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1.0 Introduction

The music streaming industry has significantly evolved over the past decade, offering instant access to millions of songs, yet many platforms fall short in providing a truly personalized and engaging experience. In this crowded landscape, music streaming often becomes a routine activity, with users struggling to connect deeply due to generic recommendations and limited artist interaction. Therefore, Meloverse seeks to address this gap by prioritizing a user-centric experience that revolves around individual preferences and favorite artists. Unlike traditional services, it enhances the connection between listeners and musicians by offering exclusive content such as behind-the-scenes footage, real-time updates on concerts, new releases, and personalized recommendations. By fostering a space for connection, discovery, and celebration, Meloverse aims to redefine music streaming, setting itself apart as a unique platform where music is not just heard but felt, creating an immersive musical universe for each user.

1.1 Objective of Meloverse

The primary goal of Meloverse is to deliver a music streaming platform that emphasizes personalization, user engagement, and artist-centric features, setting itself apart from traditional services by putting the user experience at the forefront. By allowing users to select their favorite artists and tailoring content around those choices, Meloverse ensures that each interaction feels unique and relevant, transforming the listening experience into a more meaningful journey. With exclusive content such as behind-the-scenes footage, artist interviews, early access to releases, and real-time updates on concerts and merchandise, users can connect more deeply with the musicians they love. Beyond streaming, the platform aims to build a community where users feel valued through personalized recommendations and user-generated playlists, while also providing an inclusive environment for emerging artists to gain exposure. Ultimately, Meloverse seeks to set a new standard in music streaming by continuously evolving its features to elevate the experience, making it a place not only for listening but for discovering, connecting, and experiencing music in a more immersive and meaningful way.

1.2 Logo



Figure 1.0 Meloverse logo

The Meloverse web application follows the theme of starry night. Just as how the galaxy hosts vast numbers of stars, our web application caters towards a vast number of users, we use it to symbolize the vast possibilities we provide in enhancing a user's experience. Therefore, our logo is a music vinyl that depicts the musical aspect of the web application whilst the star signifies the quantity of personalisations features. The color theme focuses on a darker palette that is soothing and easy on the eyes and replicates the colors of a night sky.

2.0 Functionalities of Meloverse

The Meloverse platform caters to two types of users: Regular Users (Listeners) and Administrators (Admins). Each type of user is offered a set of functionalities tailored to their needs.

2.1 For Regular Users (Listeners):

1. User Account Management:

- a. Users can sign up and log in using their username and password.
- b. Personal profiles allow users to manage preferences, favourite artists, and playlists.

2. Music Library Access:

- a. Search, sort, and filter songs, albums, and artists.
- b. Play, pause, skip, and adjust volume with high-quality streaming.
- c. Users can create, modify, and delete custom playlists and mark favourites.

3. Playback Features:

- a. Standard playback controls, including shuffle, repeat, and volume adjustments.
- b. Playback queues to view, edit, and rearrange upcoming tracks.

2.2 Special and Innovative Features for Regular Users:

1. Artist News and Updates:

- a. Real-time updates on favorite artists, including concert dates, new releases, and exclusive merchandise.
- b. Access to exclusive artist content like behind-the-scenes footage and interviews.

2. Points Reward System:

- a. Earn points by engaging with the platform (streaming, playlist creation, following artists).
- b. Redeem points for exclusive content, early releases, or artist-related experiences.

3. Social Interaction:

- a. Follow artists and users to stay updated on new music and shared playlists.
- b. Leave comments and reviews on songs, albums, and playlists.

4. Personalized Recommendations:

- a. Tailored playlists and recommendations based on user preferences.
- b. Curated artist-centric content to enhance user engagement.

2.3 For Administrators (Admins):

1. Content Management:

- a. Admins can upload songs, manage artist profiles, and curate playlists.

2. User Management:

- a. Supervision of user accounts, monitoring engagement, and addressing issues.

3. Security and Privacy:

- a. Encryption of user data and compliance with global privacy laws.

4. Analytics and Reporting:

- a. Track song popularity, user activity, and engagement metrics.

