Project Report

Project Name : Music World
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Project Description : About scales, chord and arpeggios in Music.

■ Problem Statement:

➔ As a beginner music learner , you always find difficulties in finding scales , chords and some arpeggio pattern of any root note.

■ Why this Project?

➔ While learning music, scales, chords and arpeggio play an important role.

➔ Scale:

- In music Theory, Scale is any set of musical notes ordered by fundamental frequency or pitch. They are just set of patterns. Two types of scales are Major Scale and Minor Scale.

➔ Chords:

- The chords in music, is harmonic set of any frequency or pitches consisting of multiple notes that are heard as if sounds simultaneously. Two types of chords are: Major Chord and Minor Chord.
- Chords are used to add harmonic content to a song.

➔ Arpeggio:

- An Arpeggio in music, is a type of a broken chord (i.e. chord broken into a sequence of notes) that is played in some order.
- Arpeggio fills the “dead spaces/gap” and help to spice up our sound.

➔ Aside from the physical benefits of practising scale, the main reason to know a scale is that it gives more idea of what notes to actually play over any given chord sequence. If we know we've got a song or track in a particular key, knowing the notes in the parent scale of that key means that we've got much more chance of hitting a note that will work over the chords that make up the tune.

■ Approach:

➔ As there are total 12 notes (i.e. a symbol donating music sound) in music. For each root note we can think of its scale, chords and arpeggio.

➔ We have used circular array of a string as a data structure for this project.

➔ So, these were the steps that we followed:

- 1. We made string array for storing notes.
- 2. We made different integer arrays for defining these Scales, Chords and Arpeggio pattern for a given root note.
- 3. Implemented different member functions for obtaining scales, chords or arpeggio. So, when a user enters root note its corresponding scale, chord or arpeggio is obtained by using different functions.
- 4. Then, we recorded all necessary music files in piano and converted .mp3 files to .wav files and put them into our project folder.
- 5. Lastly, we have some functions of "PlaySound" which we will play the whole scale, chord or arpeggio for particular selected root note.

- 6. Finally, we designed our output console page with switch cases.

■ What do we learn:

➔ We mainly learnt how to Play sound through this project i.e., the use of “PlaySound” function.
➔ One another thing that we learnt is how to initialize to an array in class.
➔ And, we also learnt these things about music and how we can play them in piano.

■ Limitations:

➔ The first limitation in this project is that, we are not able to convert normal string to **LPCSTR** which is type of string needed to run in “PlaySound” function.
➔ Due, to above limitation only, limited arpeggios are added in our project and even that will increase our efficiency.
➔ We, can also create a virtual type of piano with the help of graphics, but we are unable to do due to lack of knowledge on it.

■ Some Pre-requisites:

➔ To, make this project one need a windows desktop, as the “PlaySound” function is there in header file of Windows. So, we need to include that.

➔ Also, we need an editor that has functionality to add linker to it. As, for this project we need "**lwinmm"** linker. So, editors like Devc++ or CodeBlocks are better to use.
➔ And also we need to include one library header file i.e., **mmsystem.h .**

■ How to Use this?

➔ User has to enter a particular root note from 12 notes and select whether he/she wants minor/major scale, chord or arpeggio pattern of that root note.
➔ Program will generate corresponding major/minor scale, chord or arpeggio pattern and it will also play that sound.

■ Conclusion:

➔ So, mainly the newbies in Music, who wants to learn scales, chords or arpeggio can use this.
➔ Also, the one who wants to recognize the scale/ chords used in particular song can check it by playing here.

THE END