

Aud.io:
The Sociable Music App
CSCI 4100U

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Overview

Our project is called “Aud.io”, a music compilation and favouriting app with the emphasis on sociability. The original intent of our app was to create somewhat of a mock Spotify or Apple Music, however along the development we had pivoted more to a rating and comparison app which tracks songs within a given genre. User’s have the ability to update and display their favorite genres and songs, add songs to our database, and see where other users in the world are. Please note you cannot play these songs on your device/emulator as this was not intended in our scope but could be something to add in the future. The purpose of this app was to promote a sense of community and to have an easy way to share your music tastes for users to see. Some people may feel shy or nervous while talking about their music tastes, and this app allows those users to feel comfortable, finding others of similar tastes. Through this they can potentially find new artists or genres to listen to that they may enjoy. Our goal is to ensure the optimal listening experience when it comes to music, whether it be on your own, making playlists for a party or even finding similar song tastes within a group of friends, Aud.io is here to make that process easy.

Member Contributions

Mathew Kasbarian: Genre Page, Song Page, Add Song Page (Cloud Storage).

Alessandro Prativiera: Local Storage: (SongModel, Genre Model, DButils, Favourite Genre, SongView Page, Playlist Page), Profile Page, Statistics Page including DataTable and Chart.

Matthew Sharp: User authentication, SignIn/SignUp Screens, Password reset features, Logout Feature, Cloud Storage (Setting User within database), Internationalization, Animated Loading Screen, App Logo Designs, Snackbars.

Rajiv Williams: File Structure, Cloud Storage (FriendsList and AddFriends Pages, UserModel, SongModel), Maps, Geolocation, Geocoding (Explore Page), Local Storage (Favourite Genre, Playlist Page), Design (Home Page, Genre Page, Playlist Page, SongView, Profile Page), Dialogs.

Majority of work was done in voice call where we debugged and solved issues together. Sections mentioned above relate to the certain topics we assigned ourselves to do during the timespan of this project, but multiple people worked on the same files.

UML Design

Please Reference Photos Within Folder

User's Guide

Environment Setup:

- 1) Installing Flutter SDK: First, we need to install the Flutter SDK. This includes the Flutter development toolchain, including the builder, the engine, and the command line tools. Download and install this SDK from the following location:
 - a) <https://flutter.dev/docs/get-started/install>
- 2) Adding Flutter SDK to your PATH: For Windows devices go into your Windows Search Bar and type "Edit the System Environment Variable". This will open a screen labelled "System Properties". You want to select the Environment Variables button on the bottom right. This then opens your "Environment Variables" Page. Double click on the "Path" row under System Variables. After which tap the "New" button on the top right of the subsequent screen and add the bin folder of the Flutter SDK into your path. After which press "Okay" on all previous tabs to apply the changes.
- 3) Installing Android Studio: Download Android Studio from the following location:
 - a) https://developer.android.com/studio?gclid=EAIaIQobChMIImLfvq57k-wIVwdrICh2w9wibEAAYASAAEgKR0PD_BwE&gclidsrc=aw.ds
- 4) Once you have downloaded and opened Android Studio you will need to select the plugins tab. From there you need to install the Flutter plugin which will automatically install the dart plugin as well so don't be surprised if you see two plugins.
- 5) Restart Android Studio
- 6) Once you are back in Android Studio select SDK Manager from the Tools menu. On the left, select Appearance & Behavior -> System Settings -> Android SDK. From the list, choose a version of Android that you'd like to use when running your applications. It is recommended that you avoid any pre-release versions, as development tools for those versions are often buggy and unsupported. It is also recommended that you choose a relatively recent version, since they usually provide a better experience (for developers and users). We recommend API Level 30 with Target being Android 11.0 (R).
- 7) Creating an Android Virtual Device: Finally, we need to create a virtual device (emulator) to use when running our future projects. Select AVD Manager from the Tools menu. Click the Create Virtual Device... button. The specifications are up to you; some people create a device identical to their personal device (we recommend Pixel 4 API 30). Ensure that the device is relatively new, though, so that it can run the newer version of Android that you've downloaded.
- 8) That was it, you can now restart Android Studio and move onto the next step.

