

Music Playlist Generator

Due: October 18th, 2024

GitHub Repo: <https://github.com/CMPT-276-FALL-2024/project-22-vines>

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Overview of Project

Origin of idea and its importance

While in search for a project that we can make as a group, we came to a realization that we all listen to music very often and we were able to agree upon the fact that it is sometimes quite difficult to find new music to our liking. Therefore, we decided to create a program that creates music playlist according to the request of the user. This allows everyone with a similar problem to be able to find more music that they could add to their list.

User Groups/Personas:

1. Music Enthusiasts - Brandon / Roi

Name - Delilah

Age - 27

Education - Bachelors of Education

Occupation - Middle School Teacher

Household Family - Fiancé and a cat

Background

- Lives in the city with all the noise around her apartment.
- Learned how to play different musical instruments from a young age and trained quite a good ear & sense of rhythm.
- Always spends time at her work helping with after-school activities or marking assignments.

Characteristics

- Patient with her students but relies on them to keep the classroom clean.
- Always listening to music she enjoys outside of school and trying to find a new song in the genres she likes.
- Only listens to about 5 songs at a time on repeat. The songs change every month or so.
- Likes to play her favorite song to her students during the reading time

Goals

- Wants to frequently find new music from the genres she enjoys.
- Having gone through all of the popular playlists on Apple music, she wants to have new and quick ways of generating new playlists from specific genres
- Find a calm peaceful music to play for the students

Challenges

- Due to her busy life, she does not have enough time to find new music that would fill her need.
- She struggles to find a perfect music that would fit the taste of her students.

Behaviors

- Has a very structured lifestyle, everything is planned out and she does not like things being out of plan.
- Very Student focused, would do anything to allow her students to have the greatest time

Quotes and Motivations

- Quote: "Music and my Students are my favorite things, giving me motivation and energy everyday!"
- Motivation: Students, New music, fixed schedule

2. Workout Enthusiasts - Roi

Name: Brad Bart

Age: 22

Education: SFU - CS major

Occupation: Student

Household Family: none

Background:

- Lives on campus / uses the campus gym which is always filled with people and loud
- Listens to Hardcore or Phonk remixes to give himself more energy during the workout session
- Always has a headset on playing music everywhere he goes.
- Trying to reach 250 lbs on the bench but have been stuck on 230 lbs
- Got bored of the current playlist that he listens to (giving him no extra energy)

Characteristics:

- Very quiet in public with headset on everywhere
- Only cares about muscle gains, school comes second
- Eats only high-protein food
- Does not like interacting with other people outside of the gym

Goals:

- Find a new playlist that feels fresh (gets tired of music very quickly due to its continuous repetition)
- Find a playlist that is filled with high-tense music giving him energy during the workout
- Find a playlist that is fast but low tensity for running that does not tire him out.

Challenges:

- Need to find music that has a similar intensity as his workout/running
- Need to find new music that feels fresh and energetic

Behaviors:

- Often finds a new song and listens on repeat for the whole gym session and gets bored of it after
- Searches for the right song before every set
- Has huge mood swings depending on how the workout that day went

Quotes and Motivations:

- Quote: "Either I do my final rep or I die under it."
- Motivations: Protein, Big Biceps, Workout

3. Event Organizers - Greg

Name: Sarah Mitchell

Age: 35

Education: Bachelor's Degree in Human Resource Management

Occupation: Human Resources Manager

Family: Married, with two children (ages 2 and 4)

Background:

- Has been working as an HR Manager for over 10 years, where she handles recruiting, employee relations, and team development.
- Sarah organizes office parties, company outings, and other social events a few times a year. She enjoys these events as a way to boost employee morale but doesn't want to spend too much time on them, as her primary focus remains on HR duties.
- Busy with work and family, doesn't have a lot of time for other activities.

Characteristics:

- Known for her organizational skills, both in her HR work and in event planning. She values productivity tools that help her get things done quickly and efficiently.
- As an HR manager, she cares about the employee experience and sees company events as an opportunity to bring the team together.
- She prefers using apps that can help her find the right music for different situations without too much effort.

Goals:

- Finding a music app that can quickly generate playlists for staff events
- Avoid spending too much time on creating or searching for playlists.
- Keeping staff engaged and enjoying the events, which means finding the right music that appeals to a diverse group of employees.

Challenges:

- Event planning is only a small part of her job, so she doesn't have the luxury of spending hours fine-tuning a music playlist for every event.
- Finding music that appeals to a diverse group of employees
- Wants to avoid repetitive or predictable music at events, but also needs the music to be appropriate for a professional setting.

Behaviors:

- Sarah organizes events a few times a year, such as holiday parties, BBQs, and birthdays, and music is an essential element of these gatherings.
- She listens to music while working to stay focused, often relying on pre-made playlists
- Sarah frequently uses apps to streamline tasks like playlist generation, relying on quick and intuitive solutions that don't require much customization.

