Group 5

TAB2XML Requirements Document

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Introduction

TAB2XML is a music application intended to help musicians of all expertise convert music tablature into sheet music, as well as to hear its sound output through the playing of a virtual instrument. Only guitar, bass, and drum tablatures are currently supported. The sheet music output for all tabs have customization options available, as well as conversion to a PDF and printing functionalities, amongst other capabilities. The playing functionality supports pausing, stopping, rewinding, and fast forwarding for the tablature. Altogether, application is designed for music lovers of all levels, and aims to expand their proficiency with both sheet music and tablatures!

System Requirements

Functional Requirements:

- The user should be able to insert tablature and see it visualized as sheet music.
- The user should be able to make a change in the input and see that change automatically in the Sheet Music Preview.
- The user should be able to fast forward and rewind during playback, if required.
- The user can select a measure to move to on the sheet music, such that the measure will appear highlighted at the top of the window.
- The user should be able to see what measure number they're currently looking at, with the measure number displayed on the top left of each staff.
- The user should be able to save the sheet music as a PDF.
- The user should be able to print the PDF.
- The user should be able to customize the visual output (sheet music elements), such as note spacing and staff spacing, as preferred.
- The user should be able to change the tempo of the music.

Non-functional Requirements:

- The sheet music should be displayed error-free based on the MusicXML.
- The music is played in accordance with the MusicXML.

- The system should interact with an output device in order to play music.

Use Cases

1. View Sheet Music
   Primary Actor: User (Musician)
   Preconditions: The user has successfully opened the application. The inputted ASCII tablature is correct, and is a drum set, guitar or bass tablature.
   Success Scenario:
   1. User inputs ASCII tablature.
   2. Selects “Preview Sheet Music”.
   3. User views the Sheet Music.
   4. User closes TAB2XML.

   Alternative:
   At step 3, if the user wants to save/print the pdf, they can do so by clicking the “Print” button.

2. Play Music Tablature
   Primary Actor: User (Musician)
   Precondition: The user has successfully opened the application. The inputted ASCII tablature is correct, and is a drum set, guitar or bass tablature.
   Success Scenario:
   1. User inputs ASCII tablature.
   2. Selects “Preview Sheet Music”.
   3. Selects the “Play” icon.
   4. User listens to the music.
   5. User closes TAB2XML

   Alternative:
   At step 4, the user has the choice of scrubbing (fast-forwarding and rewinding) through the music at will.
   At step 4, the user can also pause and stop the music.

3. Change the Note Spacing on the Sheet Music
   Primary Actor: User (Musician)
   Precondition: The user has successfully opened the application. The inputted ASCII tablature is correct, and is a drum set, guitar or bass tablature.
   Success Scenario:

1. User inputs ASCII tablature.
2. Selects “Preview Sheet Music”.
3. User views the Sheet Music.
4. User selects “Customize”.
5. In the GUI pop-up, user inputs preferred value into the “Note Spacing” textbox.
6. User selects “Apply and Close”.
7. User views the Sheet Music.
8. User closes TAB2XML.

Alternative:

At step 5, the user also has the choice of changing the Staff spacing, as well as Alignment!

4. Change the Tempo of the Music Playback

   Primary Actor: User (Musician)

   Precondition: The user has successfully opened the application. The inputted ASCII tablature is correct, and is a drum set, guitar or bass tablature.

   Success Scenario:

   1. User selects “Preview Sheet Music”.
   2. User inputs preferred temp in the “Tempo” textfield.
   3. User clicks the “Play” icon.
   4. User listens to the music.
   5. User closes TAB2XML.

