game when they choose the “Start” option
- The authenticated user cannot see the right answer after inputting their answer of choice
- The authenticated user is not able to exit the game after choosing the “End” option

**ET-2** (Effort Points - 4): As a registered user, I want to be able to show and hide my cumulative Ear Training score on my profile.

**Required Inputs:**

- “Public” option
  - This shows the authenticated user’s Ear Training game score if enabled
- “My Eyes Only” option
  - This hides the authenticated user’s Ear Training game score if enabled

**App Permissions:**

- Read

**Target Audience:**

- Any authenticated user that wants control over the visibility of their Ear Training game score on their public portfolio

**Pre-Conditions:**

1. The authenticated user must have answered at least one (1) question while playing the ear-training game
2. The authenticated user must have chosen the “Start” option at least one (1) time on their account

**Success Outcomes:**

- The authenticated user’s Ear Training game score is visible to other authenticated users if they have the “Public” option enabled
- The authenticated user’s Ear Training game score is not visible to other authenticated users if they have the “My Eyes Only” option enabled

**Failure Outcomes:**

- The authenticated user’s Ear Training game score is not visible to other authenticated users on their portfolio if they have the “Public” option enabled
- The authenticated user’s Ear Training game score is visible to other authenticated users on their portfolio if they have the “My Eyes Only” option enabled

## **Artist Portfolio:**

**AP - 1** (Effort Points - 7): As an authenticated user, I want to upload audio tracks, clips, or demos to my portfolio.

### **Required Inputs:**

- Audio tracks, clips, or demos in supported formats (.mp3, .wav, .mp4)

### **Optional Inputs:**

- Metadata for each uploaded item (title, description, genre)
  - Default Title: filename of uploaded file
  - Default Description: Null
    - 3-254 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
  - Default Genre: Null
    - 3-30 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"

### **App Permissions:**

- Authenticated users have “write-only” app permissions to store track data in the database

### **Target Audience:**

- Authenticated users of the Musi-Cali platform who want to showcase their work on their portfolio

### **Pre-Conditions:**

1. Registered users must log in with valid credentials.
2. Authenticated users are on their portfolio editing interface.
3. The authenticated user inputs undergo web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.

### **Success Outcomes:**

- The Authenticated user successfully uploads audio tracks, clips, or demos to their portfolio.
- Uploaded items are stored securely in the system's persistent data store in 3 seconds.
- Metadata associated with each item (optionally provided description, track name, genre) is saved and displayed correctly in the portfolio.
- The authenticated user receives a confirmation message indicating successful uploads.



**Failure Outcomes:**

- The Authenticated user encounters an error during the upload process, resulting in failed uploads, and then the system logs the error for a timestamp and details of the issue.
- The uploaded items are not stored in the system's persistent data store within 3 seconds
- If an uploaded file format is not supported (e.g., not .mp3, .wav, or .mp4), the system displays an error message, and the upload attempt fails.
- If the app experiences technical difficulties during the upload process, such as server issues or connectivity problems, the user receives an error message.
- The system logs these technical errors for further analysis and debugging by developers.

AP - 2 (Effort Points - 4): As an authenticated user, I want to change my artist occupation (composer, arranger, producer, instrumentalist, none) in my portfolio.

**Required Inputs:**

- Selection of a new artist occupation (composer, arranger, producer, or instrumentalist)
- Confirmation of changes before final submission

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated user has “read-write only” app permissions to view other occupations and store the changed occupation.

**Target Audience:**

- Authenticated users of the Musi-Cali platform who want to change their occupation

**Pre-Conditions:**

1. The authenticated user must be logged in with valid credentials.
2. Authenticated users are on their portfolio editing interface.

**Success Outcomes:**

- The authenticated user successfully selects and changes their artist occupation within the portfolio.
- The updated artist's occupation is securely stored in the system's relational database.
- The user receives a confirmation message confirming the successful change of artist occupation.

**Failure Outcomes:**

- The authenticated user encounters an error during the occupation change process, resulting in a failed update.
- If the system encounters a technical issue during the occupation change process, the user receives an error message explaining the issue.

- The system logs the error, including a timestamp and details of the issue, for analysis and resolution by developers.
- In case of upload failures or technical difficulties, the user is informed of the issue with a clear error message.

AP - 3 (Effort Points - 4): As an authenticated user, I want to set the visibility of my portfolio to public, private, or selective.

**Required Inputs:**

- User authentication credentials (username and password)
- Selection of visibility settings (public, private, or selective)

**Optional Inputs:**

- Selection of specific users (for selective visibility)

**App Permissions:**

- Authenticated user needs “read-write” app permissions

**Target Audience:**

- Authenticated users of the Musi-Cali platform

**Pre-Conditions:**

1. The authenticated user must be logged in with valid credentials.
2. The authenticated user is accessing their portfolio settings or editing interface.

**Success Outcomes:**

- The authenticated user successfully sets the visibility of their portfolio to one of the available options (public, private, or selective).
- Visibility settings are securely stored in the system's database.
- The authenticated user's portfolio is updated to reflect the new visibility setting.
- In the case of selective visibility, the authenticated user successfully selects specific users who can access their portfolio.
- The authenticated user receives a confirmation message indicating the successful change in visibility settings.

