Digital Piano

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The proposed project aims to develop a digital piano application using Python. The application will allow users to play piano notes using their computer keyboard. The Minimum Viable Product (MVP) will focus on creating a simple piano application with basic functionality, followed by the addition of more sound effects and features.

Project Goals:

- Develop a Python-based piano application.

- Implement core piano functionality letting the user play notes across 8 octaves using 8 keys on their keyboard.

- Design a clean and intuitive user interface.

- Add additional sound effects to the piano.

I plan to utilize the code from Assignment 1 to help me generate the piano notes by generating multiple sine waves of different frequencies and then manipulating them to sound more like piano notes and then applying the sound effects taught in class.

Sound effects I plan to include in this project are:

- Reverb
- Chorus
- Echo
- Pitch shift

If possible, I plan to look for more effects to include in this project.

Key aspects to be addressed during development include:

- Modifying the sine waves to sound more like piano notes. Currently, the sine waves do not sound anything like a piano but it is a good starting point. I will need to do some research into the unique characteristics of piano notes and techniques for emulating them digitally.
- Combining notes: I will need to explore methods for combining multiple notes to ensure a pleasant experience. This will involve studying principles of chord formation and blending techniques.
- Reducing noise. I will have to eliminate noise from the piano notes so that it does not affect the listening experience of the user.
- Creating a UI that lets the user pick any sound effect they'd like to apply to the piano.