**Project Description**

*PyKeys*

PyKeys is a game with preloaded levels of difficulty where bubbles fall onto their corresponding keys on a piano. The user must hit the keys on time for the score to increment. The game has two additional features, a music composition mode wherein the user can input notes saved into a file loaded as a level for the user to play, and an algorithm that analyzes where the user makes the most errors, allowing the user to practice the section again.

**Competitive Analysis**

Similar projects include ‘Synthesia,’ a computer program that allows users to play on a MIDI Keyboard. This project is identical to ‘Synthesia’ because it has the composition feature and tracks the score. One difference is that while ‘Synthesia’ pauses the piece when a wrong note is pressed (until corrected), PyKeys provides a performance analysis after the music is played and allows the user to practice the section of the piece with the most errors.

**Structural Plan**

Parts of the project: Base Piano, Falling Bubbles, Music Composition, Analyze Mistakes

*Base Piano*

*Falling Bubbles*

*Music Composition*

*Analysis of Mistakes*

**Algorithmic Plan**

Complex Ideas in code: Music Composition, Analysis of Mistakes

*Music Composition*

*Analysis of Mistakes*

**Timeline Plan**

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| **Date** | **Plan** |
| 16-Nov to 17-Nov | - Make the sharps and flats functional - Add a scoring system - Work on making a music composition mode |
| 18-Nov | - Continue to work on making the music composition mode |
| 19-Nov to 20-Nov | - Transform user input from the music composition game and implement it in the code |
| 21-Nov to 22-Nov | - Start working on the analysis of the user’s mistakes |
| 23-Nov | - Improve UX |
| 24-Nov to 28-Nov | - Improve UX |
| 29-Nov to 1-Dec | - Maybe add a 2.5D effect / improve UX |

**Version Control Plan**

**Graphical user interface, text, application, website

Description automatically generated**

**1.0 Screenshot from GitHub of the repository**

I created a repository on GitHub, which I plan to update daily, or whenever I make a significant change/addition to my program.

Text, letter

Description automatically generated

**1.1 Method of updating repository**

**Module List**

Musical Beeps – This allows for the generation of piano tones