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Product Backlog (Group 9 / Blotto Beats)

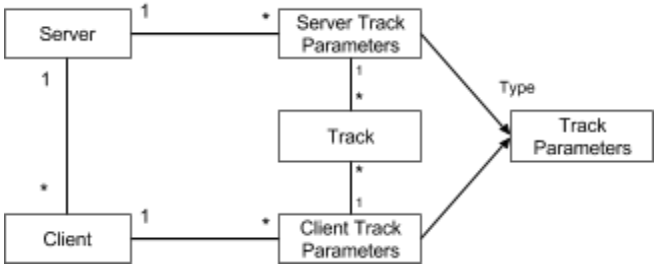
1. **Problem statement**:

Music composition is an expensive and time-consuming process. Many smaller production companies and individual users could benefit from an automated solution.

2. **Background**:

There are many companies that need music for their projects but are either unable to afford that cost or spend that time. We would like to create a program which can procedurally generate music for these types of individuals. Not only could our procedurally generated music help these people, but also could help others such as people studying music theory, musician hobbyists, and people that just want to hear some music. With regards to applications that already exist with this concept, there are many programs which create music procedurally, but with this project we hope to do that in a much more accessible environment. We want users to be able to have this program running in the background and be able to generate new music as if they were listening to something such as Pandora. Also, with our program, we will be including a communal upvote/downvote system (ala Reddit) so people can share which randomly generated music is liked. No other programs of this nature have this ability and we feel it could help in finding which music is good without having to go through a lot of bad music.

3. **System Model**:



Interactions:

Generating a track: Given a seed value, both kinds of track parameters can be used to generate a specific instance of a track.
Uploading a track: Clients can upload a set of track parameters and a seed to the server.
Downloading a track: Clients can download a set of track parameters and a seed from the server.
Voting on a track: Clients can vote on a track, which will be recorded in the server track parametres.

4. **Requirements**:

Must be done:
Functional Requirements

- As a user, I would like a Windows client with an easy to use interface.
- As a user, I would like to be able to procedurally generate music tracks based on parameters.
- As a developer, I would like to maintain a central music repository of uploaded tracks.
- As a user, I would like to vote on whether or not I enjoy tracks.
- As a user, I would like the ability to save sets of parameters.
- As a user, I would like to be able to select from a pre made selection of parameters (e.g. Genres).

Nonfunctional Requirements

- As a developer, I would like tracks to be created in reasonable amount of time.
- As a user, I would like the application to be stable over long periods of time.
- As a user, I would like there to be sufficient variance within the random tracks
- As a developer, I would like to be able to generate the same track from a given seed & parameters

Will be done if time allows:
Functional Requirements

- As a user, I would like Linux and Mac clients.
- As a user, I would like the ability to save tracks to replay later.
- As a user, I would like to be able to select portions of a track I enjoy or dislike.
- As a user, I would like to be able to export to .wav/.midi/.mp3/.ogg or whatever.
- As a user, I would like to be able to export to visual sheet music format.
- As a user, I would like the generator to learn directly from public preferences.
- As a developer, I would like vote authentication to preserve the accuracy of vote data.

Nonfunctional Requirements

- As a developer, I want the server to be lightweight on resources.
- As a developer, I would like the addition of new generator parameters to have trivial modification time.
- As a user, I would like the server to be able to handle the input of thousands of track data sets.
- As a developer, I would like to be able to incorporate the generator algorithm into other projects easily.