Running The App:

- 1) Once you are in Android Studio open up the folder with all the Apps code in it (course_project-project-csci-4100-final-project-aud-io)
- 2) From there open up a terminal in Android Studio and run flutter clean, then run flutter pub get
- 3) If you have created an emulator run that emulator and wait till it has loaded up
- 4) Back in the terminal type in flutter run and you will be able to run our project.
- 5) An alternative is to click the green play button near the top right part of Android studio this will also run our project. However make sure and emulator is running before clicking this button.

App Guide:

- 1) Upon running the app you will be greeted with an animation screen of our project logo. After which it displays the finalized loaded SignIn Screen.
 - a) If an account has not been registered tap of the “SignUp Here” text on the bottom right. This will lead you to the SignUp Page. (See Point 2)
 - b) If you have an account please use the valid email and password you used to create your account. Press and type the proper information into these text fields. After inputting into these fields press on the Sign-in Button, this will direct you to the main page. (See Point 3)
 - c) If you require a password reset, please tap on the “Forgot Password?” Text, which will direct you to the Reset Password Page. (See Point 4)
 - d) If you need a translation of the text, please select the vertical three dots on the top right. Tap on the icon and select the language you wish to translate to. (This function is somewhat glitchy. It works as intended but sometimes text will not fully translate. We recommend to either tap on the desired language twice or long press on the language until the shadow underneath the text completes to avoid complications).
- 2) This page is displayed if the user desires to make a new account for the “Aud.io” app. Fill out the each of the form fields of the SignUp Page to proceed with the registration process.
 - a) Press and type out your email address, password, username, phone number, city of residence within each of the text fields. You also are required to select the country you are a resident to by clicking on the “Country” drop down button. In addition, you must enter a valid birthday, tap on the birthday button and select your date of birth.
 - b) If any errors occur, a message will appear on how to resolve the issue. Please follow the instructions presented to validate your registration process.

- c) Once each field is filled out, press on the “Sign-up” Button. You should now have a fully registered account and be directed to the main page. (See Point 3)
 - d) If you already have an account please tap on the “Login Here” text on the bottom right of the page to go back to the initial signin page. (See Point 1)
 - e) If you need a translation of the text, please select the vertical three dots on the top right. (See Point 1d)
- 3) Welcome now to the main page of our application. Now as a registered user of “Aud.io” you now have full functionality over all of apps features.
- a) If you wish to view your profile details, tap on the box labelled “Profile”. (Follow Point 5)
 - b) If you wish to view your friends list, tap on the box labelled “Friends”. (See Point 6)
 - c) If you wish to view the genres in our database of songs, tap on the box labelled “Genre”. (See Point 8)
 - d) If you wish to view the map displaying all registered users, tap on the box labelled “Explore”. (See Point 10)
 - e) If you wish to view your custom playlist, tap on the box labelled “Playlist”. (See Point 11)
 - f) You can see you liked genres by tapping on the heart icon on the top right of the screen. This will take you to a page where you can view and delete your favourite genres. (See Point 12)
 - g) If you need a translation of the text, please select the vertical three dots on the top right. (See Point 1d)
 - h) If you want to logout or view the statistics of the application, tap on the settings cog icon on the top right on the screen. (See Point 14a)
- 4) This page is displayed if the user requires a password reset for their account. Please input a valid user email used during the sign up process. If the email is a valid user, an email will be shortly sent out to that user’s email. Be sure to check your spam folder if you do not see it in your main inbox. If you do not see an email after a few minutes please resubmit the password request.
- 5) This page displays whenever a user wishes to see their stored data and information. Upon viewing this page they will see their default icon, their username, email, city, country, phone number, birthday and favourite genres. If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3)