3.0 Differentiating Features of Meloverse

What truly distinguishes Meloverse from other music streaming platforms is its unwavering commitment to creating a personalized, artist-focused user experience. While many platforms provide vast libraries of songs, they often overlook the potential to make the listening experience more meaningful and relevant to each individual listener. Meloverse addresses this gap by centering its platform around users' favorite artists, delivering content that is meticulously curated to resonate with their preferences.

At its core, Meloverse regularly updates users with artist-specific news, merchandise offers, and concert information, allowing them to stay closely connected with their favorite musicians. This real-time artist interaction fosters a level of engagement and loyalty that other platforms frequently neglect, transforming passive listening into an interactive relationship between fans and artists. Users are not just passive consumers; they become active participants in their musical journey, engaging with the artists they admire in meaningful ways.

Furthermore, the points reward system amplifies the user experience by introducing a fun, gamified element to the platform. Users can collect points through regular engagement—whether by listening to music, sharing playlists, or interacting with content—and redeem these points for exclusive perks, such as early access to concert tickets, unique merchandise, or exclusive behind-the-scenes content. This feature transcends the traditional model of simply offering music; it ensures that users feel valued and involved in the vibrant musical universe they cherish, fostering a deeper sense of community and connection. Ultimately, Meloverse transforms music streaming into an engaging experience that celebrates both the artistry of musicians and the passion of their fans.

4.0 Database Tables

1) Users Table

User_ID	Username	Password	Email	Date_Joined	Points_Balance
U0001	Taylorian	iovewebap	taylorian@gmail.com	17-10-2024	10

Description: Represents the registered users of Meloverse. It stores information about the user, such as login details, profile information, and points balance.

2) Artists Table

Artist_ID	Artist_Name	Genre	Bio	Picture
A0001	Ed Sheeran	Pop	.....	.....
A0002	Sabrina Carpenter	Pop	.....	.....
A0003	Taylor Swift	Country Pop	.....	.....

Description: Represents musical artists whose songs and merchandise are available on the platform.

3) Songs Table

Song_ID	Title	Artist_ID	Album_ID	Release_Date	Genre	Duration	File_Path
S0001	Photograph	A0001	B0001	11 May 2015	Folk-Pop	4:19	.....
S0002	Perfect	A0001	B0002	26 September 2017	Pop	4:23	.....
S0003	Love Story	A0003	B0003	15 September 2008	Country Pop	3:55	.....

Description: Contains details about the individual songs available for streaming on Meloverse.

4) Albums Table

Album_ID	Album_Name	Artist_ID	Release_Date	Genre	Cover_Image
B0001	X	A0001	20 June 2014	Pop	.....
B0002	÷	A0001	3 March 2017	Pop	.....
B0003	Fearless	A0003	11 November 2018	Country Pop	.....

Description: Represents music albums that consist of multiple songs.

5) Playlists Table

Playlist_ID	User_ID	Playlist_Name	Date_Created
P0001	U0001	Study Playlist	17-10-2024

Description: Represents playlists created by users.

6) Favourites Artist Table

Favourite_A_ID	User_ID	Artist_ID	Date_Added
FA0001	U0001	A0001	17-10-2024
FA0002	U0001	A0003	17-10-2024

Description: Store the users' favourite artists.

7) Favourites Songs Table

Favourite_S_ID	User_ID	Song_ID	Date_Added
FS0001	U0001	S0001	17-10-2024
FS0002	U0001	S0002	17-10-2024

Description: Store the users' favourite songs.

8) Points Table

Points_ID	User_ID	Points_Earned	Points_Spent	Date_Updated
P0001	U0001	10	-	17-10-2024

Description: Tracks points earned and spent by users for rewards and engagement activities.

9) Merchandise Table

Merch_ID	Artist_ID	Item_Name	Description	Price	Stock_Quantity	Image_Path
M0001	A0001	Blue Monster Hot Water Bottle	.....	RM 140	15	.....
M0002	A0002	Espresso Martini Crewneck	.....	Rm 293	49	.....
M0003	A0003	TTPD Black Embossed Hoodie	.....	RM 323	9	.....

