

# PROJECT PROPOSAL

## *Spaceify*

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## Project Abstract

Spaceify is inspired by the many web applications like Receiptify, Instafest, Icebergify, etc. that reimagine new ways to visualize Spotify's listening data. Spaceify will display a user's top tracks in the past month, 6 months, and all-time in a new unique fashion. The user will be able to visually view their listening history in an aesthetic and fun manner with a planet theme and be able to share their Spotify space with their friends.

## Vision

For Spotify users who are interested in knowing their top listened to songs, Spaceify is a web application that displays a user's top tracks in the past month, 6 months, and all-time in a planet format, with the size of planets representing their frequency of being played. Unlike other Spotify summary services like Receiptify or Icebergify that have more complicated and detailed information displays, our product will display a user's Spotify top tracks in a very simple manner with a planet-themed scatterplot but will allow users to click on the planets if they want more detailed information.

## Personas

### Emma, a highschooler

Emma, age 16, is a high school student. She uses Spotify to listen to music, and she listens to a variety of genres and artists. At school, she meets a new friend. This new friend asked Emma if she could recommend her favorite songs since this friend has never used Spotify before and rarely listened to music. Emma wants to impress her new friend by providing song recommendations. However, due to her diverse taste in music, she cannot think of her favorite songs off the top of her head. Emma would be highly likely to use Spaceify in a situation like this because it will let her know what her most listened to songs are and how recently she listened to them. Additionally, the user-friendly graphic makes it easy for Emma and her new friend to interpret what Emma listened to the most based on how long those song planets are displayed.

### Isabel, a college student

Isabel, age 21, is a college student in Philadelphia. She is a music tech major and has a band that plays at local house shows. Isabel meets new people and bands frequently and discovers new music every day. Recently, Isabel has been branching out and listening to different genres of music and artists. Since then, Isabel has been wanting to see her music tastes from the past few months and see a summary of her favorite artists and songs. Isabel would be interested in using Spaceify as it provides an overview of her favorite artists and songs over a period of time. The space-like graphics allow Isabel to easily view her favorite songs based on the graphics of the planets.

### Alex, Data analytics, recently graduated.

Alex, age 24, is a recent college graduate working his first job in data analytics. Alex loves music and is a long-time Spotify user who often finds himself exploring new genres and artists based on his weekly recommendations. Besides just listening, Alex enjoys tracking his music data and

discovering patterns in his listening habits. He's interested in seeing how his top songs and artists vary over time, and he likes to compare his current music interests with those of previous months. Alex would be excited to use Spaceify because of its unique data visualization format. The planet-based graphic representation allows him to easily observe his listening patterns at a glance, with planet sizes helping him quickly identify his most-played songs and artists. This visual summary would be appealing for Alex since it's both fun and informative, aligning with his love for data and analytics in a highly aesthetic way. The ability to share this summary with friends and see trends over time also adds value for Alex, as it gives him insight into his evolving musical tastes and provides a way to share that journey with others.

### **Walker, Graphic Designer**

Walker is 30-year-old Graphic Designer living in New York City who is always looking for new inspiration for his creative projects. Being visually driven and tech savvy, he is drawn towards modern concepts and the fast-paced advance of technology. Walker uses his unique art style to design logos and homepages for small companies and start-ups. In addition to his passion for design, Walker thoroughly enjoys listening to music, especially while he is creating. Spotify is his favorite music streaming service due to the ability to keep track of his favorite artists, playlists, and more.

Walker would enjoy Spaceify because of its creative and innovative way of visualizing his music history/data. Since Walker has an eye for design, the idea of planet sizes indicating how much he listens to each artist is a very compelling idea. Walker enjoys discussing music with his friends, so being able to compare listening history would work for a good conversation-starter. Going beyond a traditional list or graph, Spaceify allows Walker to creatively view and understand his listening patterns.

