C Project- MUSIC BOX

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Project Summary

The Beep() function in C is used to generate a tone on the speaker. The function is synchronous, which means it does not return to the caller function until the sound has been produced. This function is very helpful during debugging of programs.

In our project, we made use of the Beep() command to play sounds at different frequencies and thus emulate the working of a musical instrument.

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Features of the Program

- GUI-Based- The Project makes use of the GTK Widget toolkit, which is a free and open source language that is compatible with C and helps us to include GUI elements such as windows and buttons in the program and make it more user-friendly.
- The project also makes use of if-else conditional statements, functions, loops, callback and other simple concepts taught to us during the academic year, thus serving as a good way to apply the concepts taught to us.
- The project also makes use of file handling to transfer notes played on the piano to a .txt file, which allows them to store their recordings.

Working of the Project

The project first opens with a “Menu” screen that offers the user three options:
1) Start- this takes the user to the main screen where the piano can be played. The program offers users to play the CDEFGAB keys and five sharp keys- C#, D#, F#, A# and B#. The user can also save their creations as the program writes to a .txt file.

2) Play- The user can listen to a couple of pre-recorded songs composed using the Beep and Sleep functions.

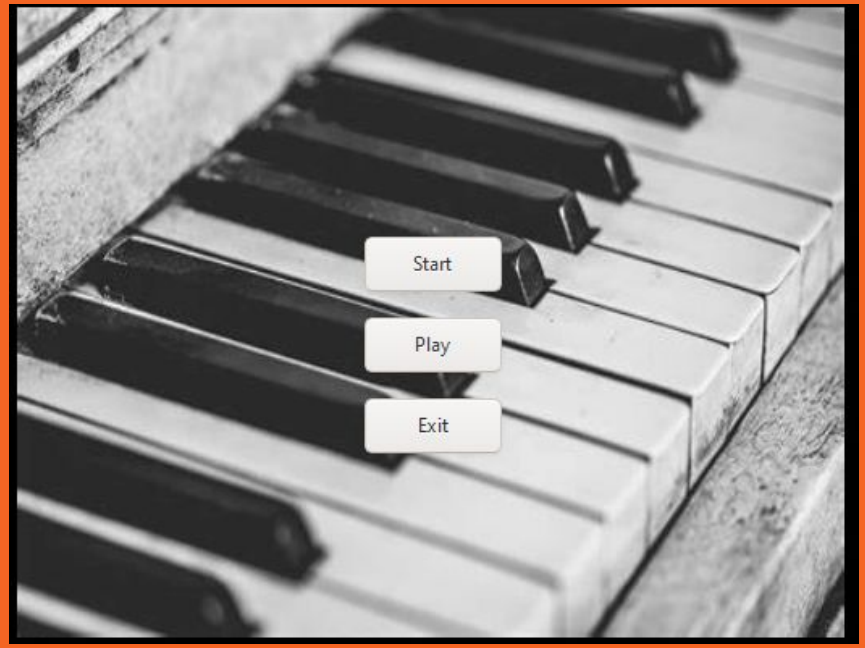
3) Exit- Exits the Program

Distribution of Work Load

- Swathi- Implemented the interface, Added the five sharp(black) keys, Added two songs(Mary Had a Little Lamb and Happy Birthday)
- Tanisha- Designed the interface to make it more user friendly, Added the white keys, Added two songs(Jingle Bells and Twinkle Twinkle Little Star), Implemented the write to file feature.

