Software Requirements Specification for Software Engineering: subtitle describing software

Team 8 – Rhythm Rangers

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Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

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5 Relevant Facts And Assumptions

5.1 Relevant Facts

- Existing music recommendation algorithms are limited in customization and accuracy
- Current generative models struggle to match the quality of human-produced music
- The output of current generative models is unpredicatble
- Existing audio analysis tools provide a strong foundation that can be expanded upon
- The system will rely on external APIs to gather data on musical features
-

5.2 Business Rules

This section will list out the high-level functionality of the project

- The project will contain a generative system that will use a machine learning model to generate music aligning with a user's input critera
- The project will contain an analysis system that will extract musical features from a user's input song

- The project will contain a recommendation system that will recommend songs to the user that match the user's input critera
- the user will interact with the project through a website
- the website will communicate with a locally deployed server
- the server will handle the large datasets and machine learning models implemented in the project
- the user will interact with the generative system by typing in various musical features they wish to be generated
- the user will interact with the analysis system by providing either a song file or a link to a video containing the song they wish to analyze
- the user will interact with the recommendation system by tuping in various musical features they wish to experience in the recommended songs
- the generative system will return and display multiple song files to the user, with the ability to both play them directly in their browser and download the song to their computer
- the recommendation system will return and display a list of songs and their links to the user
- the analysis system will return and display a list of musical features to the user

5.3 Assumptions

- Users will have at least some familiarity of music theory
- The analysis and recommendation systems will use as many well-established musical features as possible
- All API inputs will be easily accessible and reliable enough to support the recommendation and analysis systems
- The system will be written in a language that all developers are familiar with

- The system will use a local server to handle the processing of the machine learning model and large datasets
- Handling of niche features and cover art are designed to enhance the user experience, but these will not be a part of the core functionality of the system
- The generative system will be completed by the POC demo date
- The recommendation and analysis systems will be completed by the Revision 0 date

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Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1. What knowledge and skills will the team collectively need to acquire to successfully complete this capstone project? Examples of possible knowledge to acquire include domain specific knowledge from the domain of your application, or software engineering knowledge, mechatronics knowledge or computer science knowledge. Skills may be related to technology, or writing, or presentation, or team management, etc. You should look to identify at least one item for each team member.

2. For each of the knowledge areas and skills identified in the previous question, what are at least two approaches to acquiring the knowledge or mastering the skill? Of the identified approaches, which will each team member pursue, and why did they make this choice?