Description: Represents merchandise items related to artists, such as clothing, accessories, or collectibles.

10) Login Table

Login_ID	User_ID	Login_Time	Logout_Time
L0001	U0001	10:15 AM	12:15 PM

Description: Records details of user logins, including timestamps for security and monitoring.

11) Register Table

Register_ID	User_ID	Username	Password	Email	Date_Joined
R0001	U0001	Taylorian	ilovewebap	taylorian@gmail.com	17-10-2024

Description: Manage information regarding user registrations, storing details necessary for login and account management.

12) Admin Table

Admin_ID	Admin_Username	Admin_Password
A0001	iamtheadmin	ilovetaylor

Description: Store information about the platform administrators who manage content, user accounts, and system settings.

5.0 Entity-Relationship Diagram

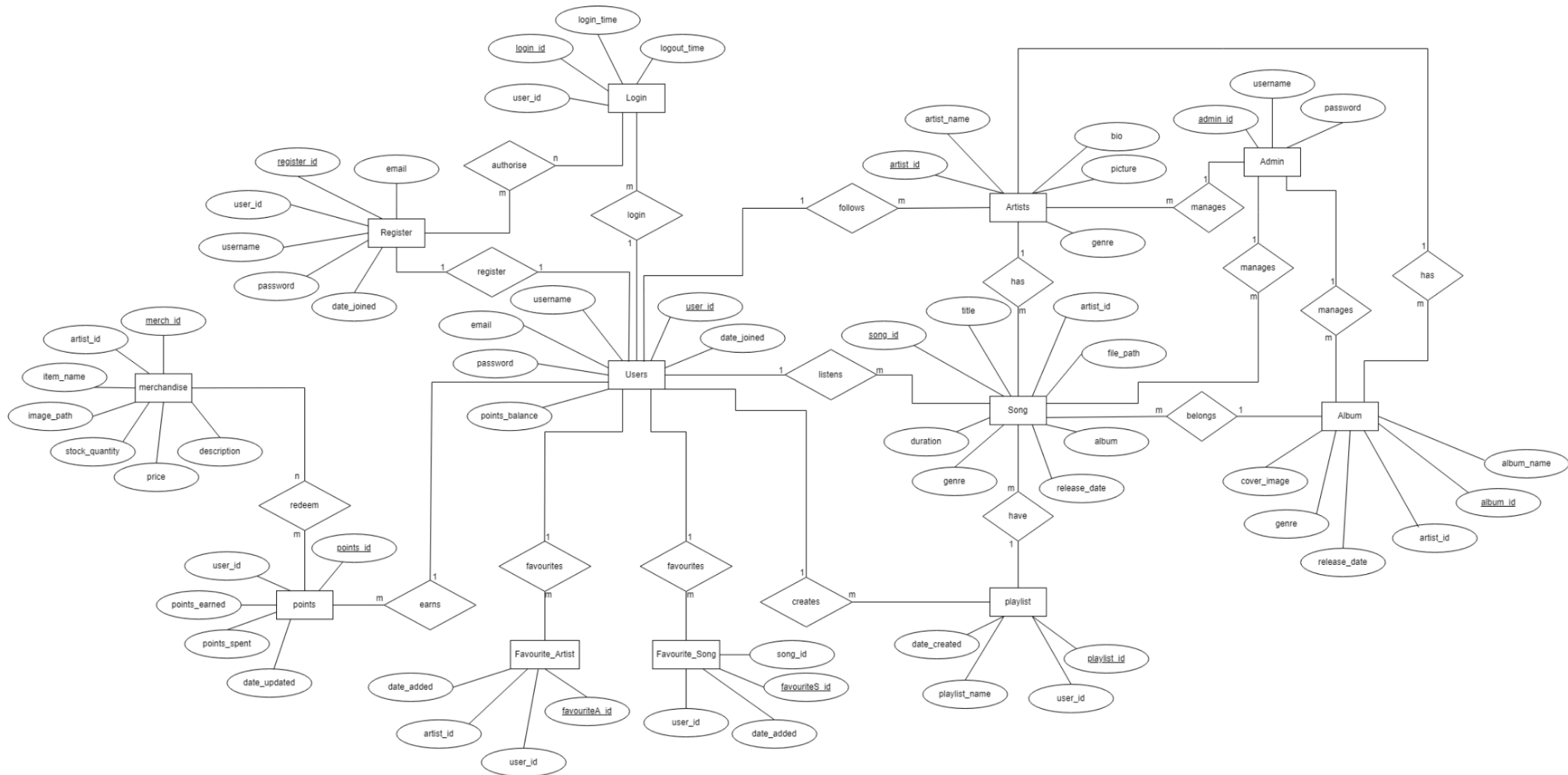


Figure 2. Meloverse ER Diagram

5.1 ER Diagram Explanation

This ER diagram represents a music streaming platform where users can interact with songs, artists, playlists, and merchandise. Users register, log in, and can earn and redeem points for engaging with the platform. They can favorite songs and artists, create playlists, and follow artists. Artists are managed by admins, release songs and albums, and offer merchandise for users to purchase using points. Songs are organized into albums and playlists, while the platform tracks user activities such as listening to songs and earning points. Admins manage artist and album content, ensuring the platform remains well-curated.

5.2 Entities and Their Relationships

1. Users

Attributes: user_id, username, email, password, date_joined, points_balance.

Description: The "Users" table stores information about the users who are registered on the Meloverse platform. It tracks their account details, including username, email, password (securely stored as a hash), the date they joined, and the current balance of reward points.

Relationships:

- **One-to-Many with Playlists:** Each user can create multiple playlists.
- **One-to-Many with Points:** Users can earn and spend points, recorded in the Points table.
- **One-to-Many with Login:** Each user can have multiple login records.
- **One-to-Many with Favourite Songs and Favourite Artists:** Users can have multiple favorite songs and artists.
