

SW ENGINEERING CSC648/848

Tinder for Music

Section 1 Team 3

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1. Executive Summary

Tinder For Music

Our modern society is super fast paced and is all about instant gratification. Our daily lives are filled with so many things to do to the point where we find it hard to sit down and enjoy ourselves sometimes. One of the many things we humans have that can help us slow down and relax is music. Even though there are many different types of music out there, all music is designed to make people feel some type of way. Everyone has their own tastes in music. There are tons of genres and subgenres out there that cater to someone's music taste in the world. The problem is that it is seemingly impossible to listen to all the songs in one subgenre let alone one genre. Not only that, but it's almost impossible to find new songs that we haven't heard somewhere already. Our goal for (title) is to help break down this problem by making it easier for the average person to find new and enjoyable music. We want people to find new music with just a swipe; not by endlessly scrolling through song titles and different playlists.

The whole premise for our application, (title), is to make finding new and enjoyable music easier for everyone and to help people create cohesive playlists on the fly, no matter the person's music preference. The main feature of our application is to give the user a snippet of a song in which they can either like or dislike the song by swiping either left or right respectively. Through this the application will slowly know more about the user's music preference and start suggesting songs that the user may like based on that. This simple process helps users save countless hours scrolling past songs they might've heard of already by suggesting new songs that are catered to them in an instant. Another big feature for our application is giving the users the ability to create a cohesive playlist in an instant based on their music preference. This further saves users hundreds of hours by creating a playlist that flows together in an instant rather than having users spend hours upon hours listening to different songs to see if it fits in whatever playlist they are making.

The team behind (title) is a group of motivated and determined individuals. Our team comes from a variety of backgrounds and are willing to go the extra mile for this project. Every individual on this team has had previous experience in creating web applications and are willing to learn anything to help make this project come into fruition.

2. Personas and User Stories

Persona ID: 0001 - Cassandra Louis



Cassandra is a 33 year-old middle school teacher who lives with her husband in a modest one bedroom home. Although she and her husband have been married for 5 years, they do not yet plan to have children. Cassandra believes that her job as a teacher will make it difficult for her to be the best mother she could be for her future children so she and her husband decided to save up money first before starting a family. Cassandra spends a lot of her free time reading books, and recently, she noticed that she felt more relaxed reading her books while playing

calm and soothing music in the background. Cassandra is interested in finding more calming music so that she can enjoy reading even more.

Persona ID: 0002 - Roberto Gonzales



A 27 year-old workaholic who lives alone in a rented apartment. Roberto's boss noticed that Roberto has been looking more stressed and tired lately. Roberto's boss also noticed that Roberto rarely works with headphones or music. Roberto's boss gave Roberto some headphones and suggested that he start listening to music while he works because it may help him feel more relaxed and help time pass. Roberto has never really listened to any music before and does not really know much about the different genres and subgenres of music out there. Roberto doesn't really have the

time to explore and listen to all the different types of music out there because of work and other responsibilities he has.

Persona ID: 0003 - Felix O'Connell



A 16 year-old high school student who lives in a 3 bedroom house with his parents and younger sister. Through constant hard work and dedication, Felix was able to become the star of his high school's track and field team. He is able to hold his own against athletes older than him and consistently place top 3 in various events. Besides his obsession with track and field, Felix is extremely passionate about music. Although he isn't musically gifted, he spends a lot of his time listening to and analyzing what others would consider to be unconventional music. Felix is often ridiculed by his friends because of his belief that mainstream music is not real music. Despite his friends' mockery, he remains steadfast about his belief and hopes that one day, his friends will reach enlightenment and share his opinion.

User Stories

User Story ID #	(persona)	Wants to (functionality or feature)	So that (benefit)	Constraints
1	Cassandra	be able to easily find different songs that are all soothing	She can create a playlist to listen to while reading.	She should be able to choose to only be presented songs that are “soothing” or whatever type she desires. There should be a simple set of options that she can customize to control what kind of new music she’ll see.
2	Roberto	be able to quickly find a variety of songs	He can pinpoint his preference in music.	He should be able to be presented with different songs from various genres. He should then be gradually presented with more songs from the genres or types of music that he is showing preference for.
3	Felix	be able to showcase his favorite songs and playlists	He can show his friends his unique taste	He should be able to choose songs and playlists to display on his profile. He should be able to add descriptions to the songs and playlists and create different sections as a way of organizing and personalizing his profile.