- 6) This page displays the user's current friends. If the user has no friends a kind message will be displayed. If user's have added friends, it will display these users in a list, showing their profile icon, username and country. It will also show an icon to the right which looks like a human with a minus icon, this is used to remove someone from the friends list.
- a) Users can add a new friend by tapping on the bottom right button with an human icon beside a plus icon. This will route you to the add friends page. (See Point 7)
 - b) If the user wishes to remove a user from their friends list they can tap on the human with the minus icon to the right of the displayed friend. Once tapped it a dialog box will appear asking the user if they are sure they wish to delete that user from their friends list. If selected "no", no deletion will take place. If selected "yes", user will be deleted from the friends list with a confirmation using a snackbar message.
 - c) If the user wants to view a certain user's information aside from their own. They can tap the profile icon of that user to view their username and email.
 - d) If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3)
- 7) This page displays a search function to view other users. The user can input a friends username into the text search field and usernames following the search pattern will be displayed below.
- a) If the user wants to find out more information about a potential friend, tap the profile icon of the user. (See Point 6c)
 - b) If the user wants to add a friend to their friends list, all they need to do is tap the human icon with a plus symbol to add that specified user. Once pressed it will add the user to their friends list. This will redirect the user back to the friends page, displaying the new friend in the friends list. (See Point 6) If no users are found a "No Results Found" message will show.
 - c) If the user wishes to traverse back to the friends page select the left facing arrow icon. (See Point 6)
- 8) This page displays all of the genres registered within our Firestore database. These currently include: hip hop, alternative, classical, dance, grime, pop, rock and soul. Beside each genre is a hollow heart icon, used to symbolize user's saved favourite genres.
- a) The user can tap on these hollow heart icons to label certain genres as their favourites. If the heart is filled black, it means that is a registered favourite genre for that user. To remove a genre from this list the user can tap on the heart again and it will return to a hollow heart. If the user desires to see their favourite genres listed out, they can tap on the hollow heart icon on the top right of the screen. (See Point 12)

- b) If the user wishes to see what songs are registered under each genre, they can tap on the genre's text within that box. This will route the user to the list of all registered songs in our Firebase storage for that genre. (See Point 9)
 - c) If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3)
- 9) This page displays all of the songs registered under that specific genre in the database. It will display the song name, artist and duration of the song.
 - a) If the user really enjoys the song they can add it to their favourites playlist. This is done by pressing the plus symbol to the right of that respective song. This will then route them to their playlist page (See Point 11).
 - b) Users can also add new songs into the database by pressing the rows button icon with an add symbol on the top right of the page. This will route them to a form field to fill out the descriptions for a new song (See Point 13).
 - c) If the user wishes to traverse back to the genres page select the left facing arrow icon. (See Point 8)
- 10) This page displays a map of the world. The user must allow permissions for the app to read their location to access this feature. If permissions are denied then the app will exit from this screen back to the main page. The users are able to zoom in and zoom out using the magnifying buttons on the top right of the screen, the left being zoom in and right being zoom out. This will center the map to where the user currently is. To use this feature the user must allow the device to fetch their location. We recommend if this is your first time allowing the location to be accessed to restart the application.
 - a) The user's icon will be displayed on the map according to where their device reads it is at. Clicking on any profile on the map will center the screen to that user. This will also change the displayed card at the bottom to show the currently selected user. The user can swipe on this card to view the location of other users, displaying their username and number of friends and common genres you have in common.
 - b) If the user wishes to view more information about a user, select their profile icon within the bottom card, and this will open a screen of that desired user's information. (See Point 5). (NOTE: Tapping on the left facing arrow button on the subsequent page will bring u back to the explore page, not the home page)
 - c) If the user wishes to add a specified user as a friend, they should click on their profile icon on the map or swipe on the bottom card to bring up their profile. After which clicking on the top right icon (human with a plus symbol) of the bottom display card will add that user to your friends list. (See Point 6)
 - d) If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3)