**Failure Outcomes:**

- The user encounters an error while setting the portfolio visibility.
- If the visibility setting process fails due to a technical issue or database error, the system logs the error, including a timestamp and details of the issue.
- The user is notified of the failure with a clear error message, explaining the issue.

AP - 4 (Effort Points - 5): As an authenticated user, I want to view other registered users' public portfolios.

**Required Inputs:**

- User authentication credentials (username and password)
- Selection of any public registered user whose portfolio to view

**Optional Inputs:**

- None

**App Permissions:**

- Authenticated users have “read-only” permissions

**Target Audience:**

- Authenticated users of the Musi-Cali platform

**Pre-Conditions:**

1. The authenticated user must be logged in with valid credentials.
2. The authenticated user is accessing the portfolio viewing interface.
3. The authenticated user has selected another registered user's portfolio to view.

**Success Outcomes:**

- The authenticated user can access and view the selected user's public portfolio.
- The portfolio content is displayed in a user-friendly format, showing audio tracks, clips, and demos.
- The authenticated user can browse and listen to audio tracks, clips, and demos within the selected portfolio.
- The authenticated user can navigate between different sections and content within the portfolio.
- The authenticated user can easily return to their own portfolio or other app features after viewing the selected portfolio.

**Failure Outcomes:**

- The authenticated user encounters an error while trying to access or view the selected portfolio.
- If the viewing process fails due to technical issues, an error message is displayed with a description of the problem.
- The system logs the error, including a timestamp and details of the issue, for debugging and improvement.

## **Tempo Tool (Metronome):**

**TT - 1** (Effort Points - 4): As an authenticated user, I want to use the metronome feature to keep precise time with my music.

### **Required Inputs:**

- “Enable” option:
  - Displays the metronome
- “Disable” option
  - Hides the metronome

### **Optional Inputs:**

- N/A

### **App Permissions:**

- Authenticated user app permissions are set to read-only.

### **Target Audience:**

- Any authenticated user that wants to audibly and visually keep time with music.

### **Pre-Conditions:**

1. Registered users must login with the correct credentials.

### **Success Outcomes:**

- The metronome is displayed for the authenticated user.

### **Failure Outcomes:**

- Authenticated user encounters an error while displaying the metronome:
  - The authenticated user is presented with an error message that says:
    - “Sorry, there was an error displaying the metronome.”
- Displaying the metronome takes longer than 3 seconds.

**TT - 2**(Effort Points - 4): As a user, I want to adjust the BPM (beats per minute) settings of the metronome.

### **Required Inputs:**

- Beats Per Minute
  - Value ranging from 35 - 250

### **Optional Inputs:**

- N/A

### **App Permissions:**

- Authenticated user app permissions are set to write only.

### **Target Audience:**

- Any authenticated user who is trying to change the tempo of the metronome

**Pre-Conditions:**

1. Registered users must login with the correct credentials
2. Authenticated users must have the metronome displayed

**Success Outcomes:**

- The authenticated user successfully updates the beats per minute.

**Failure Outcomes:**

- Authenticated user encounters an error while updating the beats per minute:
  - The authenticated user is presented with an error message that says:
    - “Sorry, there was an error updating the beats per minute”
- Updating the beats per minute takes longer than 3 seconds.

TT - 3 (Effort Points - 4): As a user, I want to start and stop the metronome during practice sessions.

**Required Inputs:**

- “Start” option
  - Starts the metronome audio
- “Stop” option
  - stops the metronome audio

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated user permissions are set to read and write

**Target Audience:**

- Any authenticated user that wants to play the audio for the metronome

**Pre-Conditions:**

1. Registered users must login with the correct credentials
2. Authenticated users must have the metronome displayed

**Success Outcomes:**

- The metronome audio is played for the user.

**Failure Outcomes:**

- Authenticated user encounters an error while playing the metronome audio:
  - The user is presented with an error message that says:
    - “Sorry, there was an error playing the metronome.”
- Playing the metronome audio takes longer than 3 seconds.

## **Audio Visualizer:**

**AV - 1** (Effort Points - 5): As an authenticated user, I want to view a real-time graphical representation of the audio waveform while listening to music.

### **Required Inputs:**

- User authentication credentials (username and password)
- Selection of a music track to play

### **Optional Inputs:**

- Customization of the waveform display (theme, style, etc.)

### **App Permissions:**

- Authenticated user has “read” app permission

### **Target Audience:**

- Authenticated users of the Musi-Cali platform

### **Pre-Conditions:**

1. An authenticated user must be logged in with valid credentials.
2. The authenticated user is accessing the music playback interface.
3. A music track is selected and played.

### **Success Outcomes:**

- The authenticated user successfully views a real-time graphical representation of the audio waveform while listening to music.
- Waveform customization settings, if chosen, are applied correctly.

### **Failure Outcomes:**

- The authenticated user encounters an error while trying to view the waveform during music playback, resulting in a failure.
- If the system experiences technical issues during waveform display, the user receives an error message explaining the issue.
- The system logs the error, including a timestamp and details of the issue, for further analysis and resolution by developers.
- In case of display failures or technical difficulties, the user is informed of the issue with a clear error message.

**AV - 2** (Effort Points - 4): As an authenticated user, I want to customize the appearance of the audio waveform by choosing different themes or styles.