- **One-to-Many with Register:** Each user has one corresponding registration record.

2. Artists

Attributes: artist_id, artist_name, genre, bio, picture.

Description: The "Artists" table holds details about artists whose songs are available on Meloverse, including their name, genre, biography, and picture.

Relationships:

- **One-to-Many with Songs:** Each artist can have multiple songs associated with them.
- **One-to-Many with Albums:** An artist can have multiple albums.

3. Songs

Attributes: song_id, title, artist_id, album, release_date, genre, duration, file_path.

Description: The "Songs" table contains information about each song, including the title, artist, album, release date, genre, duration, and the file path for the audio file.

Relationships:

- **Many-to-One with Artists:** Each song is performed by a specific artist.
- **Many-to-One with Albums:** Songs can belong to an album.

4. Albums

Attributes: album_id, album_name, artist_id, release_date, genre, cover_image.

Description: The "Albums" table stores details about music albums, including the album name, the associated artist, release date, genre, and cover image.

Relationships:

- **Many-to-One with Artists:** Each album is created by a specific artist.
- **One-to-Many with Songs:** Albums contain multiple songs.

5. Playlists

Attributes: playlist_id, user_id, playlist_name, date_created.

Description: The "Playlists" table manages user-created playlists, containing details such as the playlist name, the user who created it, and the date it was created.

Relationships:

- **Many-to-One with Users:** Each playlist belongs to a specific user.
- **One-to-Many with Songs:** Playlists contain multiple songs.

6. Points

Attributes: points_id, user_id, points_earned, points_spent, date_updated.

Description: The "Points" table tracks the accumulation and spending of points by users, used for the rewards system in Meloverse.

Relationships:

- **Many-to-One with Users:** Each record is associated with a specific user.
- **Many-to-Many with Merchandise:** Many points can redeem many merch.

7. Merchandise

Attributes: merch_id, artist_id, item_name, description, price, stock_quantity, image_path.

Description: The "Merchandise" table stores details about artist-related merchandise, including item name, description, price, stock, and image.