- 11) This page displays the playlist information of the users most liked songs. This will show a list of the users selected favourite songs (See Point 9a to add songs to this playlist). This displays songs information of the song name, artist and duration. If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3). User's favourite playlist is stored over local storage. They can delete songs from this playlist by tapping on the trash can icon to the right of the specified song.
- 12) This page will display the users favourite genres in a list format. To add to this list: (Follow Point 8). This will save the users favourite genres in local storage. The user can delete a certain genre from this list as well. The user taps on a minus symbol to the right of the genre box. By pressing on this it will delete the genre from the user local storage that saves the list of favourite genres. If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3).
- 13) This page is displayed when the user wants to add a new song into our database. This will prompt the user to input the name, artist and duration of a song. Once all forms have been provided adequate information this will add the information to the firebase storage of that song to the respective genre collection. This will route the user back to the songs list of the specific genre and update the list to contain this new song. (See Point 9)
- 14) This page displays the settings page of the application. This has two buttons to select from, statistics and logout.
- a) If user wishes to logout, tap on the "Logout" text button. This will route the user back to the sign in page. (See Point 1)
 - b) If the user wishes to see the statistics of how many users are registered from a specific country you can do so by tapping on the "Statistics" text button. (See Point 15)
 - c) If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3)
- 15) This page displays the data table and chart of the countries in which the number of users from the country are from. This can allow the user to sort alphabetically by country name or numerically by frequency of users from said country. By pressing on the vertical bars icon on the top right of the screen this will take you to a graphical representation of the data in a horizontal bar chart format. If the user wishes to traverse back to the home page select the left facing arrow icon. (See Point 3)

Functional Requirements

Dummy User for Login:

Email: dummy@gmail.com

Password: password1234

Multiple Screens and Navigation: Navigation to traverse multiple screen is used all over the project, with all routes are found in main.dart. Almost all files use some form of navigation routing to traverse multiple screens. (i.e., SignIn routes to Main Page after completing with valid SignIn credentials).

Dialogs: The Circular Progress Indicator while processing a login, sign up and forget requests. A dialog is also used to confirm the deletion of a friend within the friends list page. By selecting “yes” you delete the user from your friends list.

Pickers: Date Pickers are used on SignUp Page to retrieve the users birthday.

Snackbars: Errors whenever incorrect/invalid information added to the signup/signin/reset password pages. Snackbars used to display address of current location when viewing the explore tab. Also found when adding duplicate genres to favourite genre page.

Notifications: Can be found when requesting to reset your password. Implemented to send an immediate notification and also a timed two minute reminder notification after request was sent.

Local Storage: Local storage used to add and delete users favourite genres. The user is able to add their favourite genres within the genres page by tapping the hollow heart icon, and can view this page of liked genres by tapping the hollow heart on the top right of the genres page or the main page. Local storage is also used to create the favourite playlist of a user. They are able to add songs of their favourite artists by selecting the plus icon to the right of the song. This takes them to their playlist of favourite songs with the new song added.

Cloud Storage: Cloud storage can be found with trying to authenticate the user information. This can also be found within saving the users data and retrieving it to display amongst the profile, explore and add friends pages.

Data Tables and Chart: Settings button which has a Statistics Page which displays the number of users of each country displayed in a chart and table.

Maps, Geolocation, Geocoding: Explore page displays a map that displays your current location as well as the location of other users that have allowed their location to be tracked. You can also view other users profiles from this page. This also will display the users closest address to their current location within a snackbar.

Internationalization: Languages can be changes on the sign in screen, signup screen or the main page screen. Translation of text found throughout the app.

Project References

Tutorials on Flutter Following Tutorials by Johannes Milke on Youtube:

<https://www.youtube.com/c/JohannesMilke>

Environment Setup Took Inspiration from Lab01 README.md:

<https://github.com/CSCI4100U/Lab01>

Flutter Documentation Used to Assist us:

<https://docs.flutter.dev/>