MusicXML - Requirement Doc.

-By: Group 3 EECS 2311

Group 3:

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Table Of Contents

Page No.

1 - Introduction

1.1 - Purpose

The purpose of this requirements document will be to cover all the requirements for Group 3's MusicXML converter. The MusicXML converter is an application that will allow the user to import tablature text files (including guitar, drum, and bass) and convert them to XML files.

1.2 - Scope

The software will have a very simple user interface that will be easy to navigate, convert to XML properly, give friendly error messages, and allow the user to view the tabs and saved XMLs inside the program.

1.3 - Customer Needs

The main goal of this software will be to have a tool for musicians that will allow them to get tablatures from the internet and convert them to XML files which they can later convert to Sheet Music.

2 - User Stories

2.1 - Story 1:

"I would love to be able to view my music tabs inside the software."

2.2 - Story 2

"I think it would be a great idea to allow the user to see the XML inside the software."

2.3 - Story 3

"Maybe instead of just being able to upload the tab into the program you can also copy and paste into it."

2.4 - Story 4

"I would love to import any type of tab into it without having to edit it to the specifications"

2.5 - Story 5

"Would the program be able to detect what type of tab it is? I think having it automatically detect what type of tab it is would be a great feature."

2.6 - Story 6

"Can the program detect special types of guitar and drum notes like grace notes?"

2.7 - Story 7

"Some tabs I've noticed had some type of repeated measure. Will this program allow that as well?"

3 - Software Description

3.1 - Perspective

The group 3 Music2XML converter is a software that is built for EECS 2311. The aim of this project is to create a software that allows a user to input .txt files that contain tablature of guitar, drum, and bass and then convert said tablature to a MusicXML or XML file which can be later used for other third party softwares.

3.2 - Features

Group 3's Music2XML converter is able to convert complex guitar, drum, and bass tablatures. If Group 3's Music2XML converter can not read a given .txt file correctly it will display an error message. This software will also allow the user to view the converted XML inside the program.

3.3 - Limitations

The target audience is set to users that know how MusicXML and music tabs work. The user should be able to know how to operate and navigate Java Eclipse with gradle installed. In terms of software, it will be constricted to what is said in the user manual. This means that some features such as vibrato will not work.

4 - User Scenarios / Use Case

4.1 - Upload/Insert tablature text files

Title: Upload/Insert tab files
Primary Actor: User
Success Scenario:

1. User selects the “Import” option in the software
2. User selects a .txt file from their system
3. Software reads the file and makes sure its the correct format
4. Software saves the file

Extensions:

2a. The software read the file and determined it was not a .txt file and throws an error Message saying the file the user is trying to enter is not the correct format

4.2 - Detect tab type

Title: Detect tab type
Primary Actor: User
Success Scenario:

1. User imports .txt file
2. Software analyses Users Imported .txt file
3. Software determines if the .txt is a guitar, drum, or bass tablature
4. GUI will show what type of tablature is it, including guitar, drum, or bass tablature

Extensions:

2a. Software cant recognize what type of tablature it is. It will provide an error message for the user saying that it could not be recognized and will then allow the user to manually input it.

4.3 - View uploaded tablature

Title: View uploaded tab
Primary Actor: User
Success Scenario:

1. User selects a tablature that they have uploaded
2. User presses the “View” button
3. Software displays the selected tablature in the GUI window

4.4 - Convert tablatures to XML

Title: Convert tabs to XML
Primary Actor: User
Success Scenario:

1. User selects a tablature that they have uploaded
2. User presses the “Convert” button
3. Software performs the necessary actions to scan the tablature and convert to XML

Extensions:

3a. Software was unable to convert the tablature properly to XML. An error message and will tell the user something went wrong and to try again.

4.5 - View converted XML

Title: View converted XML
Primary Actor: User
Success Scenario:

1. User converts the selected tab to XML
2. User navigates the GUI and finds the XML tablature
3. Software displays the converted XML in the GUI window

4.6 - Save converted XML

Title: Save converted XML
Primary Actor: User
Success Scenarios:

1. User converts the selected tablature to XML
2. User presses the “Save” button
3. Software opens a new window and prompts the user for a location and name for the MusicXML file.
4. Software saves the MusicXML file onto the users selected location.

4.7 - Detect special type notes (e.g. grace notes)

Title: Detect special note types
Primary Actor: User
Success Scenarios:

1. User imports a more complicated tab/.txt file
2. User presses the “Convert” button
3. Software compiles the XML correctly with special notes included

Extensions:

3a. Software does not support the special note type and will print the XML without it, the user will need to refer to the design document in order to implement it if they choose.

Preconditions:

Users must be aware of the special notes that are supported. (Refer to the user manual)

5 - Requirements

5.1 - Functional Requirements

The system must...

- Have the ability to decipher between drum, guitar and bass tabs interchangeably
- Accept users implemented text document
- Automatically detect if the file imported is a tab.
- Convert a proper text file into a musicXML file.
- Export the musicXML file onto your computer in the folder of your choice.
- Be able to reject tablatures if they are unsupported
- Support grace notes, hammer-ons, pull-offs for guitar and bass
- Support flam notes for drums
- Support repeated measures
- Allow the user to edit and save tabs

5.2 - Non-Functional Requirements

The system should ...

- Be expected to be automatic but can also be user specified
- Have a user friendly Interface (simple and easy to use design)
- Not have any issues loading up and closing
- Should be able to run on most unbasic computing systems (e.g. Windows, Mac OS, Linux)