DevoBeats: Danny Mok, Colyi Chen, Kevin Lin
SoftDev
P05:
2025-05-07
Time Spent: 2
TARGET SHIP DATE: 2025-06-09

DESIGN DOCUMENT (Version 0)

I.   Description

This project is a rhythm game inspired by Piano Tiles. It will have a settings page, log-in functionality to keep track of scores on a leaderboard, a song selection page and the actual game page itself. The game page will consist of 4 lanes, each with tiles that scroll down at a set speed. Upon reaching a threshold point, the user can click or use a corresponding keybind to tap the tile and gain points. The accuracy of the timing will be taken into consideration as well, and failing to tap a tile in time will lead to penalties. When the song is completed or the user fails to complete the song, their score is compared to their high score and the leaderboard displaying the scores of all users is updated.

A. Program Components

a. User Accounts:
   i.   Creation of accounts and login/logout functionality
   ii. Sessions
b. Node.js backend
   i.   Needed for real time responsive inputs to visual-audio cues
c. Node.js middleware
   i.   Needed for real time responsive inputs to visual-audio cues
d. SQLite3 Database:
   i.   Stores user login info
   ii. Stores user scores
e. Jinja Templates
   i.   Landing Page
      1. Flashy visuals and easy navigation
      2. Play button
      3. Login/Signup options
   ii. Leaderboard Page
      1. Displays leadership by points
   iii. Song Selection Page
      1. Select pre-existing song

2. Select pre-mapped song (optional)
- iv. Game Page
  - I. Tile scrolling and keyboard/click based gameplay
- v. Settings
  - I. Change gameplay settings
- f. Javascript
- g. Json files (Optional depending on implementation)
  - i. Storing beat maps

B. Site Map + Descriptions

- a. Landing page/home (/):
  - i. Redirects to user login/logout/registration, leaderboard and the song selection page
- b. Login (/login):
  - i. User login functionality
- c. Registration Page (/register):
  - i. User registration functionality
- d. Game Page (/game):
  - i. Tiles scroll down along one of the four paths
  - ii. Threshold line to gauge the timing of the keypresses to the oncoming tiles
  - iii. Keybind indicators
  - iv. Score indicators
  - v. Song progression bar
  - vi. Song audio
  - vii. Song distortion upon mistiming a note (optional)
- e. Song Selection Page (/select):
  - i. Browse through Spotify API playlists
    - I. These songs will have procedurally generated notes
  - ii. Browse through pre-mapped songs
- f. Settings Page (/settings):
  - i. Change keybinds of the game
  - ii. Change color of tiles (optional)
- g. Leaderboard Page (/leaderboard):
  - i. Displays usernames and their high scores from highest to lowest
- h. Loading Screen (/loading):
  - i. Implemented for wait times

C. Database Organization
- a. User Table

id	username	password	Score
INTEGER PRIMARY KEY AUTOINCREMENT	TEXT UNIQUE NOT NULL	TEXT NOT NULL	INTEGER NOT NULL

D. Frontend Framework

<u>Tailwind</u>

We chose tailwind because of its ease of use and since our CSS lead has experience with it. Our primary focus is on functionality before style, and tailwind provides a fast but powerful way to stylize our website.

E. APIs

Spotify API (Subject to change)

F. Task Breakdown

Danny Mok:
- Project Manager
- Undetermined

Colyi Chen:
- Undetermined

Kevin Lin:
- Undetermined