### **Required Inputs:**

- User authentication credentials (username and password)
- Selection of a theme or style for the waveform display

**Optional Inputs:**

- None

**App Permissions:**

- Authenticated user has “read-write” app permissions

**Target Audience:**

- Authenticated users of the Musi-Cali platform

**Pre-Conditions:**

1. An authenticated user must be logged in with valid credentials.
2. The authenticated user is on the Audio Visualizer interface.

**Success Outcomes:**

- The authenticated user successfully customizes the appearance of the audio waveform by selecting different themes or styles.
- The chosen theme or style is applied to the waveform display.

**Failure Outcomes:**

- The authenticated user encounters an error during the customization process, resulting in a failure.
- If the selected theme or style is currently unavailable due to an error, the authenticated user receives an error message indicating its unavailability.
- The system logs the unavailability of themes or styles for analysis and fixing.
- In case of customization failures, the authenticated user is notified of the issue with a clear error message, explaining the problem.
- If the app experiences technical difficulties during the customization process, such as server issues or connectivity problems, the authenticated user receives an error message.
- The system logs these technical errors for further analysis and resolution by developers.

## **Basic Track Editor:**

**BTE - 1** (Effort Points - 4): As an authenticated user, I want to select and load a track for editing in the track editor.

### **Required Inputs:**

- Selects a track from the internal database. Users can only access tracks that are stored under their User ID.
  - Only one track can be selected at a time

### **Optional Inputs:**

- N/A

### **App Permissions:**

- Authenticated user has “read-only” permissions to get the track data from the database

### **Target Audience:**

- Authenticated users who want to edit tracks they have uploaded

### **Pre-Conditions:**

1. An authenticated user must be on their Artist Portfolio page to select a track
2. An authenticated user must have at least one track saved under their User ID

### **Success Outcomes:**

- Tracks are accessed from the internal database within 3 seconds
- Page changes from the authenticated user’s Artist Portfolio to the Basic Track Editor page

### **Failure Outcomes:**

- Tracks are not accessed from the internal database within 3 seconds or cannot be accessed at all
- After selecting a track, the page does not change to the Basic Track Editor page

**BTE - 2** (Effort Points - 5): As an authenticated user, I want to trim the audio track to a specific size using the trimming tool.

### **Required Inputs:**

- Users adjust the size of the track to be smaller than its original size which is saved into the internal database
  - Tracks cannot be adjusted to be larger than the original track size which was taken from the database
  - Tracks that have been trimmed multiple times will only take the most recent size of the track that was saved to the database

### **Optional Inputs:**



- N/A

**App Permissions:**

- Authenticated user has “read-only” permissions to access the track data they want to adjust

**Target Audience:**

- Authenticated users who want to edit tracks they have uploaded

**Pre-Conditions:**

1. An authenticated user must be on the Basic Track Editor page
2. An authenticated user must have already selected a track to edit

**Success Outcomes:**

- Tracks are trimmed down to what the user specifies
- Tracks can be returned to their original size after being trimmed if the user has not saved yet

**Failure Outcomes:**

- Tracks are not trimmed to the size the user specifies
- Tracks can not be edited back to their original size

BTE - 3 (Effort Points - 5): As an authenticated user, I want to apply audio effects and filters to enhance my track.

**Required Inputs:**

- Users select filters and effects that are saved in the internal database to alter audio inside a track
  - Users can select as many filters and effects as they can.

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated user has “read-only” permissions to access the different effects and filters they want to apply to their track

**Target Audience:**

- Authenticated users who want to edit tracks they have uploaded

**Pre-Conditions:**

1. An authenticated user must be on the Basic Track Editor page
2. An authenticated user must have already selected a track to edit

**Success Outcomes:**

- Effects and filters made onto a track affect the track within 3 seconds

**Failure Outcomes:**

- Effects and filters made onto a track do not affect the track within 3 seconds or at all.

**BTE - 4** (Effort Points - 6): As an authenticated user, I want to save or discard the edits made in the track editor

**Required Inputs:**

- Users choose to either save the edited track or to discard the edits made. If the user chooses to save the edits, the track is saved into the database, overwriting the previous data, with all of the changes made to the track. If the user chooses to discard the edits made then the track is not saved.

**Optional Input:**

- Metadata for each uploaded item (title, description, genre)
  - Default Title: filename of uploaded file
  - Default Description: Null
    - 3-254 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^' {}|~"
  - Default Genre: Null
    - 3-30 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Symbols: "@.\_-!#\$%`\*+/?^' {}|~"

**App Permissions:**

- Authenticated user has “write-only” permissions to overwrite previous track data with the track data they had edited

**Target Audience:**

- Authenticated users who want to edit tracks they have uploaded

**Pre-Conditions:**

1. An authenticated user must be on the Basic Track Editor page
2. An authenticated user must have already selected a track to edit
3. An authenticated user must have already made changes to the track

**Success Outcomes:**

- Tracks are saved to the internal database within 3 seconds
- If the user chooses to discard the edits, the edits made are not saved onto the database

**Failure Outcomes:**

- Tracks are not saved to the internal database within 3 seconds or cannot be saved at all
- Discarded edits are saved onto the database when they shouldn't be

## **Artist Profile Calendar:**

**APC - 1** (Effort Points - 6): As an authenticated user, I want to post upcoming gigs on my profile calendar.

### **Required Inputs:**

- “Post gig” Option:
  - Lets the user choose gigs to post to their profile calendar

### **Optional Inputs:**

- N/A

### **App Permissions:**

- Authenticated user app permissions are set to read and write.

