Musi- Cali Product Proposal

Product Name: Musi-Cali

Date: 10/4/23

Team Name: The Decision Tree

Team Members:

Jacob Phillips

Diego Garcia

Kihambo Muhumuza

Nathan Wolski

Kameron Ferrer

Team Lead: Aiden Hock

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Product's Value/Purpose:

Our purpose is to make an app that improves the workflow and productivity of cover artists through collaboration with other artists as such. We want to give cover artists the tools to get better at their craft by working with other artists, so this platform will make that easy to do.

Additionally, this app is also built to bring together musicians, composers, and arrangers alike by making it easy to find gigs happening in California. This way, musical artists are able to start their own band or plan their own gigs with each other.

Vision:

We plan to expand artists' capabilities to eventually create their own original song. We'll do this through offering artists music theory lessons so that they can understand the structure of a song. This will help grow an artist's musical ability and eventually become able to educate other artists that also want to learn and grow.

Target Audience:

Musi- Cali's is catered towards cover artists in California who are looking to collaborate with other cover artists to improve their craft.

This app is also catered towards musicians, instrumentalists, composers, and arrangers who would like to form bands/ groups of their own and meet musicians who are looking for gigs to play at.

Scope:

- The web app will be supported on Chrome for mobile (9:16 aspect ratio) and desktop (21:9 aspect ratio) devices.
- This will be supported in the Pacific Time Zone (PST) to accommodate users across California. The app will be available in English (US) at first, and then eventually both American English and Spanish.
- The time standard will be shown through a 24 hour clock system, so that eventually we can provide service to the whole US nation and its time zones.
- This web app will run as a single-page application (SPA) that will load a single HTML page and dynamically update its content as the user interacts with it.

User Types:

Super Admin

The Super Admin is the highest authority in the application and they have complete control over the entire platform. This position handles various administrative tasks to make the application run smoothly.

- User Management: The Admin can create, delete, and manage user all accounts.
- Content Moderation: The Admin can manage shared end-user content in order to ensure that it meets community guidelines.
- Analytics and Reporting: The Admin can access data analytics and generate reports for logging the entire application.
- Technical Maintenance: The Admin can perform maintenance on the application through updating and troubleshooting system processes.
- Security Management: The Admin is responsible for ensuring user data security and safety.

General Users

The artist users are the ones using the app. All general users are authenticated, have general permissions on the app, and have access to every feature.

- Account Creation and Removal: normal users can make or delete their account.
- Account Modification: normal users are allowed to make changes to their profile. They can add and remove audio files, change their profile picture, or change their username.
- Report Other Users: normal users can report any other user that may seem fake, harmful, or pretending to be someone they're not. Removal of the reported account may be the result.

Phase 1 Features:

Collaboration Search:

Collaboration Search will locate other musicians that a registered user is looking for to collaborate on a cover project. Only authenticated users can use this feature to find other musical talent.

Feature Details:

Search Flag Setting: All authenticated users with this setting enabled will be shown in the search results. If they are not authenticated, they won't be included in the search results unless they enable the setting. The settings will persist forever until it is changed. The data of this feature being enabled or disabled will be read, updated and stored in a database. Also, the current setting that the user chooses will be updated to keep track of whether it's enabled or disabled. Logging the data will include how many times this feature succeeds and fails when the user uses it. After 10 logs, the data will be archived into a data store. Passive error handling will be done through logging. The user will be notified of a save error if any errors occur during the saving of a setting

Search Filter: The authenticated user can also add filters to their search, those filters being choices among the types of talent (composers, producers, cover artists, music teachers, and instrumentalists) and the type of instrumentalist (pianist, guitarist, percussionist, etc.) exclusively in that order. The search results will be affected by any filter selected, otherwise all enabled users of any type will be shown. The types of filters and instrumentalists will be stored in the database. Logging the data will happen every time the app fails to apply an added filter to the search, and that information will be archived into a data store. In case an error occurs while adding or removing filters, the authenticated user will be notified.

Ear Training:

This feature will help users improve their relative pitch by playing the Ear Training game. Either authenticated or unauthenticated users can use this feature.

