SingleStream

Team 8 - 4.24.2017

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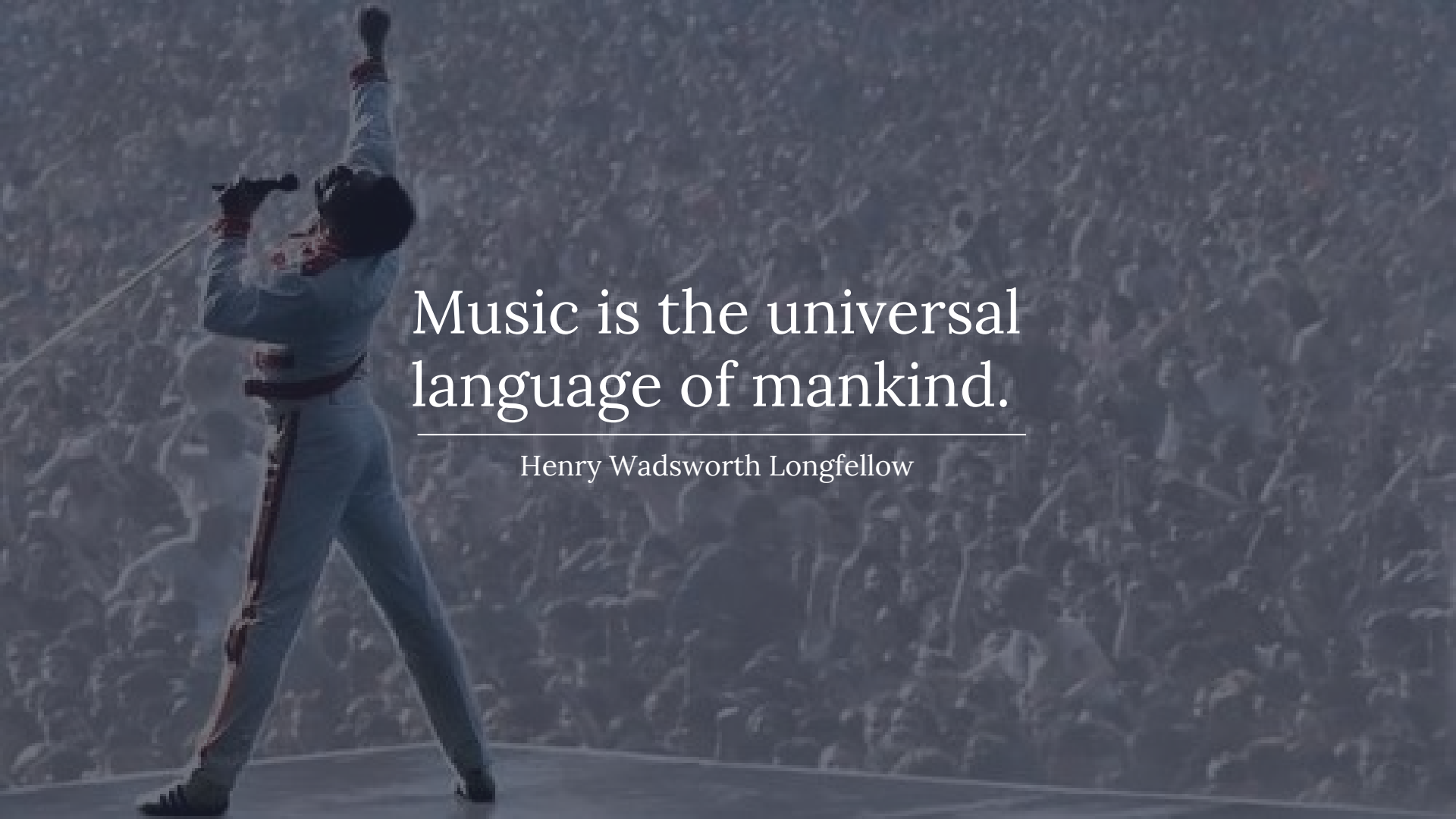
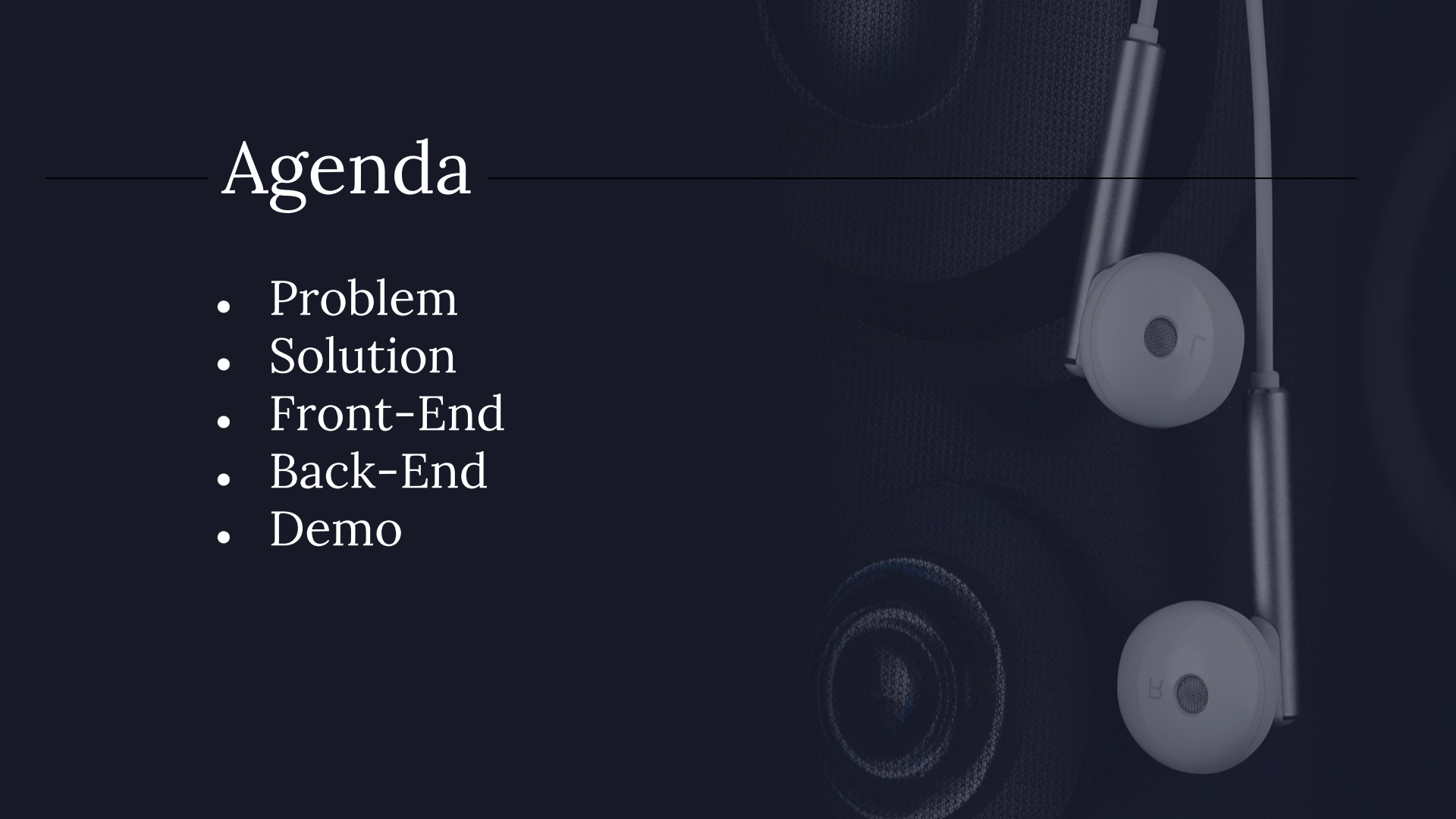

