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15 – 112

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TP1 Design Proposal

* Project Description:

This project aims to be a socially-integrated Digital Audio Workstation meant for sharing and voting on short (10-30 second) retro-styled “jingles.” Its name will be called *Jingle*. Its list of planned features include a piano roll and pattern editor, server-side song storage, ringtone exporting, and a synthesizer sound editor.

* Competitive Analysis:

Some other projects I’ve seen related to music composition mostly deal with composition in proper notation. All of those projects tend more to focus on orchestration and arrangement, in lieu of programs similar to MuseScore or Finale Notepad. My project relates more with DAWs like FL Studio or Ableton. Furthermore, I intend to focus heavily on the 8-bit/retro design themes. Another aspect of my project that I haven’t seen in a lot of others is the social aspect of the platform. A central part of this project is to properly integrate the composition tools with the social aspect. Nevertheless, my project will be similar to the other projects in the way that they all deal with music composition and sound exportation.

* Structural Plan:

The main project will run from the file that uses Pygame to render the interfaces. This file will also handle a lot of the main media imports for pygame. Playlists and patterns will each be their own classes and will be called on from separate files. Media files including icons and audio files will also be stored in the program’s root folder.

* Algorithmic Plan:

The trickiest part of the project is going to be either the piano roll editor for the synthesizer (+creating a synthesizer in general) or setting up the server. For the piano roll editor, I’m just going to build it up piecewise by creating its classes. For the synthesizer, I plan to start by generating a single sound font, and then looping it at different pitches, as controlled by the piano roll. For the server, I plan to make a webserver powered by Python, I’ll keep it open on a secure port, so that Users can log on and store their sounds.

* Timeline Plan:
  + By end of break: Finish Piano Roll and Editor
  + Before TP2: Set up webserver stuff
  + Before TP3: Set up synthesizer and soundfont editor
* Version control plan:
  + <https://github.com/ZeddZoo/Jingle>
  + I plan to back up my project on GitHub, which should take care of all my version control issues.
* Module List:
  + Pydub
  + Pygame
  + Pyaudio
  + Numpy?