Relationships:

→ **Many-to-Many with Points:** Many points can redeem many merch.

8. Login

Attributes: login_id, user_id, login_time, logout_time.

Description: The "Login" table records login activities of users, capturing login and logout times.

Relationships:

→ **Many-to-One with Users:** Each login record is linked to a specific user.

9. Register

Attributes: register_id, user_id, username, password, email, date_joined.

Description: The "Register" table manages registration details for users, capturing their initial registration information.

Relationships:

→ **One-to-One with Users:** Each user has one registration record.

10. Favourite Songs

Attributes: favouriteS_id, song_id, user_id, date_added.

Description: The "Favourite Songs" table links users to the songs they have marked as favorites.

Relationships:

→ **Many-to-One with Users:** Each favorite record is linked to a user.

→ **Many-to-One with Songs:** Each favorite record is linked to a song.

11. Favourite Artists

Attributes: favouriteA_id, artist_id, user_id, date_added.

Description: The "Favourite Artists" table links users to the artists they have marked as favorites.

Relationships:

- **Many-to-One with Users:** Each favorite record is linked to a user.
- **Many-to-One with Artists:** Each favorite record is linked to an artist.

12. Admin

Attributes: admin_id, username, password.

Description: The "Admin" table stores information about the administrators who manage the Meloverse platform.

Relationships:

- **One-to-Many with Artists:** One admin manages many artists.
- **One-to-Many with Albums:** One admin manages many albums.
- **One-to-Many with Songs:** One admin manages many songs.

6.0 Conclusion

In conclusion, Meloverse is a personalized music streaming platform that puts the user at the center of the experience. With features focused on artist updates, exclusive content, and a reward system, Meloverse offers more than just a place to stream music—it creates a personalized musical journey that reflects each user's preferences. This emphasis on personalization and user engagement sets Meloverse apart from other platforms, providing listeners with a deeper connection to their favorite artists and a richer, more immersive music experience. Through its innovative features and user-focused approach, Meloverse stands poised to redefine the music streaming landscape.

7.0 Prototype

7.1 Landing page

The landing page is where users will be directed to when they open our web application. Here, the design is simplistic to capture the user's attention on the main feature of our web app - a user friendly platform catering towards musical artist enthusiasts.

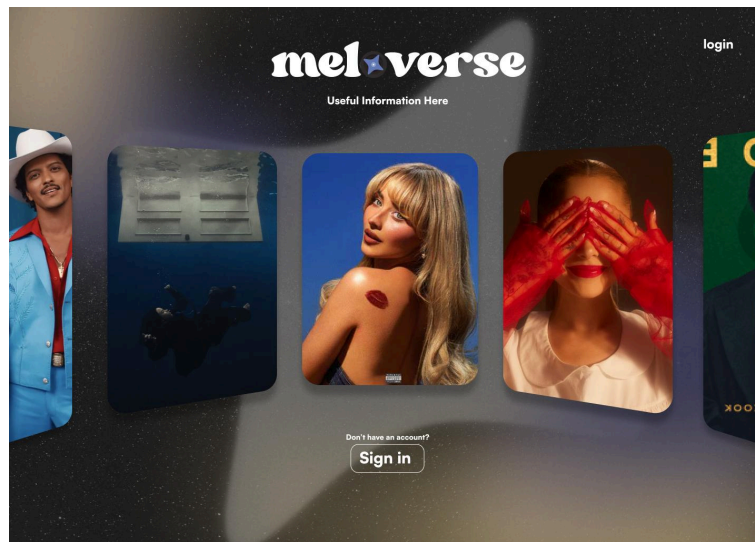


Figure 3. Landing page prototype

7.2 Home page

Here the users will have immediate access to artists, playlist, songs, and other pages via the top menu.