Feature Details:

Hearing Game Mode: In this mode, the app will play a random note for the user to hear. After, the user will be asked to identify the note by choosing 1 of 4 multiple choice options; one of them is the correct answer. If the user chooses right, a message will display “Correct!” and play the user another note with another 4 options. This process will repeat until the user quits this mode. The data collected will be the user’s answers and the correct answer. If an answer is marked as wrong but is actually correct, then that information will be logged and archived in a data store. The user will be notified of an error if the app doesn’t respond in this mode.

Score Display Setting: The ratio of correct- to- wrong notes answered can be displayed on their public profile to show how strong their relative pitch is. However, users choose to keep their score private by turning on the “My Eyes Only” option. The data collected will be the user’s choice of keeping their Ear Training score public or private. If the app fails to save the user’s privacy setting, that information will be logged and archived. Also, the user will be notified if the app fails to save their privacy settings.

Artist Portfolio:

The Portfolio feature allows authenticated users to showcase their musical work through tracks, clips, and demos.

Feature Details:

Portfolio Uploading: Authenticated users may upload tracks/demos in .mp3 and .wav files to a portfolio. Also, clips may be uploaded as an .mp4 file. The system stores all portfolio uploads in its database. If any file fails to upload, that information will be logged. If the app gets an upload error, the user will be notified. Users will only be able to upload at most 3 instances of each file type, or 500 MB total.

- File size limits:
  - Wav files: 100 MB per wav file ensures users can upload high-quality tracks
  - Mp3 files: 50 MB per mp3 file will offer a good balance between quality of sound and size size
  - Mp4 files: 200 MB per mp4 file will ensure that visuals in addition to audio are of reasonable length and quality.

Artist Type: Users will specify their artist type on their portfolio which include only composer, arranger, producer, and instrumentalist. Multiple roles may be chosen at once. The artist type(s) will be public to other users. The artist types(s) of a user will be securely stored in the system's database as well as changes made to their artist type(s). If the app fails to save the user's artist type(s), that information will be logged and the user will receive an error message.

Portfolio Visibility: Users also have the option to choose the visibility of their portfolios, which involve three settings: "Public, Private, and "Selective", which grants artists control over who can access their portfolio. When a user selects the "Public" setting, their portfolio becomes visible to all authenticated users of the app. When a user selects the "Private" setting, their portfolio remains hidden from other authenticated users. And when a user selects the "Selective" setting, this allows them to select specific users who can view their portfolio. Failures to save visibility preferences will be logged for security, and the user will be notified of this error.

Tempo Tool

This provides a user with a visual and audible tool for keeping precise time with their music. The user may be authenticated or unauthenticated.

Feature Details:

Metronome: In this mode, a metronome is displayed, which will play a simple ticking beat based on the BPM (beats per minute) set by the user. When they tap “Start,” the metronome will play an evenly spaced beat synced up to their chosen track. The beat will persist until the user taps “Stop.” Users can change the settings of the BPM. The data collected will be the beats per minute set by the user as well as if the metronome is on or off. If the metronome doesn’t play after the user clicks “Start” 3 times, this information will be logged in the data store and the user will be notified of the error.

Audio Visualizer

The Audio Visualizer is a dynamic visual representation of audio as it plays within the app.

Feature Details:

Waveform Display: Authenticated Users will always have access to a visualizer when listening to music inside a project. This feature displays a real-time graphical representation of the audio waveform, allowing any authorized user to see the music's loudness in the form of peaks and troughs. This feature relies on frequency and volume data of the audio that is saved and stored in the app's database. If the waveform is not able to load in, this error will be logged into the data store for later analysis, and the current authenticated user will be notified with an error message. Overall, the display will serve to enhance the listening experience of any authenticated user.

Waveform Selection/Customization: Authenticated users may customize their waveform by choosing from various themes or styles. This will change the color, size, or overall design of the waveform. The Waveform will not be limited to representing the song's audio all at once, but can be set by the user to represent specific instruments or sounds within the track. If a user selects a theme that's currently unavailable due to an error, an error message will be displayed, notifying the user about the unavailability of that theme, and the theme unavailability will be logged for analysis and fixing.

Basic Track Editor

The Track Editor is a tool users can use to tweak the tracks they've uploaded.

