Project Proposal

Deanna Biesan
Cameron Cordes
Nitin Sharma

Justification for Change to Windows Metro 8 Application:

The Android platform has a handful of music notation applications which are similar to our desired idea, while the Windows Metro Store does not. In addition, we feel that our application will be best suited for a tablet interface and, while Apple has the majority of the market share when it comes to tablets, more people own Windows tablets than Android. Finally, we feel that development of a Windows Metro application will be much easier than development of an Android application, which will allow us to meet all of our requirements in a timely manner.

Abstract:

Our Project is going to be a mobile music notation application for the Windows Metro store. We decided on this project because, while other applications in this realm exist, none are available on this platform. By the end of the semester, we plan to have a functioning application that allows users to input music notation, save their files, and play the music back with rythmic accuracy.

Introduction:

When it comes to Windows platforms, there is a market for musical notation software. A good notation software would allow musicians to jot down ideas in the form of notes on a staff while they are on the go, play back their created files, and read existing notation files such as XML, gp5, tux, and mus. These features would allow a musician to download files from the internet, view them, and play them back on their mobile device.

The existing problem is no such application exists as a Windows Metro application. We believe there exists room in the marketplace for a notation software application and creating one will open many doors for how musicians share and create music together. As it stands, PC software such as Finale and Sibellius are the most widely used tools for creating sheet music. The speed at which musicians can collaborate on such projects is hindered, due to only being able to create and edit these files from a PC. With a proper mobile app, musicians could very easily quickly create ideas, and share them with their peers for further collaboration on the fly. The app could also serve as a good teaching tool in private settings, and as an excellent practice tool. A musician could simply download a song to their device and, using the playback feature, play along with the music.

Related Work:

A number of paid and free musical notation applications exist in the form of mobile and desktop applications. The approaches that these software systems take to solve the problem of musical notation differ in a variety of ways, chief among them: forms of user interaction with the applications, features of

the applications, whether the music written can be played back, and the format in which the application exports the music. Some of the applications presented the users with a list of notes that could be dragged onto the screen while others just had the user touch and scroll through to find the correct note types. In addition, some allowed the written music to be played back by the user after an instrument has been selected, while others do not include this feature. Finally, the export formats of these applications vary among musicXML, midi, png, jpg, and pdf.

Methodology:

To develop this application we plan to break down the project into sections to put together to make the functioning application. The user interface will probably be the first thing we work on to lay the foundation for all the functionality that we decide to build into the application. To create the user interface we will use throwaway prototyping as many tools exist to aid in this task. After the UI is in place then we can write the code to allow for the insertion and deletion of notes with their duration and pitch easily changeable. After we get a working user interface and the loading and saving of an editable staff for notation in place we would like to try to incorporate MIDI, which is a type on input interface where you can plug in a keyboard and play the notes as the software inputs the notes making it easier and quicker to write music.

References:

Music Notation Editors Existing on Different Platforms and Included Features:

1. Maestro –includes pitch pipe and metronomes; currently in beta testing
2. Ensemble Composer –uses midi for sound; exports midi files
3. Notateme Now –enter music notation via touch; allows the user to take pictures of sheet music with a camera; can be played back
4. Music Composition – exports to printable image file and playable audio file
5. Music Score Pad – offers free version and plus version; drag and drop notation; allows the user to take pictures of sheet music with the camera and then edit the sheet music from the image

Project Milestones:

By 4th week of development:
1. Application can display a musical staff
    a. Clefs can be placed on the staff
    b. Key signatures can be placed on the staff
    c. Time Signatures can be placed on the staff
2. Application can accept basic notation input

a. Application now has a basic functioning flow (Splash Screen or Menu Screen takes you to notation screen)

b. Notes can be placed on staff by touching the staff

c. Note heads from a breve note to a 64th note are supported

d. Measures are created when notes are placed with respect to the time signature

e. Note heads can have accidentals placed on them

By 5th week of development:

3. Application is capable of saving created files and opening previously created files

4. Application can accept advanced notation input

a. Application can now display multiple staffs as well as grand staffs (conjoined staves).

b. Note heads can have articulations

i. Slurs, tenuto, accent, and staccato.

c. Tempo marking dictionary

By 7th week of development:

5. Application is capable of MIDI playback

a. Related staves are played back simultaneously.

b. Soundfonts are selectable for each staff.

6. Application UI facilitates easy reading while playing

a. Application will have options to adjust zoom

b. Application will slowly scroll along while music is played back

7. Application can open commonly used file types

a. Music XML is the priority

i. Finale, Sibellius, Guitar Pro 5, if possible.