Music is the universal language of mankind.
Henry Wadsworth Longfellow

SINGLESTREAM
MAKE STREAMING GREAT AGAIN!

Agenda

- Problem
- Solution
- Front-End
- Back-End
- Demo



The Problem

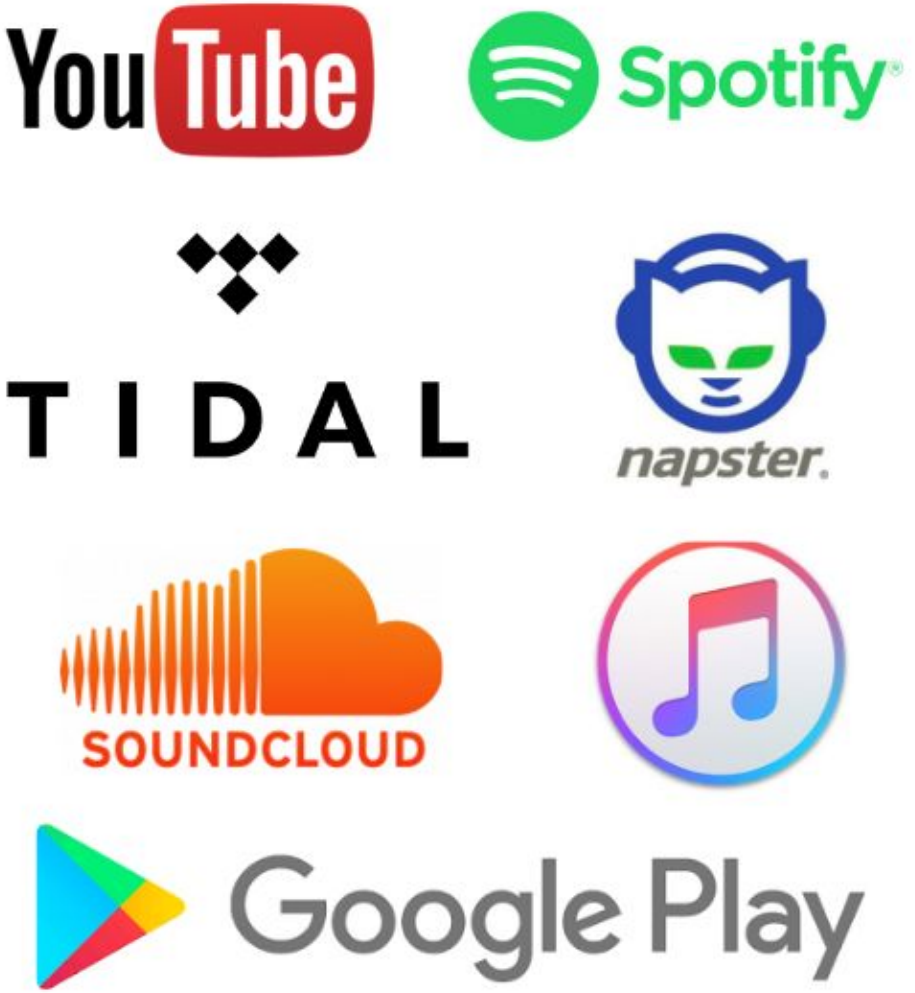
Being a fan of a wide variety of music can be a pain. Depending on the music player of your choice, not all of your artists may be available.

Global Streaming Market

- $9.7 Billion Global Market by 2022
- Spotify, Apple Music, Pandora, SoundCloud
- Gained over a Billion users from 2011-2015

Current Options

- Different music options
- Different media formats
- Different Platforms



The Solution

- A platform that unifies the content of each music streaming platform
  - Playlists can feature tracks from all supported streaming services
- Combines social networking with data visualization as new means to explore friends' playlist tracks, artists

How We Did It

Users/Stakeholders

- Those who:
  - Belong to subscription/cloud-based music services such as Spotify, Napster, etc.
  - Enjoy sharing music with their friends
  - Listen to media on non-mainstream music/media services (YouTube)
  - Want to explore new music

Functional Requirements

- User profiles (biographies, semantic playlist tags)
- Custom Playlists (all supported services)
- Auto-play
- Friends -> “Followers”/”Followings”
- Clone Playlists
- Music Data Visualization
- Responsive, Clean Design

Agile Project Plan

Sprint	Dates	Feature Description
Sprint 1	2/16 -> 2/25	Create Mockups and Demos
Sprint 2	2/26 -> 3/7	Get YouTube working for a base
Sprint 3	3/10 -> 3/19	Incorporate Spotify API (Changed)
Sprint 4	3/20 -> 3/29	Create Playlist functionality
Sprint 5	3/30 -> 4/8	Add SoundCloud (Changed)
Sprint 6	4/9 -> 4/23	Connect pieces and Clean code

Front End

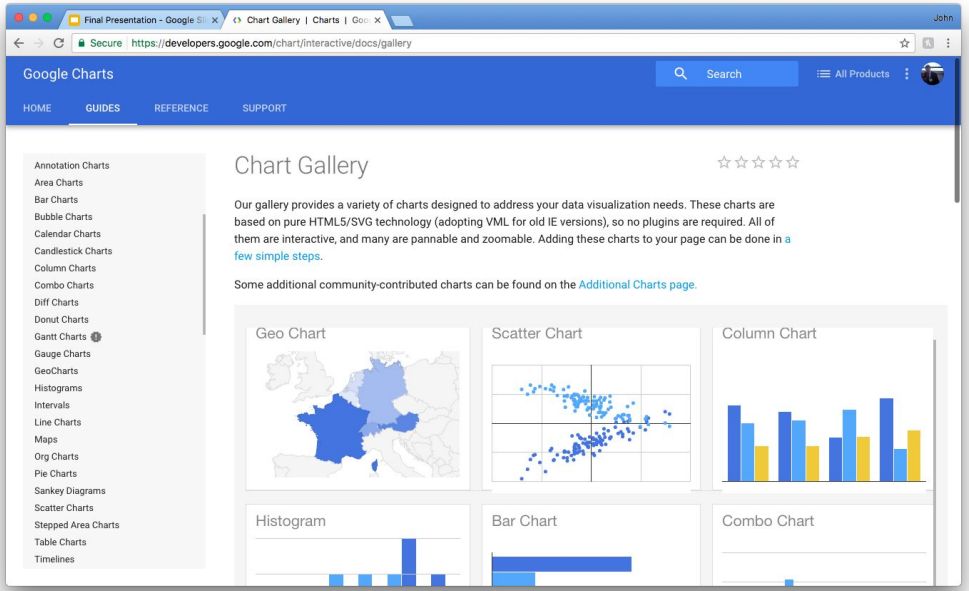
Technologies

- Angular
- HTML5, CSS3
- Bootstrap
- Javascript 5/jQuery
- EJS (Template Engine)