Quotes & Motivations:

- "I want the music to match the vibe of the event, but I don't have time to create a playlist from scratch."
- "If the app can give me a good playlist for a staff event, that's one less thing I need to worry about."

4. Students - Roi

Name: Kiel Meisel

Age: 18

Education: First-year SFU - Computer Engineering major

Occupation: Student

Household Family: None

Background:

- Lives on the school campus
- First time living by himself, not much experience in taking care of himself
- Needs a playlist that would allow him to focus on studying and assignments

Characteristics:

- Very active and outgoing.
- Cannot focus when with other people
- Will go out of his way to talk to new people

Goals:

- Find a playlist that would allow him to focus (depending on what he is working on)
- Fast rapid playlist for assignments that requires speedy work
- Slow calm playlist for studying

Challenges:

- Because of Extrovert characteristic, cannot focus on studying / doing assignments
- Sometimes cannot finish assignment fast enough due to quietness (no rush)

Behaviors:

- Always procrastinate until the last day
- Underestimates the study required for exams

Quotes and Motivations:

- Quotes: "Will I finish this semester or will it finish me? Tune in later to find out"
- Motivation: New Friends / connections, good grades

5. Travelers - Greg

Name: Shawn Anderson

Age: 38

Education: Bachelor's in Business Administration

Occupation: Sales Director

Family: Married, no kids

Background:

- Spends a significant amount of time on the road, traveling between client meetings across the province.
- Often works from his car, making calls and listening to podcasts or audiobooks about sales techniques, leadership, and market trends.
- Has been in the sales industry for over 15 years and knows the importance of staying ahead in a competitive market.

Characteristics:

- Time management is crucial to him, and he leverages every moment on the road to learn or stay productive.
- Regularly uses apps for navigation, communication, and task management.
- Prefers multitasking to make the most of his commute and stay ahead of work demands.

Goals:

- Stay updated on industry trends while driving.
- Maximize productivity during long drives.
- Highly motivated to improve his sales performance and leadership skills.

Challenges:

- Finding the right balance between staying productive and not overloading himself with work while on the road.
- Managing distractions while driving, such as phone notifications, incoming calls, and navigating unfamiliar roads.
- Limited interaction with apps due to safety and driving regulations.

Behaviors:

- Usually sets up his content before hitting the road to avoid manual interactions while driving.
- Makes playlists of educational podcasts and audiobooks for long drives.
- Prefers short, digestible content or music during shorter drives but listens to longer audiobooks or podcasts on longer trips

Quotes & Motivations:

- "If I'm on the road, I want to make that time count for something."
- Wants to be promoted to VP of sales so he can stay closer to home

6. Casual Listeners - Greg

Name: Mike Thompson

Age: 32

Education: High School Diploma

Occupation: Construction Worker

Family: Single

Background:

- Works as a construction worker and spends his days doing physically demanding work, often outdoors.
- Isn't overly tech-savvy, but he uses his smartphone regularly for music, navigation, and social media.
- Lives alone, takes the bus to work

Characteristics:

- Values simplicity and efficiency. Doesn't want to spend time fiddling with apps, just wants good music that suits his activity.
- While he enjoys listening to music, he's not interested in keeping up with the latest trends or manually curating playlists.
- Usually is not allowed to wear headphones at work, has to play music with a speaker

Goals:

- Wants music that fits his daily life—energetic music for the mornings and work, relaxing tunes for after work
- Needs radio-friendly music that can be played at work that everyone nearby can listen to.
- Wants an app that is easy to use, so he can just push a button and go

Challenges:

- Easily confused and frustrated by complicated user interfaces
- Busy schedule leaves little time for manually selecting or organizing music.

- Needs popular music during the day that the rest of his crew won't complain about.

Behaviors:

- Mike listens to music during his daily activities, such as commuting, running errands, or doing housework
- Often puts on the music at work
- Listens to a familiar rotation of rock, country, and pop, though enjoys discovering new tracks as long as they align with his taste.

Quotes & Motivations:

- Wants an easy-to-use interface with simple genre selection
- "If the app can give me the right music for the moment, I'm all set."

APIs, Features and User Stories

Greg - AudioMotion (<https://github.com/hvianna/audioMotion-analyzer>)

1. Create a vibrant visualization that interacts with the music

As a music lover, I want engaging visuals to accompany my music, enhancing the overall listening experience.

2. Change visualizer color gradient

As someone who appreciates vibrant design, I want the ability to customize colors to reflect my personal preferences.

3. Change between radial (round) and flat visualizer

As someone who appreciates artistic beauty, I want to be able to switch between different kinds of visuals to create a more immersive and novel experience

Murat - Napster

1. Song clip retrieval/playback

As a music enthusiast I want to be able to hear snippets of songs I'm unfamiliar with so I can get a feeling for them

2. Retrieve songs based on data

As a workout enthusiast I want to easily be able to find songs with high BPM or match genres that fit my workout.