### **Target Audience:**

- Any authenticated user that wants to post gigs to their profile calendar

### **Pre-Conditions:**

1. Registered users must log in with the correct credentials
2. Authenticated users are in their profile calendar

### **Success Outcomes:**

- The authenticated user is able to post a gig to their profile calendar.

### **Failure Outcomes:**

- Authenticated user encounters an error when trying to add a gig to the profile calendar:
  - The authenticated user is presented with an error message that says:
    - “Sorry, the gig was unable to be added to the profile calendar.”
  - Error is logged in a persistent data store
- Adding a gig to the profile calendar takes longer than 3 seconds

**APC - 2** (Effort Points - 6): As an authenticated user, I want to set the visibility of my gig listings to public, private, or selective.

### **Required Inputs:**

- “Public” Option:
  - Anybody may view the profile calendar
- “Private” Option:
  - Only the authenticated user may view the profile calendar
- “Selective” Option:

- Authenticated user selects other authenticated users to be able to view the profile calendar
- Defaults to public

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated users have "write-only" app permissions to set visibility.

**Target Audience:**

- Any authenticated user who wants to change the visibility of their profile calendar

**Pre-Conditions:**

1. Registered users must log in with the correct credentials.

**Success Outcomes:**

- The authenticated user is able to change the visibility of their profile calendar.

**Failure Outcomes:**

- Authenticated user encounters an error when trying to change profile calendar visibility:
  - The authenticated user is presented with an error message that says:
    - “Sorry, the profile calendar visibility was unable to be changed.”
  - Error is logged in a persistent data store.
- Changing profile calendar visibility takes longer than 3 seconds.

APC - 3 (Effort Points - 6): As an authenticated user, I want to edit and delete the gigs I have created.

**Required Inputs:**

- “Edit gig” option:
  - Allows authenticated users to edit gig data such as:
    - Name
      - 3-254 Characters consisting of:
        - Uppercase letters: A-Z
        - Lowercase letters: a-z
        - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
    - Location
      - 3-254 Characters consisting of:
        - Uppercase letters: A-Z
        - Lowercase letters: a-z
        - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"

- Time
- Who is performing
  - 3-254 Characters consisting of:
    - Uppercase letters: A-Z
    - Lowercase letters: a-z
    - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
- "Delete gig" option
  - Allows authenticated users to delete gigs.
  - Authenticated users will be asked "Are they sure that they want to delete this gig?" after choosing this option.

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated users have "write-only" app permissions

**Target Audience:**

- Any authenticated user who wants to edit or delete their gigs.

**Pre-Conditions:**

1. Registered users must log in using the correct credentials
2. Authenticated users must be viewing a gig on the profile calendar
3. The authenticated user inputs undergo web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.

**Success Outcomes:**

- The authenticated user is able to edit their gig.
- The authenticated user is able to delete their gig.

**Failure Outcomes:**

- Authenticated user encounters an error when trying to edit gig data:
  - The authenticated user is presented with an error message that says:
    - "Sorry, the changes to gig data could not be saved."
  - Error is logged in a persistent data store.
- Authenticated user encounters an error when trying to delete a gig:
  - The authenticated user is presented with an error message that says:
    - "Sorry, the gig could not be deleted."
  - Error is logged in a persistent data store.
- Editing a gig takes longer than 3 seconds.
- Deleting a gig takes longer than 3 seconds.

APC- 4 (Effort Points - 4): As an authenticated user, I want to view other registered users gig listings and details.

**Required Inputs:**

- “View Calendar” option:
  - Will display the profile calendar belonging to the profile the user is viewing.
- “Gig highlighting”
  - Will display the data of a gig the user has selected

**Optional Inputs:**

- N/A

**App Permissions:**

- The authenticated users have "read" app permissions.

**Target Audience:**

- Any user that wants to view an authenticated user’s profile calendar.

**Pre-Conditions:**

1. The authenticated user must be logged in and authenticated.

**Success Outcomes:**

- The authenticated user is able to view the profile calendar.
- The authenticated user is able to view gigs and their data.

**Failure Outcomes:**

- Authenticated user encounters an error when trying to display the profile calendar:
  - The authenticated user is presented with an error message that says:
    - “Sorry, the profile calendar could not be displayed.”
  - Error is logged in a persistent data store.
- Authenticated user encounters an error when trying to view gig data:
  - The authenticated user is presented with an error message that says:
    - “Sorry, the gig data could not be displayed.”
  - Error is logged in a persistent data store.
- Displaying the profile calendar takes longer than 3 seconds.
- Viewing gig data takes longer than 3 seconds.

## **Scale Display:**

**SD - 1** (Effort Points - 4): As an authenticated user, I want to select a scale type to view notes within that scale.

### **Required Inputs:**

- User authentication credentials (username and password)
- Selection of a specific scale type
  - Major scales
  - Pentatonic scales
  - Lydian scales
  - Dorian scales
  - Minor scales
  - Harmonic minor scales

### **Optional Inputs:**

- None

### **App Permissions:**

- An authenticated user has “read” app permission to select which scale type they want to use.