Feature Details:

Track Selection: In this mode, users that stored tracks in the database can select a track from their profile that they would like to edit. Then they will be shown a waveform of the track along with its runtime. If a user tries to select a track to edit and the track does not load after 5 seconds then an error will occur.

Trimming Tool: Users will be able to use a trimming tool that allows them to trim the both ends of the audio to the size they want. To save the edits made with this tool, the user can either save or discard them. Any edits made to the track are saved to the database when the user chooses to save the track.

Effects and Filters: Offers a range of audio effects and filters that users may apply to their tracks such as reverb, delay, chorus, or distortion for enhancing creativity. Filters applied to the track are saved into the database when the user chooses to save the track after they finish editing the track. Each filter that is not used is logged and any effects and filters that raise an error when trying to be added or removed will notify the user.

Artist Profile Calendar

The profile calendar allows artists to post their own upcoming gig(s). The user will also be able to view other artist's upcoming gig(s), the gig(s) that are currently happening, and any gig(s) that have already happened.

Feature Details:

Calendar Privacy Setting: Authenticated users have the option to choose the visibility of their portfolios, which involve three settings: "Public, Private, and "Selective", which grants artists control over who can access their portfolio.When an authenticated user selects the "Public" setting their portfolio becomes accessible to all authenticated users of the Musi-Cali app. Users opting for the "Private" setting ensure that their portfolio remains entirely hidden from other users. When an authenticated user chooses the "Selective" setting, this allows them to handpick specific registered users who can view their portfolio. All changes to visibility preferences are logged for security and for authenticated users to track changes to their portfolio accessibility over time in a visibility history section. If the app fails to save the user's privacy settings, that will be logged and archived, while the user is notified with an error message.

Viewing Other Artist's Calendar: Authenticated users will be able to view other user's profile calendars. This will display gigs which give basic information about a gig such as name, location, time, and who is performing. If the app fails to load gig data, that information will be logged and archived while the user is notified with an error message.

Editing gigs: Authenticated users will be able to edit and delete gigs they have created. Edits to gig data will update data stored in the database. Deletions will delete the data stored in the database. If the app fails to update the database, that information is logged and archived while the user is notified with an error message. If the app fails to delete a gig from the database, that information is logged and archived while the user is notified with an error message.

Scale Display:

This feature will display the notes of any scale that the user would like to see. Users may be authenticated or unauthenticated to view a scale.

Feature details:

Scale Selection: The Scale Display will present the user with an option of 12 notes (A, A#, B, C, C#, D, D#, E, F, F#, G, G#) and then an option of the type of scale (major or minor). After the user has selected a note and a type of scale, the app will then display the sequence of notes in that scale. For example, if the user chooses the note “A” and then “major,” the Scale Display will show all the notes of the “A Major” scale. The 12 notes and types of scales will be stored in the database. If the app doesn’t display the right note, this information will be logged and archived into a datastore. The user will then be notified of an error.

Bingo Board:

The Bingo Board is a platform feature where authenticated users can post listings that other authenticated users can respond to, making looking for gig opportunities easier.

Feature Details:

Gig Posting: Authenticated users can see posts from venues or other users who want to recruit talent. Post information (name of the gig, the gig location, starting time, and the artists associated with the gig) is stored in the database. If the app doesn't display the gig post information or if a reply to the gig listing was not sent, that information will be logged and the user will be notified of that error message.

Gig Filter: Authenticated users will be able to change how the listings are presented first by geographical range using their zip code and a mile radius. Then the authenticated user will be able to filter by a variety of variables such as: date, name, local, asynchronous, and pay. Authenticated users will be able to click on a listing to view any provided details, and click on a button that lets the user who posted it know they are interested. An error message will be shown to an authenticated user when a filter fails to apply, error information will be logged in the database.

Application List: Listing creators can view their own posts and see a list of applicants who've expressed interest.They can review applicant profiles/portfolios to assess suitability. Listing creators can message applicants to share additional details or alternate contact methods. Information related to applications, user profiles, and messages is stored in the database. Authenticated users have the option to delete their own replies to a listing. Error handling covers viewing a reply failure or issues with message sending.

