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October 16, 2019

CMSI 486

Preliminary Database Design

1.1 – Project description, database engine used, potential users, maybe some other stuff

For our project, we will create a music song database using mySQL. This will organize each song by genre, sub-genre, arist, and bpm. This database will work hand-in-hand with our 401 project, where real song samples are used to train new models using Generative Adversarial Networks. These song samples will be allocated within the database, and be ordered by their specific “tags” (artist, genre, sub-genre, bpm). Potential users of this database could be those who want to discover songs with similar bpm/genre/artists for music production or for music implementation within neural networks.

1.2 – Data description, generally what type of data will be stored

We will largely store string data, both categorical and identifiers. There will be a lot of overlap in genre, subgenre, and artist categories. A stronger identifier will be song name, though not necessarily unique. We will also store either wav or mp3 files. Since those two types of files are distinct formats, we have to decide if we want to prioritize smaller files or higher quality audio.

1.3 – At least five examples of the type of data your database will provide *to the user*

1. Allowing the user to find a given artist and their songs that are utilized for our neural network
2. Allowing the user to search a given genre (hip-hop, lo-fi, r&b, etc..) and find artists/songs that share the same genre.
3. Allowing the user to search a given sub-genre (hip-hop, lofi, r&b, etc..) and find artists/songs that share the same sub-genre.
4. Allowing the user to search a given BPM and to find songs with the same/similar BPM.

5. Allowing the user to search a given song that is utilized within our neural network, and to see the song's "tags" (genre, sub-genre, bpm, artist).

1.4 – A preliminary idea of the schema of the database including table descriptions and potential columns

The database will have two entities. The first entity/table will be the artist table, which will have attributes such as the artist name, artist genre, and song name. The second entity/table will be song information. This will have attributes such as song bpm, song genre and song sub-genre.

1.5 – A complete preliminary Entity-Relationship Diagram [ERD] for the database [NOT hand-drawn, PLEASE!]