3. Retrieve songs based on similarity to another song

As an event organizer I want to be able to create a playlist of similar songs to the perfect song that fits my event.

Roi - Spotify

1. Search for Music and its details

As a music listener, I want to know the details such as the artist or the album of the music that I enjoy so that I can find more music that I like from the same album or the artist.

2. Control / interact with the playback

As a control freak, I want to be able to control the music that is playing so that I can skip, repeat, back etc... to have more accessibility over the music that is playing.

3. Manage personal library (create or add to your playlist)

As an organized playlist creator, I want to create a new playlist or add music to a previously created playlist so that I can always save any individual music or the whole playlist that I enjoy.

Brandon - Genius

1. Display Song Lyrics

As an avid listener of fast-paced lyrical music, I want to be able to understand the words so I can sing along.

2. Display Song Data

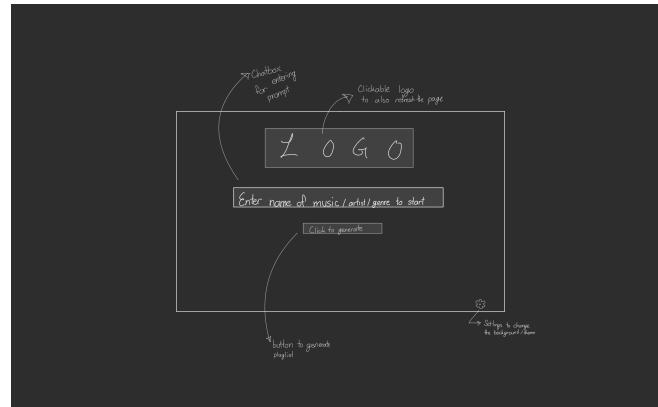
As a consumer who wants more of my favourite songs, I want to know more about them (year it was released, artist, genre) so I can listen to more songs like them.

3. Translate Song Lyrics

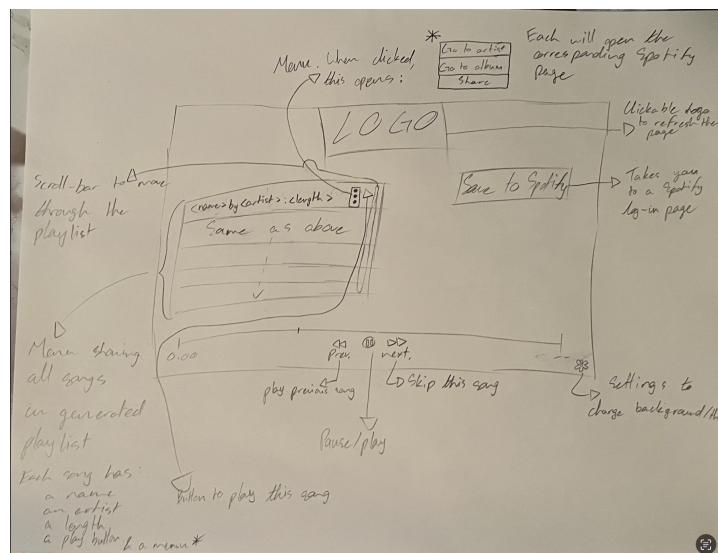
As a non-native English speaker, I want to understand what my favourite English songs are saying so I can enjoy them to a better extent.

Storyboard

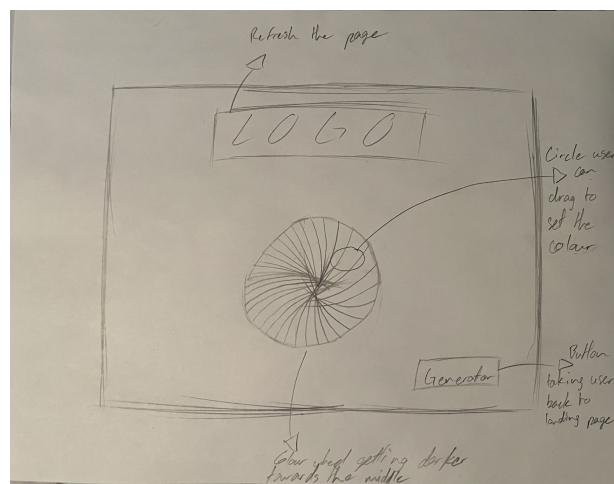
Landing Page:



Playback page (shown after generating a playlist):



Settings page (accessed via the gear in the bottom right of both pages above):



Chosen Front-End Technology Stack

- **HTML**
- **CSS**
- **JavaScript**
 - **React**

1. Rationale

For our web app, we chose HTML, CSS, JavaScript, and React because they offer a flexible and robust foundation for front-end development. HTML and CSS provide structure and styling, JavaScript enables interactivity and API integration. React allows us to build dynamic, reusable UI components and efficiently manage the state of the application.