Gig Review System:

Allows authenticated users to rate and review past gigs they have done, which allows a comprehensive gig selection

Feature details:

Gig Rating: Authenticated users will be able to leave a review on their past gigs. In the review, the user can rate the gig from 1 to 5, leave a comment, and add tags such as ‘passionate’, ‘exciting’, or ‘inspiring’. These reviews will be stored in the database and will be an accumulative score out of 5. If the app fails to upload data to the database, that information will be logged and archived while the user is notified with an error message.

Rating display: Authenticated users will have their rating displayed on their profile and stored in the database. If the app fails to load rating, that information is logged and archived while the user is notified with an error message.

Collab Feature:

When a user finds a talent of interest, they have the option to send a request for collaboration with that talent.

Feature Details:

Collab Request: The requesting authenticated user can contact users they would like to collaborate with by pressing on the option that says, “Let’s Collab!” on their profile with a brief description of what project they’re working on, along with what that user wants from the talent of interest. Users are able to cancel their collab request which would delete the request from the database. All requests that a user sends to another user are saved to a database. If a user sends a request and another user does not receive it then the interaction will be logged. If a request is not able to be sent then an error will be raised, the user is notified and the information will be logged.

Viewing of the Collab Request: The receiving user will get a notification that says that someone wants to collaborate with them. Then it will show the requesting user’s profile along with the brief description of the requesting user’s current project. An error will raise if a user tries to open a notification and the system is unable to. The information for the error is logged in the database.

Acceptance of the Collab Request: The receiving can either approve or decline, then the requesting user will be notified of their decision. If the receiving user accepts, both users will have access to each other’s contact information. But if the receiving user declines, the requesting user gets a notification back saying that this user has declined your collaboration request. Collab requests that are approved or declined are deleted from the database. Errors in accepting or declining collab requests are logged into the database and the user is notified.

Phase 2 Features:

Music- Lesson Hub:

This music lesson hub offers users access to a library of music lessons and tutorials. These lessons are categorized by instruments, genres, and skill levels (Beginner, Intermediate, Expert). Additionally, there are interactive lessons available for beginners. These lessons include practice exercises, quizzes, and videos, with a progress bar to track completion. Users' progress and quiz scores are logged in a progress history section for them to monitor their improvement over time.

Advanced Search:

Allows users to manually input a filter type when using Collaboration Search. Each character in the search that the user types into Collaboration Search will be stored in a database. If the app fails to read the user's filter type, that information will be logged and archived. The user will be notified a search error occurs.

Tempo Transposition Tool:

Adding a functionality to the track editor to allow authenticated users to speed up or slow down their tracks by specifying certain percentages.

Rhythm Tempo Game:

A tool to help users learn rhythm and notes in an interactive game. Based on how accurate the user is, the user will gain a score out of 100 points. Each user's score for each game is stored in a database. If the user tries to open up a game and the game is unable to load in 10 seconds then an error will occur and the information will be logged and archived. The user will be notified when the error occurs.

Glossary:

Business Terms:

American English: the English language spoken and written in the United States.

Producer: a person who uses a DAW (digital audio workstation) to create sounds and music.

Musician: a person associated with the musical arts. Usually either writes or creates music.

Instrumentalist: a person who plays a musical instrument.

Scale: a pattern of notes that go up or down in one of twelve keys.

Pitch: the position of a single note relative to other notes. Could be high or low.

Clips: video demonstrations of a track.

Metronome: a tool used by musicians that marks time at a selected rate. Usually a ticking sound.

Technical Terms:

Mp3: a file of compressed audio.

Wav: a file of uncompressed audio.

Mp4: a file that contains video.

SPA (Single Page Application): a type of web application or website that interacts with the user by dynamically rewriting the current web page rather than loading entire new pages from the server.

HTML (Hypertext Markup Language): the standard markup language used to create and structure content on the World Wide Web.

Database: an information warehouse that stores data.

Resources:

- https://github.com/aidenhock/491A_Senior_Project
- https://www.digitizationguidelines.gov/term.php?term=waveformsound#:~:text=Term%3A%20Waveform%20(sound)&text=Definition%3A,amplitude)
- https://www.armadamusic.com/university/music-production-articles/eq-explained-the-basics#:~:text=Equalization%20%E2%80%93%20or%20EQ%20%E2%80%93%20is%20one,entire%20songs%20%E2%80%93%20of%20its%20imperfections.
- https://www.britannica.com/art/time-signature