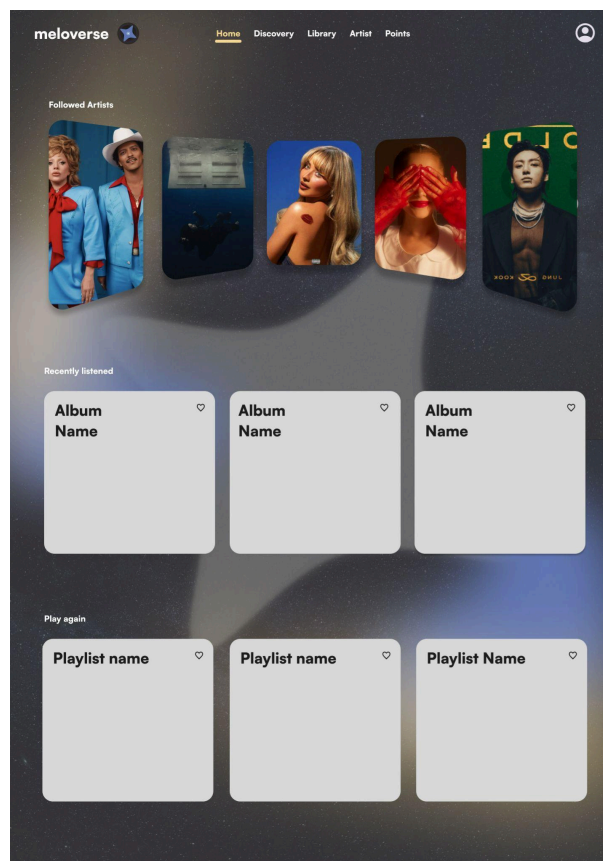


Figure 4. Home page prototype

7.3 Discovery page

This page allows for our users to discover new songs that may be of their interest either by showing similar genres of songs they've listened to, or currently trending music. By clicking on an artist's name, a pop-up with information about the artist will appear.



Figure 5. Discovery page prototype

7.4 Points page

This page displays the current total points garnered by the user as well as possible ways to earn more.

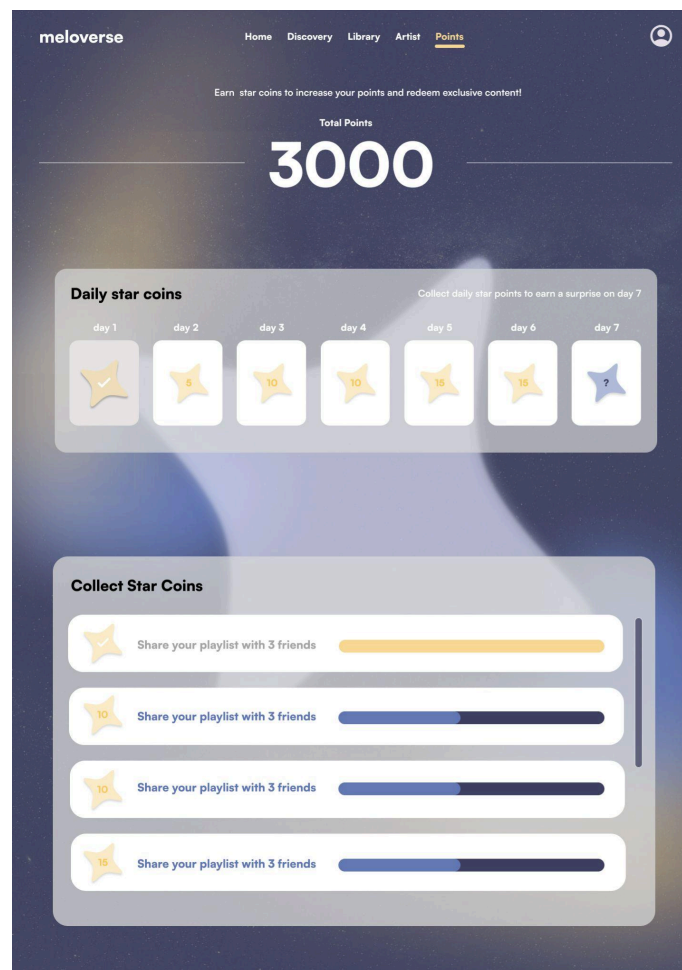


Figure 6. Points page prototype