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Project Proposal:

(a) High-level description of domain

The ER diagram models a database that will be used to store different types of data relating to music. This database will contain a variety of songs and various information that relates to each song. The database will be the backend to a web application that can be used to obtain information about certain songs, artists, albums, or other musical data.

(b) Information about the entities and relationships including key / participation constraints

1. Entities
    a. The entities that are modeled in the diagram are songs, artists, writers, date, venue, genre, user, album, producer, and music video.
2. Relationships
    a. Songs are performed by artists. Artists perform songs.
    b. Songs are written by writers. Writers write songs.
    c. Songs are performed at venues. Venues have song performances.
    d. Songs are performed on concert dates. Concert dates have song performances.
    e. Songs have genres. Genres have songs
    f. Songs are user favorites. User's have favorite songs.
    g. Songs are on and album. Albums contain songs.
    h. Albums have producers. Producers produce albums
    i. Songs have music videos. Music videos are videos for songs.
3. Constraints
    a. Key
        i. All music videos are for exactly one song
    b. Participation
        i. All songs are performed by at least one artist.
        ii. All artists perform at least one song.
        iii. All songs are written by at least one writer.
        iv. All writers write at least one song.
        v. All songs are performed on at least one concert date.
        vi. All concert dates have at least one song performed.
        vii. All songs have a genre.
        viii. All albums contain at least one song.
        ix. All producers produce at least one album.
        x. All music videos are for exactly one song.

(c) Explain how you plan to acquire data for your application

We will acquire most of the data for our application through musicbrainz, which provides free downloads for snapshots of their open music database, and Musixmatch, which has a free API we can use to get additional information about songs, artists, and albums which we can then import into our database, likely through csv files. Any remaining data will be fabricated.

(d) Discuss how the user will interact with your database.

The web interface will provide a variety of functionality to the user. The interface will allow the user to query the database for various information. For example, there might be a feature that allows the user to view upcoming concerts for a certain artist or at a certain venue. There could be a feature that lists all of the songs written by a specified songwriter or performed by a given artist. Additionally, the user will be able to add songs to a list of favorites specific to that user.