Members:
Thomas Weaver tjweaver@usc.edu
Can Chen canchen@usc.edu
Jay Doshi jaydoshi@usc.edu
Dayu Jiang dayjian@usc.edu
Bryce Check bcheck@usc.edu
James Oeth oeth@usc.edu

Meeting time: Tuesday 8:00pm-10:00pm SAL Lobby or Viterbi quad if SAL is crowded

Project Proposal:

Our idea is called Fluid Music which is a music radio mobile application. The motivation for this stems from the current music radios today such as Pandora or Spotify radio which gives many users a lackluster music radio experience. Many users user the radio to find new music that extends their breadth of a certain genre but in this case many users attempt to use the radio to extend their depth of a genre with a particular song and the radio applications of today don't seek to do that. Therefore our project would seek to take in a song as input and compare it amongst a database of other songs and try to match the sequence of frequencies of other songs and output that in a radio format.

As far as fulfilling the project requirements, the GUI would be a similar design to many of the music radio apps of today.

1. Home screen - here both users and guests will push a button to input a song, chosen from their Apple Music Library, and a list of sonically similar songs will result from that input

2. User - Each user would have their profile page where they have "Saved Songs", create stations/playlists of the songs they like ("Playlists")

3. Username/password - Registered user will have their own profile and we will set up login functionality and store the user and hashed password in a database. If a user has not registered yet, "New User" will be an option to open a new profile.

4. Guest - The guest experience would be as simple of only being able to create a single station/playlist or view popular searches while a full user would have full access of the app being able to create multiple stations/playlists browse other stations/playlists and personalize their profile.

5. Network & Multithreading - would be in creating social relationships amongst users for the use of having a feed of followers/following stations and also be able to share stations with other people specifically. User lookup and station lookup

could also be incorporated to satisfy this as well. I'm sure as we learn more about multithreading and networking in the future lectures this aspect of the project will become much clearer.

6. Song database - there needs to be some database that holds a list of songs, and accompanying data. As we figure out how to compare songs from that output, this will be more clear. For our demo, we could have a small database of 100 songs.

Overall that is the format of the project and the high level concepts of what we are trying to do. Some brief specifics of what we have in mind for comparing the songs is to use Fourier Transform algorithms on the song signal profiles and store that data and use it for comparison and finding optimal radio song suggestions. Another thought would be to overlay a learning algorithm on top of the radio suggestions to better refine the application after the Fourier Transform comparison has been completed. User input as to whether the like the song or not would be taken in as well. We are excited about this project and believe it is feasible given our capabilities and backgrounds.