3. Data Definitions

Name	Definition	Usage
Registered_User	A user who has created a unique account, including user email, user ID, etc	User data is stored for login, user ID will be displayed
Admin	Admin account for use by developers	For developers to make various changes
User Preferences	The users specific preferences for song related values such as tempo, key, danceability, etc. changes as more song data is input	Will be used in determining users preferred type of songs to suggest
Song	Specific song with values such as tempo, key, danceability, etc.	Each song has a song id along with various values that will be used to recommend songs for the user to interact with

4. Initial list of functional requirements

User Log-In Functions

- 1) A user shall create an account using a unique email and a password (high priority).
- 2) A user shall login to an account using an email and a password (high priority).
- 3) A user shall login using a Spotify account via Spotify Authorization (low priority).
- 4) A registered user shall logout from an account (high priority).

User Main In-App Functions

- 5) A registered user shall be presented with a set of optional questions to determine their musical interest (high priority).
- 6) A registered user shall be presented with a list of song suggestions based on their musical interest, or an arbitrary list of song suggestions if their musical interest is unknown (high priority).
- 7) A registered user's musical interest shall change based on their chosen songs (high priority).

- 8) A registered user shall be able to apply filters to suggested songs such as genre, tempo, danceability, etc. (high priority).
- 9) A registered user shall be able to play a song (high priority).
- 10) A registered user shall be able to add a song to a playlist (medium priority).
- 11) A registered user shall be able to skip to the next song (medium priority).
- 12) A registered user shall be able to return to the previous song (medium priority).
- 13) A registered user shall be able to pause and play a song (medium priority).
- 14) A registered user shall be able to share a song (medium priority).
- 15) A registered user shall be able to replay a song (medium priority).

User Profile Customizability

- 16) A registered user shall be able to display songs and playlists on their profile (low priority).
- 17) A registered user shall be able to create different customizable sections on their profile (low priority).

List of non-functional requirements

- 1) (availability) Application shall be available for normal use for 24 hours everyday.
- 2) (compatibility) Application shall be compatible and usable on desktop browsers including Chrome, Mozilla Firefox and Microsoft Edge.
- 3) (development requirement) Data shall be stored in NoSQL technology on Amazon AWS deployment server.
- 4) (development requirement) The code base should be well maintained in the team's github repository.
- 5) (usability) Application shall be able to accept keyboard and mouse inputs.
- 6) (usability) Application shall be able to access and accept input from the device's microphone (IF IMPLEMENTING SHAZAM-LIKE FEATURE).
- 7) (performance) Each page should load within 1 second.
- 8) (performance) Searching should finish within 1 second.
- 9) (performance) Loading and playing a song should finish within 1 second.

- 10) (security) The users' username and passwords shall be encrypted with AES encryption method.
- 11) (storage space) Users shall be able to hold up to 1,000 songs in a single playlist.
- 12) (storage space) Users shall be able to hold up to 1,000 playlists in a single account.

Competitive Analysis

Competitor	Us
Discz <ul style="list-style-type: none"> • Music Discovery with swipe left & right • Auto add to playlist • Takes a long time (if ever) for it to find your music taste • IOS only 	<ul style="list-style-type: none"> • Uses more of spotify's audio features • Onboarding survey • Anonymously share playlists • Focuses on more niche music • Multi Platform
Spotify <ul style="list-style-type: none"> • Automatic daily and weekly playlists • Uses all of your listening history • You have to listen to the entire playlist 	<ul style="list-style-type: none"> • Fast to find new music (you only have to listen to a short part of the song)
Pandora <ul style="list-style-type: none"> • Recommends songs to create a playlist based on thumbs up and down. Will use the artists and the songs that were liked to recommend similar songs. • Songs are classified by musicians and machine learning before it gets added to the Pandora database. • Playlist swapping (web forum) 	<ul style="list-style-type: none"> • Recommends based on what other people with similar tastes like • Able to add more specifications to recommendations • Sharing playlists will be built into the app

1. High-level system requirements

<u>Host</u>	<u>AWS Amplify</u>
<u>OS</u>	<u>NA</u>
<u>Database</u>	<u>Document DB</u>
<u>Web Server</u>	<u>NA</u>
<u>Front End Framework</u>	<u>Next.js</u>
<u>Front End Library</u>	<u>React JS</u>
<u>Back end Framework</u>	<u>Feather JS</u>
<u>Backend</u>	<u>Node JS</u>
<u>UI</u>	<u>Figma</u>
<u>APIs</u>	<u>Spotify API, Mailgun</u>
<u>IDE</u>	<u>VS Code & Webstorm</u>

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