### **Target Audience:**

- Authenticated users of the Musi-Cali platform who want to see notes within a scale type as they play.

### **Pre-Conditions:**

1. The authenticated user must be logged in with a valid username and password.
2. The authenticated user is accessing the Scale Display interface.
3. Scale types are available for selection.

### **Success Outcomes:**

- The authenticated user can access and view all of the following scale types:
  - Major scales
  - Pentatonic scales
  - Lydian scales
  - Dorian scales
  - Minor scales
  - Harmonic minor scales
- The user can select a specific scale type from the available options.
- Upon selecting a scale type, the system displays the relevant notes within that scale.

- The authenticated user can easily navigate between different scale types and notes.

**Failure Outcomes:**

- The authenticated user encounters an error while trying to access or view the available scale types.
- If the viewing process fails due to technical issues, an error message is displayed with a description of the problem.
  - “Oops! We encountered a problem while loading the selected scale. Please try again later or check your internet connection.”
- The system logs the error, including a timestamp and details of the issue, for debugging and improvement.



## **Bingo Board:**

**BB - 1** (Effort points - 8): As an authenticated user, I can make a post to the bingo board.

### **Required Inputs:**

- Authenticated users input information for the gig:
  - Name of the Gig:
    - 3-50 characters:
      - Lower Case: a-z
      - Upper Case: A-Z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"

### **Optional Inputs:**

- Additional information about the gig:
  - A general description:
    - Default: Null
    - 0-1000 characters:
      - Lower Case: a-z
      - Upper Case: A-Z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
  - Gig Location:
    - Default: Null
    - 0-50 characters:
      - Lower Case: a-z
      - Upper Case: A-Z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
  - Date & Time:
    - Default: Null
    - A date formatted with MM/DD/YYYY
    - Valid time between 12:00 a.m to 11:59 p.m.
  - Paid vs. Unpaid
    - Default: Null
    - 0-10 characters:
      - Numbers: 0-9

### **App Permissions:**

- Authenticated user has “write” app permissions.

**Target Audience:**

- Authenticated users who are looking to hire artists for gigs or other work.

**Pre-Conditions:**

1. The user is authenticated.
2. The authenticated user is viewing the Bingo Board.

**Success Outcomes:**

- The post from the authenticated user is stored successfully and is displayed on the Bingo Board for other users.

**Failure Outcomes:**

- The post is not stored successfully in the data store
  - An error message will be displayed to the user.
- The post takes longer than 5 seconds to be saved to the data store.

BB - 2 (Effort points - 6): As an authenticated user, I can view my posts on the bingo board and

View a list of the registered users who indicated interest.

**Required Inputs:**

- N/A

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated user has “read-only” permission to view their posts.

**Target Audience:**

- Authenticated users who want to view replies to their postings.

**Pre-Conditions:**

1. The authenticated user is viewing either the Bingo Board or their profile
  - The authenticated user will see an option on either the board or their profile to “View my posts.”

**Success Outcomes:**

- The authenticated user is shown a list of posts they have made to the Bingo Board.
  - If they have made no posts, will instead display a blank menu saying “No posts made.”
- Each post shown can be expanded to show the users who have responded.

**Failure Outcomes:**

- The authenticated user is shown they have made no posts when they have made any amount.

- The authenticated user is shown posts they have not made.
- The authenticated user is shown no registered users indicating interest when they should.
- The authenticated user is shown registered users indicating interest who did not.
- The app takes longer than 3 seconds to display the list of posts or users.

**BB - 3** (Effort Points - 8): As an authorized user, I can view the bingo board and see posts made by other users.

**Required Inputs:**

- N/A

**Optional Inputs:**

- Filter settings:
  - Authenticated users can adjust whether posts are displayed ordered by:
    - Name of gig
    - Date scheduled for
    - Date posted
  - Authenticated users can selectively view posts that are:
    - Local or Online
    - Paid or Unpaid
  - Users can expand their search range to show posts from nearby ZIP codes or cities.

**App Permissions:**

- Authenticated user has “read-only” permissions to load and display posts from the data store.

**Target Audience:**

- Authenticated users who want to view gigs and postings in their area or online.

**Pre-Conditions:**

1. An authenticated user navigates to the Bingo Board option from the main menu and clicks on it.

**Success Outcomes:**

- The authenticated user is taken to the Bingo Board and recent posts made by other authenticated users are loaded and displayed.

**Failure Outcomes:**

- The authenticated user is not taken to the Bingo Board
- The Bingo Board fails to load
- No posts are loaded or displayed.

**BB - 4** (Effort Points - 7): As an authenticated user, I can view a specific post on the board to see its details and can click a button indicating my interest to the user who posted it.

**Required Inputs:**

- Clicking on a specific post on the Bingo Board to bring up its details.

**Optional Inputs:**

- While viewing a post, there will be a button under the details the authenticated user can click to indicate interest.

**App Permissions:**

- Authenticated user has “read-write” permissions to:
  - Display any present additional information about the gig.
  - Store them on the post as an interested account.

**Target Audience:**

- Authenticated users viewing the Bingo Board who want to apply for gigs or respond to posts.

