Project Proposal – Team #6

Harmonic Links

Project Overview

Music lovers struggle to find connections between their favorite artists and albums beyond algorithmic recommendations. Existing discovery tools such as Spotify and Apple Music lack an interactive and engaging way to explore relationships between musicians.

Introducing Harmonic Links, a web application that turns music discovery into a game. Inspired by the game Movie to Movie, our platform challenges users to connect artists to albums they have influenced- all powered by the Spotify API. Harmonic Links aims to have engaging music discovery, encourage friendly competition, and foster organic exploration.

Project Scope

- Core Functionalities
    - Artist to Artist Connection Game
    - Spotify API Integration
    - Randomly generated Challenges/Connections
- Additional Features/Stretch Goals
    - Multiplayer Functionality
    - Leaderboard and Scoring
    - Generate a playlist from connection path

Project Objectives

1. Functioning base game
    a. Successful implementation of Spotify API
    b. Ability to navigate API between Artists and Albums
    c. Ability to find shortest path between Artists and Albums
    d. Ability to save progress
    e. Track and display user scores
    f. Login system via Spotify API
    g. Deploy successfully

Specifications

User Interface (UI) Design

- Platform: Web
- Key Screens:
    - Home Screen (Landing Screen)
    - Game Screen

    - Leaderboard
    - ‘Game Over’ Screen
    - Game Mode Screen
        - Score summary
        - Breakdown of connections
    - Profile
- List any user interaction elements (buttons, menus, forms).
    - Home Screen
        - Start Game Button
        - View Leaderboard
        - Login with Spotify or play as a guest
    - Game Screen
        - Search Artist
        - Score Tracker
        - Optional: Hint Button
    - ‘Game Over’ Screen
        - Play again button (for specific game modes)

Backend & APIs

- Outline the database and API structure.
- Specify authentication and security considerations.

Tech Stack

- Frontend: NextJS, React, Vercel
- Backend: NodeJS, Supabase, JavaScript
- Spotify API

Hardware Requirements

- List any physical devices required for development/testing.
- N/A

Software Requirements

- Code Editor: VS Code
- Version Control: Github
- Project Management: Github Projects
- Figma or Bootstrap: UI//UX Design
- JavaScript
- React
- Next.js
- Tailwind CSS
- Spotify Web API

- Supabase SDK
- Vercel

Project Timeline

Phase	**Duration**	**Tasks**		
		Front End	**Back End**	**General**
Week 1	2/10 - 2/14	Define project scope. Research. Repo setup. Complete Project Proposal.		
Week 2	2/17 - 2/21	Wireframes, Setup NextJS	Database Schema, Setup Supabase	Determine user flows
Week 3	2/24 - 2/28	Build static versions of key screens (main screen, etc.)	Develop API endpoints for game logic (artist connections, scoring)	
Week 4	3/3 - 3/7	Build functional UI pages	Continue backend development of game logic APIs	
Week 5	3/10 - 3/14	Finalize UI development	Finalize backend development	
Week 6	3/17 - 3/21	Integrate frontend and backend systems.		
Week 7	3/24 - 3/28	Finalize integration. Begin internal testing of basic gameplay.		
Week 8	3/31 - 4/4	Develop additional features (e.g. multiplayer, leaderboards)		
Week 9	4/7 - 4/11	Finalize additional feature development		
Week 10	4/14 - 4/18	Optimize UI performance and QoL	Optimize API performance	
Week 11	4/21- 4/25	Bug fixing and testing		
Week 12	4/28 - 5/2	Final testing and polish. Complete presentations and reports.		

Project Team

Role	Team Member	Responsibilities
Frontend Developer	Srujana Ayyagari	
Frontend Developer	Alec Ibarra	
Backend Developer	Sunaina Ayyagari	
Backend Developer	Kevin Dang	
Full Stack Developer	Ben Wowo	
Full Stack Developer	Nate Christie	

Team Leader Rotation

Team Leader	Dates
Srujana Ayyagari	2/10 - 2/14 (1 week)
Sunaina Ayyagari	2/17- 2/28 (2 weeks)
Alec Ibarra	3/3 - 3/14 (2 weeks)
Nate Christie	3/17 - 3/28 (2 weeks)
Kevin Dang	3/31 - 4/11 (2 weeks)
Ben Wowo	4/14 - 4/25 (2 weeks)
Srujana Ayyagari	4/28 - 5/2 (1 week)

Links

- GitHub Repository: https://github.com/adibarra/harmonic-link
- Task Board: https://github.com/users/adibarra/projects/3
- Design Document: figma project