Project Proposal

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Sample-Based Chord Synthesizer (SBCS)

The Sample-Based Chord Synthesizer (SBCS) aims to be a comprehensive audio synthesis tool that will give users an oppotunity to create, manipulate, and explore a wide array of sounds and musical chords. SBCS will integrate five core functionalities:

Chord Synthesizer: The primary feature of this program is a dedicated module for generating and manipulating chords. Users will be able to input single notes and have the program automatically generate corresponding chords based on selected musical keys, scales, or custom configurations.

Sample-Based Synthesis: Utilizing pre-recorded audio samples as the foundational sound source, users can manipulate these sounds to create unique textures or mimic real-world instruments.

Noise Generation: SBCS will offer noise generation capabilities, allowing users to create non-musical sounds for effects, percussion, or ambient soundscapes, enhancing their audio production with white, pink, and other colored noises.

Subtractive Synthesis: By generating basic waveforms (sine, square, triangle) and applying filters, SBCS will enable users to sculpt sounds by subtracting frequencies.

Additive Synthesis: This feature will allow users to layer multiple sine waves at different frequencies and amplitudes, producing complex sounds.

Issues of concern

- Project scope wont be very clear until the first week of starting this project so there's a risk of the project scope changing in size beyond the initial vision, potentially delaying development. Establishing clear milestones and prioritizing features will be crucial to mitigate this risk. Features may be added or removed based on this.
- There is a plan to create a fully-fleshed out GUI for this program if time allows, But again this is not a guarantee.