**Pre-Conditions:**

1. The authenticated user is viewing the Bingo Board.

**Success Outcomes:**

- When a post is clicked, the correct information is displayed to the authenticated user.
- If they click the interest button, they will be logged and displayed to the poster.

**Failure Outcomes:**

- Additional details are not loaded or displayed or are displayed incorrectly.
- When indicating interest, user information is not stored.

## **Gig Review System:**

**GRS - 1** (Effort Points - 7): As an authenticated user, I want to rate and review past gigs I have participated in.

### **Required Inputs:**

- A star rating from 1 to 5
  - Authenticated users will be presented with a graphic to choose which rating they want to give.

### **Optional Inputs:**

- A short comment:
  - Default: Null
  - 0-1000 characters:
    - Lower Case: a-z
    - Upper Case: A-Z
    - Numbers: 0-9
    - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
- Tags on my review:
  - Default: Null
  - 0-7 tags, each being 1-25 characters:
    - Lower Case: a-z
    - Upper Case: A-Z
    - Numbers: 0-9

### **App Permissions:**

- Authenticated users will need “read-write” permissions to:
  - Read the information about the gig they are reviewing.
  - Write their review, rating, and tags to the data store.

### **Target Audience:**

- Authenticated users who performed a gig or responded to a post who wanted to leave a rating of the user who made the listing.

### **Pre-Conditions:**

1. An authenticated user has indicated an interest in a gig listing.
2. The authenticated user navigates to the “Review” section of the gig post.

### **Success Outcomes:**

- The rating and review made by the authenticated user are saved to the data store and displayed on both their account and the account of the gig they reviewed in less than 3 seconds.

### **Failure Outcomes:**

- The ratings or reviews are not saved to the data store.
- The ratings or reviews are not displayed properly.

**GRS - 2** (Effort Points - 5): As an authenticated user, I want to view my own gig ratings and reviews on my profile, or view the ratings and reviews left on another registered user's profile.

**Required Inputs:**

- N/A

**Optional Inputs:**

- "Load More"
  - By default displays the first 10 results, clicking this will load an additional 10 reviews.

**App Permissions:**

- Authenticated user has "read-only" permissions to load and display reviews they have made and ones other users have made to their profile.

**Target Audience:**

- Users who want to read the reviews they have written or read the reviews left on other accounts.

**Pre-Conditions:**

1. An authenticated user is viewing their own profile or another user's profile
2. Authenticated users will see "My Reviews" as well as "Reviews" as well as "Load More" underneath both registered user portfolio contexts.

**Success Outcomes:**

- If looking at their own profile, authenticated users will see all reviews they have made under "My Reviews" and any reviews other users have left them under "Reviews"
- If looking at another registered user's profile, the authenticated user will see any reviews they have left under "My Reviews", if any, and reviews left by other users under "Review".

**Failure Outcomes:**

- Reviews fail to load or display for authenticated users.
- Incorrect reviews are loaded or displayed to the authenticated user.

## **Collab Feature:**

CF-1 (Effort Points - 10): As an authenticated user, I want to send collaboration requests to other users.

### **Required Inputs:**

- Authenticated users sending a collaboration request need to send a description of their project and what the user wants the talent of interest to do.
  - The description and what the user wants will consist of:
    - 3-300 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"

### **Optional Inputs:**

- N/A

### **App Permissions:**

- Authenticated user has “write-only” permissions to save their collaboration requests to the internal database.

### **Target Audience:**

- Authenticated users that want to communicate with other authenticated users.

### **Pre-Conditions:**

1. User inputs undergo web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.
2. An authenticated user must be on the collaboration request page.

### **Success Outcomes:**

- The authenticated user’s request is sent to the talent of interest within 3 seconds.
- The authenticated user’s request is saved to the internal database under that user’s UserID.

### **Failure Outcomes:**

- The authenticated user’s request is not sent.
- The description is under 3 characters long.
- The description is over 300 characters long.

- The description contains characters that are not specified to be accepted.
- The authenticated user's request is not saved to the internal database.

CF-2 (Effort Points - 3): As an authenticated user, I want to view incoming collaboration requests and decide whether to accept or decline them.

**Required Inputs:**

- Authenticated users can view collaboration requests from other authenticated users.
- Authenticated users can either accept or decline collaboration requests from other authenticated users.

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated user has "read-only" permissions to view the collaboration requests that were sent by other authenticated users.

**Target Audience:**

- Authenticated users that want to accept or decline collaboration requests sent by other authenticated users.

**Pre-Conditions:**

1. User inputs undergo web server-to-database processing with parameterized queries and input validation to prevent SQL injection attacks.
2. The authenticated user is on the collaboration request page.
3. The authenticated user must have received collaboration requests from other authenticated users.

**Success Outcomes:**

- The authenticated user is able to access the collaboration request within 3 seconds.
- The authenticated user is able to accept or decline collaboration requests.
  - If the collaboration request is declined, the authenticated user who sent the request is notified within 3 seconds.
    - The collaboration request data is deleted from the database within 3 seconds.



- If the collaboration request is accepted, the authenticated user that sent the request is notified within 3 seconds.