Team Members:
Will Stone, Roshni Vachhani

Google Visualization

- API
- Make variety of charts using data from backend



Back End

Mean Stack

- Node.js
- Express Framework
- MongoDB/Mongoose
- Passport

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express

Passport

- Authentication middleware for Node.js
- Handles local account creation
- Assists with linking/unlinking subscription accounts

Backend Structure

- App: Routes, DB Schemas
- Views: HTML/EJS Files
- Config: DB, Passport, API Keys

User Schema

- Store followers/following information
- Refresh tokens
- Local authentication information
- Password Encrypted

```
local           : {
      email       : String,
      firstName   : String,
      lastName    : String,
      password    : String,
   },
   google         : {
      refreshToken : String,
   },
   napster        : {
      refreshToken : String,
   },
   error : String,
   followers : [
      {
         _id: String,
         name: String,
         biography: String
      }
   ],
   following: [
      {
         _id: String,
         name: String,
         biography: String
      }
   ],
   biography: String,
   favorite_artists: String,
   favorite_songs: String
```

Playlist Schema

- Store user id
- Store relevant track information
- Store semantic tags

```
user_id : String,
 created : String,
 playlist_length : Number,
 description : String,
 tracks :
    [
        {
            track_id: String,
            channel_artist : String,
            track_name : String,
            url : String,
            runtime: String,
            source: String,
            track_count: String
        }
    ],
 name: String,
 running_time: Number,
 playlist_count: String,
 tags: [String]
```

The Plan

API Technologies

- YouTube
- Spotify
- SoundCloud

API Technologies

- YouTube
- Spotify
- SoundCloud

Plan A
Plan B

API Technologies

- YouTube
- Napster

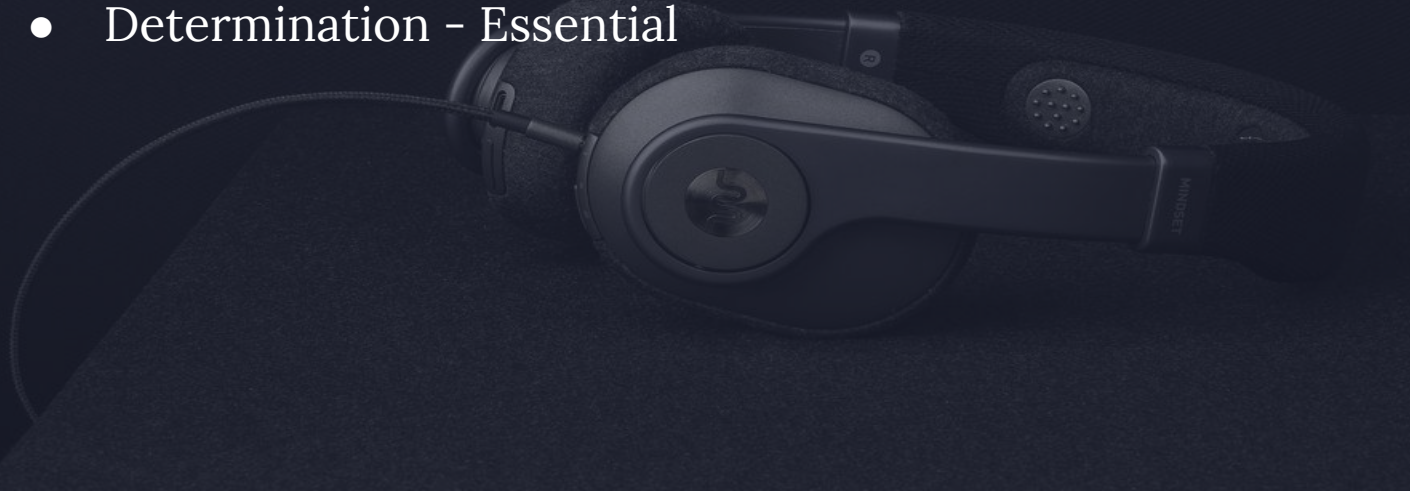
Constraints

- Flash must be enabled for Napster
- AdBlock must be disabled
- Problems with FireFox

The Performance

What we Learned

- API Reliance - Uncontrollable
- Version Control - Important
- Determination - Essential



Future Improvements

- Number of available API’s
- More robust Autoplay

Questions