### **Jim, a highschooler**

Jim is a 17 year old high school student. He lives in the suburbs. During school, he is very social and has a lot of friends. He likes to listen to music in between classes, and sometimes even in class. After school, he usually has practice for his football team. He is friends with the other kids on the football team who like similar music. Jim also uses social media a lot, mainly Instagram and Snapchat.

Because Jim enjoys listening to music and talking to others about it, he is always looking for ways to share this passion and find people with similar interests. He sometimes posts his yearly Spotify recap on his social media and enjoys the attention it receives. Jim is interested in using Spaceify to share his music interests on social media in a fun and satisfying way.

### **John, uber driver**

John is a 32-year-old uber driver who lives in Miami. He has been looking for new ways to improve the ride experience for customers, so he purchased a Spotify account to play music in the car. John does not have a lot of musical knowledge, so he decided to use a recommended playlist that he

found on the Spotify homepage. Over time, he realized that many people did not like this playlist and asked for specific songs or artists that they liked. John wanted to create a new playlist that matched the music taste of the riders better, but he did not know where to start. He is not great with technology and is having trouble thinking of songs to add. Spaceify would be a great product for John, as it will visually display what his customers' favorite artists and songs are.

### **David, tech manager**

David, a 45-year-old mid-level manager in a tech consulting firm in Washington, D.C., has spent over two decades building a successful career in the corporate world. With a diverse background working with various organizations, he understands the importance of fostering relationships and team dynamics. As Thanksgiving approaches, he hosts a Friendsgiving for his team, which includes several new members. Knowing that music is vital in creating a warm and inviting atmosphere, David turns to Spaceify, an innovative web application that visualizes Spotify listening data in a fun, planet-themed format. This allows him to explore his top tracks over the past month, six months, and all-time favorites in an aesthetic and engaging way.

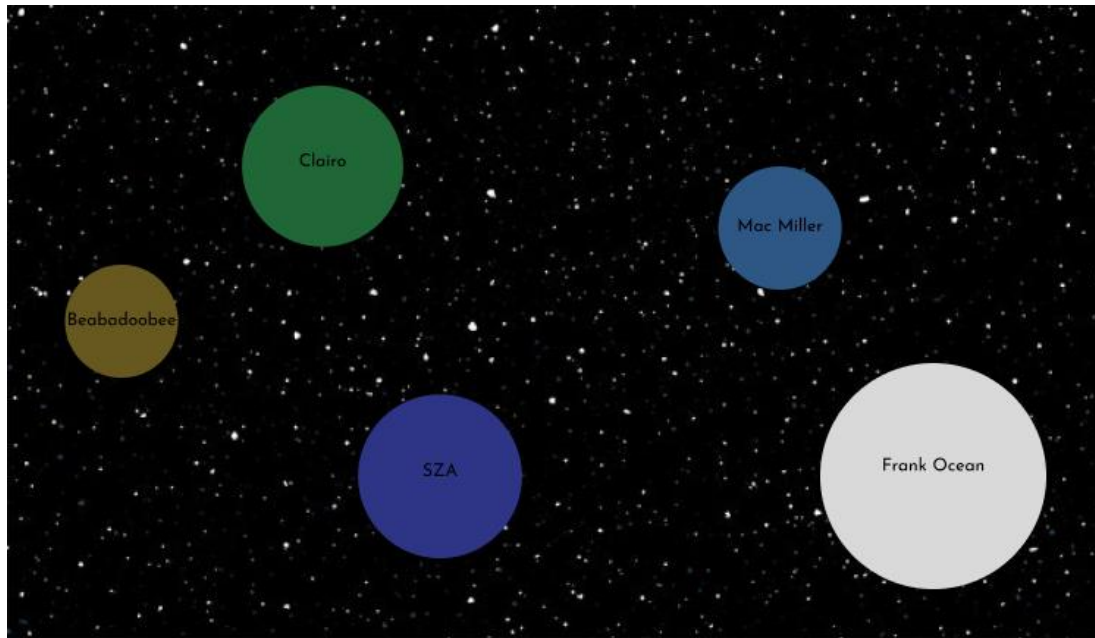
Excited about Spaceify's collaborative features, David invites his coworkers to share their music preferences, enabling him to curate a playlist that caters to everyone's tastes. As he discovers new songs and blends them with familiar favorites, the playlist becomes a central part of the gathering, sparking conversations and creating connections among his guests. With each planet representing a song's popularity, David not only enhances the Friendsgiving experience but also reinforces his commitment to building a cohesive team culture. Ultimately, Spaceify transforms the evening into a memorable celebration, fostering laughter, and bonding.