**Failure Outcomes:**

- The authenticated user is unable to access the collaboration request within 3 seconds.
- The authenticated user is unable to accept or decline collaboration requests.
  - If the collaboration request is declined, the authenticated user that sent the request is not notified within 3 seconds.
    - The collaboration request data is not deleted from the database within 3 seconds.
  - If the collaboration request is accepted, the authenticated user that sent the request is not notified within 3 seconds.

CF-3 (Effort Points - 3): As an authenticated user, I want to cancel my collaboration request.

**Required Inputs:**

- Authenticated users select to cancel their collaboration request.

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated user has “write-only” permissions to remove collaboration requests from the database.

**Target Audience:**

- Authenticated users that want to cancel their collaboration request they sent to the other authenticated users.

**Pre-Conditions:**

1. The authenticated user must be on the collaboration request page.
2. Authenticated users had already sent a collaboration request to another authenticated user.
3. The collaboration request had not been accepted or declined.

**Success Outcomes:**

- The collaboration request data is deleted from the internal database within 3 seconds.

- The authenticated user who received the collaboration request can no longer see the request after the data has been deleted.

**Failure Outcomes:**

- The collaboration request data is not deleted from the internal database within 3 seconds.
- The authenticated user who received the collaboration request can still see the request after the data has been deleted.

## **Phase 2 Feature Requirements:**

### **Music-Lesson Hub:**

MLH-1 (Effort points - 8): As an authenticated user, I want to access a library of video music lessons and tutorials that are in .mp4 format.

#### **Required Inputs:**

- "View Lesson" Option:
  - Authenticated users can click the "View Lesson" option to access lessons posted by other authenticated users.
- "Play Video" Option:
  - Authenticated users can click the "Play Video" option to play a selected lesson.
- "Pause Video" Option:
  - Authenticated users can click the "Pause Video" option to pause a lesson in progress.

#### **Optional Inputs:**

- "Save Lesson" Option:
  - Authenticated users can click the "Save Lesson" option to save a lesson for later viewing in their portfolio.
- "Exit Video" Option:
  - Authenticated users can click the "Exit Video" option to exit a lesson that is currently playing.

#### **App Permissions:**

- Authenticated users have "read" permissions to access video lessons.

#### **Target Audience:**

- Any authenticated user who wants to gain knowledge on how to potentially hone their skills in various branches of music.

#### **Pre-Conditions:**

1. The authenticated user must be in the "Music Lesson Hub" section of the app to access lessons.

**Success Outcomes:**

- Authenticated users can successfully watch video music lessons and tutorials.
- Authenticated users can play, pause, save, and exit lessons as needed.

**Failure Outcomes:**

- The authenticated user encounters an error when opening a video lesson.
  - They will be presented with an error message and redirected to the music-lesson-hub screen.
  - The error will be logged in a persistent data store.
- Video lesson takes longer than 3 seconds to open.

MLH-2 (Effort points - 4): As an authenticated user, I want to filter music lessons by instrument, genre, and skill level.

**Required Inputs:**

- "Instrument" Option:
  - Authenticated users can select the instrument(s) they want to view in the search.
- "Genre" Option:
  - Authenticated users can select the genre(s) they want to view in the search.
- "Skill Level" Option:
  - Authenticated users can select the skill level(s) they want to view in the search.

**Optional Inputs:**

- N/A

**App Permissions:**

- Authenticated users have "read" permissions.

**Target Audience:**

- Authenticated users trying to find specific music lessons.

**Pre-Conditions:**

1. The user must be authenticated.
2. The authenticated user must be viewing and able to access the music-lesson hub.

**Success Outcomes:**

- The authenticated users have "read" app permissions.
- Authenticated users can filter music lessons by instrument, genre, and skill level.
- Filtered lessons are displayed according to the selected criteria.

**Failure Outcomes:**

- If issues occur during filtering, the system logs errors for analysis and notifies the user of any problems.
- Takes longer than 3 seconds to filter the music data from the persistent data store.

MLH-3 (Effort points - 6): As a beginner user, I want to access interactive lessons, practice exercises, quizzes, and videos.

**Required Inputs:**

- N/a

**Optional Inputs:**

- N/a

**App Permissions:**

- Authenticated users have "read" permissions.

**Target Audience:**

- Beginner users seeking access to interactive learning materials, practice exercises, quizzes, and videos.

**Pre-Conditions:**

- The user must be authenticated.
- The user must have selected the option to view the musical lesson hub.

**Success Outcomes:**

- Authenticated users can access interactive lessons, practice exercises, quizzes, and videos for learning and skill improvement.

**Failure Outcomes:**

- In case of issues, the system logs errors for analysis and notifies the user of any problems, ensuring that operation failure does not prevent the user from using the system by removing broken links.

## **Advanced Search:**

AS-1 (Effort points - 7): As an authenticated user, I want to manually input filter types when using Collaboration Search.

### **Required Inputs:**

- User authentication credentials (username and password)
- Manually inputted filter types in Collaboration Search

### **Optional Inputs:**

- None

### **App Permissions:**

- Authenticated user has 'read' app permissions
- Authenticated user has 'write' app permissions

### **Target Audience:**

- Authenticated users utilizing Collaboration Search

### **Pre-Conditions:**

1. The user is logged in with valid credentials.
2. The user is actively using the Collaboration Search feature.

### **Success Outcomes:**

- The user's manually inputted filter types are accepted and used to refine the search results within Collaboration Search.