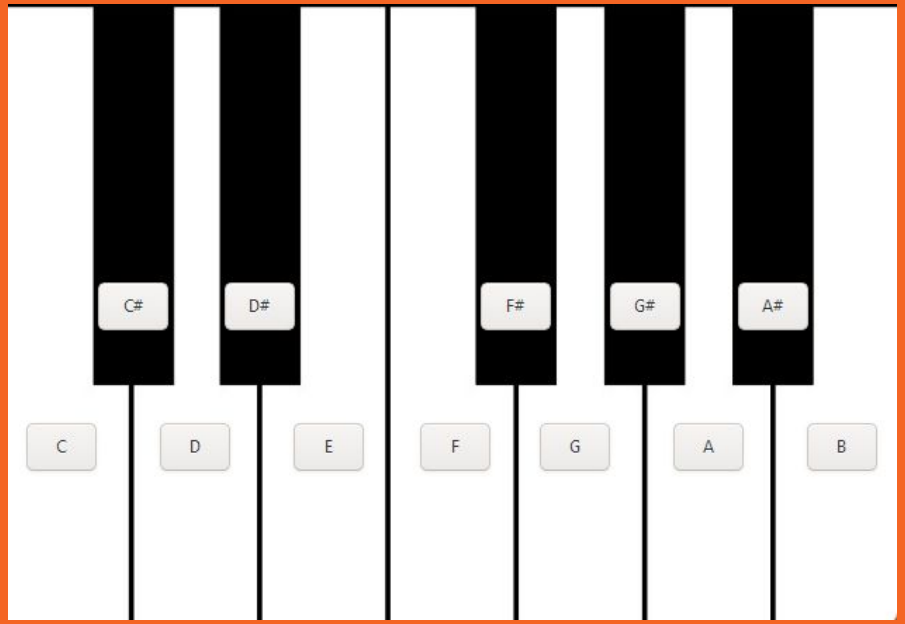
Front Screen of the Project

Allows the user to Play the Piano, listen to pre-recorded tracks or exit.



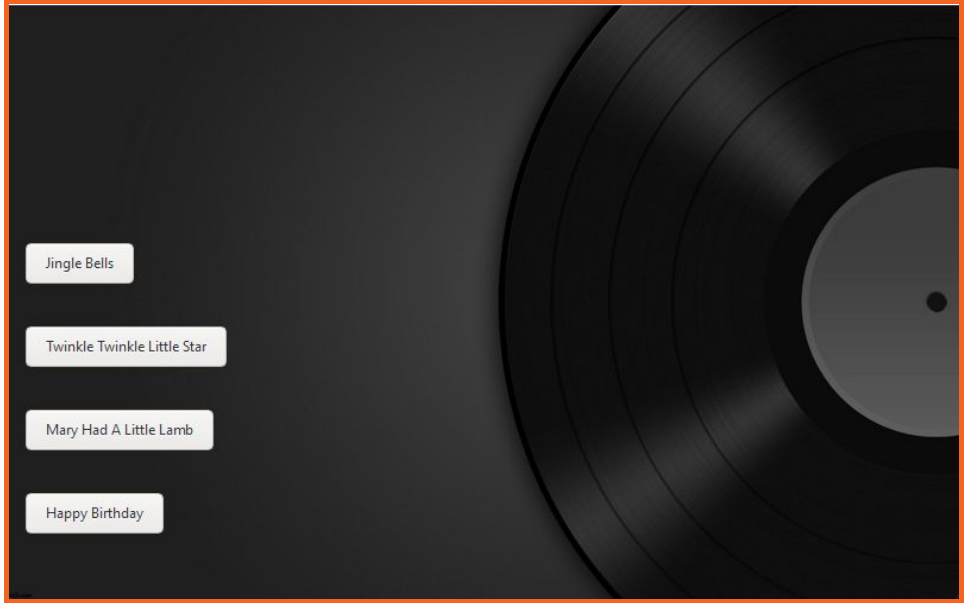
Piano Screen

Allows the user to play the piano.



Music Selection Menu

Allows the user to choose from some pre-recorded tracks.



Future Implementations of the Project

- Due to time constraints, we were only able to implement a single octave consisting of 12 keys in the program. The project can be scaled to cover all 7 octaves.
- Allowing the user to record and save audio files created by them in .mp3 format so that they can listen to it anytime using PortAudio.

Thank you!