



Amplify

Your premier Spotify companion

Developed by Jake Andrus, Zora Watters, Max Shetterly,
Parker Morris, and Ella Sarder

248,000,000

Spotify users

Spotify (2019) Retrieved from <https://newsroom.spotify.com/company-info/>

Meet Amplify!

What is it?

Amplify is a companion app designed to connect to your Spotify account and provide you with music visualization of your songs, data metrics about your library, and more!

Who is it for?

Anyone with a Spotify account interested in expanding their Spotify experience with data-driven metrics and dynamic track animations!

Project Management

Agile Development

MAPS



Agile Development

- ⊗ Teams
 - ⊙ Animation: Zora and Ella
 - ⊙ Back-End: Jake and Parker
 - ⊙ Web Player/Front-End: Max



Agile

We utilized

1

Kanban Board - Miro

We created a kanban board through Miro that was accessible to all members to ensure everyone was up to date on the current goals.

2

Weekly meetings

We held weekly, 2 hour long meetings on Thursdays to talk through our progress, our future ideas and goals, and complete our milestones together

3

Constant communication

We created a group chat through which we keep in daily contact and got feedback and help from other group members.

Tools

Version Control: Github 5/5

Project Tracking: Miro 5/5

Deployment: Amazon AWS 3/5

Framework: Node.js 5/5

Database: MongoDB 4/5

IDE: Atom, MobaXterm 5/5

Methodology: Agile 5/5



Team Challenges

Version Control Issues

- We often had merge conflicts within our code that were challenging to fix and frequently broke our code.

Separation of Teams

- Because we were split into different teams, it was sometimes unclear where others were in their progress.

Back End

APIs and stuff

Back End General Overview

- ⊗ We used an EC2 instance in AWS
- ⊗ Saving user data (passwords, username to our site as well as Spotify login)
- ⊗ We used the Spotify API, Spotify Player, Google charts, (I am at a loss for rest of software used)

AWS

- ⊗ Using an EC2 instance, micro build
- ⊗ Connected Elastic IP for consistency between system resets

Node and Mongo

- ⊗ Node server using express to serve files
- ⊗ Routing provided for Spotify Authentication and API calls
- ⊗ Routing also provided for user login and registration
- ⊗ Mongodb used to store and authenticate users

Back End Challenges

Setting up EC2 instance

- ⊗ SSHing into the server.
- ⊗ Setting up Filezilla to transfer files to the server.

Spotify API Request

- ⊗ Spotify not quite giving us the data the way we expected
- ⊗ Some data could only be gathered real time
- ⊗ Authentication and dealing with tokens



Front End

Front End General Overview

- ⊗ Pages made with HTML, CSS, Bootstrap
- ⊗ Used Node to connect to MongoDB
- ⊗ Used Angular.js to organize and manipulate components
 - ⊙ Integrated player/visualizer

Front End Challenges

Angular Implementation

- ⊗ It was difficult changing and maintaining the functionality of certain code as we transitioned into an angular framework

Animations

ThreeJS

Animations

- ⊗ Learned and utilized ThreeJS, a JavaScript library and API used for animating 3D graphics on a web browser.
- ⊗ Song visualization animations are dynamic and responsive to the track currently playing through the application.

Animation Features

- ⊗ Orbit speed controlled by section tempo.
- ⊗ Color of particles controlled by 'danceability' and 'acousticness' measured against 'valence' and 'energy'.
- ⊗ Color of background controlled by 'energy' and 'valence'.
- ⊗ Opacity of particles controlled by song sections
- ⊗ Size of particles controlled by overall song tempo.

Animation Challenges

Independently Learning ThreeJS

- ThreeJS is a complicated library and is unlike much of our previous coding experience.

Vague Documentation and Sparse Examples

- Learning was a particular challenge given the lack of simple explanations and examples of ThreeJS topics.

THANK YOU

Developers

- Jake Andrus

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- Zora Watters

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- Ella Sarder

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