Digital Audio Workstation Requirements

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Non Functional Requirements:

The application shall use the JUCE framework in C++, CMake, and MSVC to compile code into an executable native to Windows OS.

The application shall be able to be downloaded and ran without prior set up from github.

The GUI shall remain readable and responsive while rendering different components of the application.

The application shall have real-time recording capabilities to process audio and plugins without a significant drop in audio.

The application shall be able to playback audio at the speed it will be exported without lag or stutters

Functional Requirements:

The application shall provide a timeline interface that users can drag and drop audio files

The application shall allow audio files on the time line to be manipulated, moved along the time line, cut, and sent to channels for effects.

The application shall support routing multiple audio files to the same effect channel for consistencies.

The application shall include multiple essential effects/plugin's such as reverb, delay, compression, eq, distortion, etc.

The application shall include effect/plugin support for industry standard effects/plugin's as well as custom effects/plugin's created during application creation.

The application's custom effects/plugin's shall be functional in industry standard digital audio workstations. ie) Fl Studio.

The user shall be able to record voice/instruments directly to the time line in real time.

There shall be a piano roll where melodies can be produced using a similar time line in which each vertical position relates to a key on a standard 88 key piano.

The user shall be able to use a built in instrument catalog for use to apply on the piano roll.

The application should include a help page(s) intended for the beginner user group; however, applicable to all users.

There shall be a settings page to change specifics of the application for an individual user.

The application shall request the user to save the file state before user closes the application.

Users shall be able to save projects and export them to mp3 or wav files.

The application shall open a blank project or to the last previous project the user has opened.