## **Conceptual Design**

We aim to create an interactive, aesthetic, space-themed scatter plot that visualizes a Spotify user's top tracks over different durations. In terms of hardware, it will run on any machine with moderate specs. Linux systems would likely be ideal for development, though Windows or Mac can be used.

The application will most likely be running on Node.js, and we will use several programming languages throughout the process. This will include HTML & CSS, Javascript, and Python. Flask may be used for user authentication and React for building UI. We may also use D3.js or plotly for data visualization. We will need the Spotify Web API for fetching data.

Figma prototype:



## Proof of Concept

<https://github.com/cis3296f24/Spaceify>

This repository includes code using the same programming language, framework, libraries, and APIs needed to demonstrate the tools are going to work together. The code does not need to be extensive, but it needs to compile and run. It is ok if the code is straight from a tutorial as long it is compiling and running.

In this document or a readme file in the repository, include instructions on how to compile and run the code. Specify the operating system version and the version of the compiler to used build the project.

If your project is as contribution to an open source, you need to show you can modify, compile and run the source code of the project.

## Background

In this project, I will retrieve data from Spotify on a user's top tracks over different time periods. I will visualize the tracks using a planet-themed scatter plot, where each planet represents a song/artist. The size will depend on how many times the track has been played and I will use different colors and textures for different artists and genres. The distance of the planets could also represent something like how recent tracks are (x-axis could be time). I will attempt to add simple animations to the planets where they slowly rotate and also where if you hover over a planet, it will display additional information about the song. I will create a space background that will possibly be animated and attempt to add music.

Similar projects I am inspired by include:

Receiptify: <https://receiptify.herokuapp.com/>

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<https://github.com/michellexliu/receiptify?tab=readme-ov-file>

Instafest: <https://www.instafest.app/>

Ngen: <https://ngenart.com/spotify>

## Required Resources

Will need to apply in the Spotify for Developers Dashboard in order to get own credentials.  
I also will need to install node.js.

## Feature list:

### Constellation Playlists

- **Feature Description:** Spaceify could create “constellations” by linking planets (songs) based on specific criteria. For instance, songs by the same artist or genre could be connected in star-like patterns, creating constellations within the space-themed scatter plot.
- **Dynamic Playlist Generation:** Each constellation could be a themed playlist, generated dynamically based on the criteria. Users could save and export these playlists to their Spotify account.
- **Visual Highlights:** When users hover over or select a constellation, it could illuminate, showing the connection between songs. Constellations could also be generated for:
  - **Moods:** Link songs that match a specific vibe (e.g., upbeat, chill).
  - **Genres:** Group songs by genre, showing users how often they listen to each genre.
  - **Time Periods:** Create constellations for each time period (last month, six months, all time), so users can see how their favorites have shifted.

This feature would add an extra layer of interactivity and customization, as users could discover new patterns in their music tastes while creating shareable playlists from Spaceify's unique visualizations.

### Planet Display

- **Feature Description:** The application will display the planets with different colors, textures, and sizes based on the users' listening frequency of artists or songs.
- The more plays a song/artist has, the bigger the planet will be.
- Recently played tracks will be displayed closer to the x-axis.

### Planet Animation

- Be able to make the planets rotate.
- Hovering over a planet displays additional information about the song/artist.

## **Connect with Others**

- For this feature, users can connect with friends and family to see what they've been listening to. They can use this feature to discover new music, connect with friends, and make collab playlist stations.