### **Failure Outcomes:**

- If there is an issue with reading the authenticated user's inputted filter types due to technical problems, the user receives an error message.
- The system logs the error, including a timestamp and details of the issue, for further analysis and system improvement.

## **Tempo Transposition Tool:**

**TTT-1** (Effort points - 8): As an authenticated user, I want to speed up or slow down my tracks by specifying a speed factor.

### **Required Inputs:**

- The audio track to be transposed.
- Selection of a speed factor for transposing the tempo.
  - .25x
  - .5x
  - .75x
  - 1x
  - 1.25x
  - 1.5x
  - 1.75x
  - 2x

### **Optional Inputs:**

- Metadata for each uploaded item (title, description, genre)
  - Default Title: filename of uploaded file
  - Default Description: Null
    - 3-254 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Numbers: 0-9
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"
  - Default Genre: Null
    - 3-30 Characters consisting of:
      - Uppercase letters: A-Z
      - Lowercase letters: a-z
      - Symbols: "@.\_-!#\$%`\*+/?^'{}|~"

### **App Permissions:**

- Authenticated user have “write-only” permissions so that they can overwrite the data they have stored in the database for their track after they slow down or speed up the track.

### **Target Audience:**

- Authenticated users that want to edit the speed of their selected track.

### **Pre-Conditions:**

1. The authenticated user must be logged in with valid credentials.

2. The authenticated user has an audio track on the main track editor for tempo transposition.

**Success Outcomes:**

- The authenticated user successfully transposes the tempo of the selected audio track by the specified percentage.
- The transposed audio track is stored in the system's relational database.
- If provided, the metadata associated with the track is saved and displayed correctly in the user's library.
- The authenticated user receives a confirmation message indicating the successful tempo transposition.

**Failure Outcomes:**

- The user encounters an error during the tempo transposition process, resulting in the failure to adjust the tempo of the track.
- In the case of a tempo transposition failure, the system logs the error, including a timestamp and details of the issue.
- The authenticated user is notified of the tempo transposition failure with a clear error message.
  - “Tempo has failed to change, please try again.”
- If the app experiences technical difficulties during the tempo transposition process, such as server issues or connectivity problems, the user receives an error message.
- The system logs these technical errors for further analysis and debugging by developers.



## **Rhythm Tempo Game:**

**RTG-1** (Effort points - 8): As an authenticated user, I want to play an interactive game to learn rhythm and notes.

### **Required Inputs:**

- User interaction with the game interface.
- Accuracy of the authenticated user's responses during the game.

### **Optional Inputs:**

- User profile or settings for personalized gaming experience.

### **App Permissions:**

- Authenticated users have "read" permissions to access the game.
- Authenticated users have "write" permissions to record game progress.

### **Target Audience:**

- Authenticated users of the Musi-Cali platform interested in learning rhythm and notes interactively.

### **Pre-Conditions:**

1. Authenticated user is logged on
2. An authenticated user has accessed the game interface from the app's home dashboard.

### **Success Outcomes:**

- The user successfully plays the interactive rhythm and notes game.
- During the game, the user's accuracy is tracked and contributes to a final score.
- The user's game score is securely stored in the system's database.

### **Failure Outcomes:**

- The user encounters an error while trying to play the game.
- If the game fails to load within 3 seconds, an error message is displayed, and the error information is logged and archived for further analysis.
- The authenticated user receives a notification when the error occurs, providing details about the issue and allowing the authenticated user to exit back to their home dashboard.

**RTG-2** (Effort points - 3): As a user, I want my accuracy and score to be recorded in the rhythm tempo game.

### **Required Inputs:**

- Authenticated user's in-game accuracy and score data.

**Optional Inputs:**

- None

**App Permissions:**

- Authenticated user has 'read' app permissions to view their cumulative score data.
- Authenticated user has 'write' app permissions

**Target Audience:**

- Any authenticated user of the Musi-Cali platform

**Pre-Conditions:**

1. The user is logged in with valid credentials.
2. The user is actively playing the Rhythm Tempo Game.

**Success Outcomes:**

- The user's in-game accuracy and score are accurately recorded and saved in the system's database.
- The recorded accuracy and score contribute to the user's progress and achievements within the game.

**Failure Outcomes:**

- If there is an issue with recording accuracy and score due to technical problems, the user receives an error message.
- The system logs the error, including a timestamp and details of the issue, for further analysis and system improvement.

## **Glossary:**

### **Business Terms:**

- Composer: An artist who makes original music from the ground up
- Arranger: An artist that arranges music that already exists in their own way
- Instrumentalist: Anyone who plays a musical instrument
- Cover artist: An artist who makes a cover of a song that already exists
- Audio Waveform: A graph that displays amplitude or level changes of any audio over time.
- Metronome: A device that produces an audible click/sound at a regular interval that can be set by the user, typically in BPM
- BPM: Beats per minute is a measurement of a song's tempo
- Tempo: The rate of speed at which a musical piece or passage is to be played

### **Technical Terms:**

- Persistent Data Store: a database designed to retain data even when the application or system using it is shut down or restarted.

### **Resources:**

<https://wmich.edu/mus-gened/mus150/Glossary.pdf>

<https://www.soundbridge.io/what-are-waveforms-how-they-work>