5. Go-to a certain Measure while viewing Sheet Music

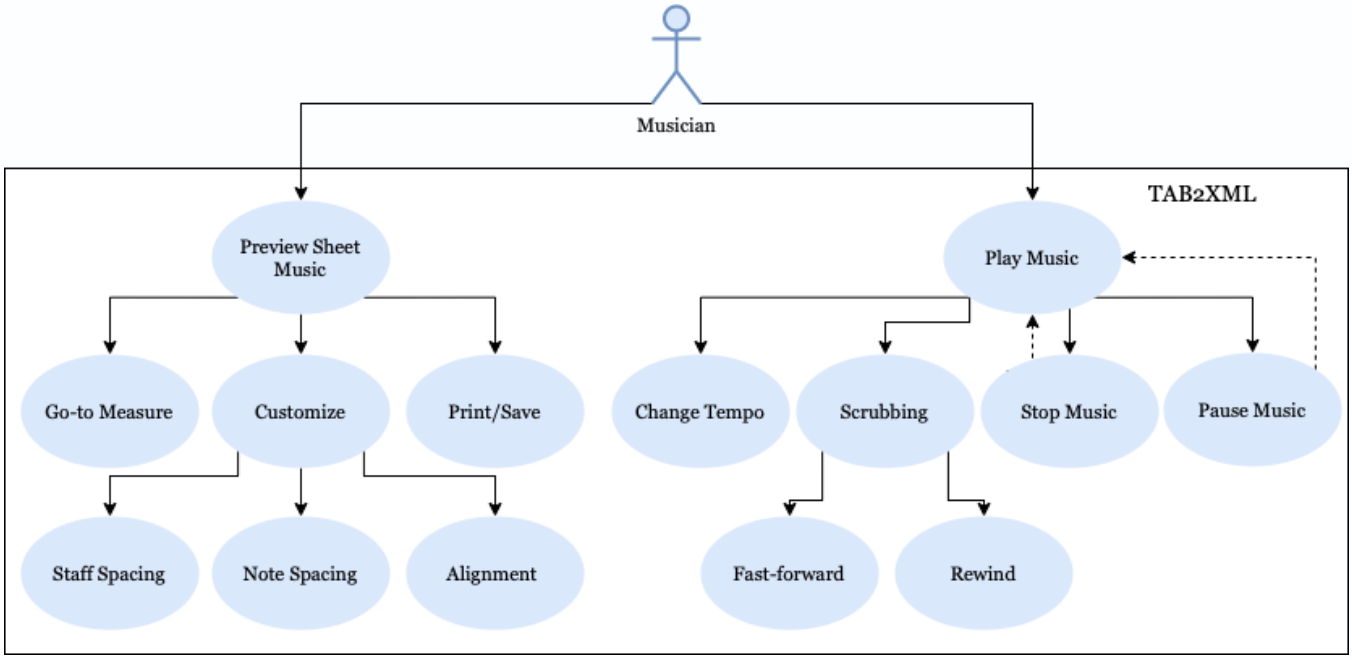
   Primary Actor: User (Musician)

   Precondition: The user has successfully opened the application. The inputted ASCII tablature is correct, and is a drum set, guitar or bass tablature.

   Success Scenario:

   1. User inputs ASCII tablature.
   2. Selects “Preview Sheet Music”.
   3. User views the Sheet Music.
   4. User inputs the needed measure number into the “Go-to Measure” textfield and presses “Go”.
   5. User views the Sheet Music, with the requested measure highlighted at the top of the screen.
   6. User closes TAB2XML.

Use Case Diagram



User Stories

1. "As a Musician, I want to be able to see ASCII tabs as Sheet Music, so that I can accurately play the music."
2. "As a new Musician, I want to be able to play ASCII tabs, so that I can preview what the music should sound like. "
3. "As a new Musician, I want to be able to edit the spacing on the sheet music in order to not overwhelm myself and make reading easier and more efficient!"
4. "As a new Musician, I want to be able to justify the sheet music elements to improve the aesthetic of my sheet music!"
5. "As a Musician, I want to be able to pause or stop the music playback, if needed."
6. "As a Musician, I want to be able to fast forward or rewind the music playback as needed."
7. "As a Musician, I want to be able to print/save the sheet music so that I can have it on hand when I'm playing instruments!"
8. "As a new Musician, I want to be able to go to a certain measure so that I can view the needed measure without extensive scrolling."

9. “As a Musician, I want to be able to change the speed of the music playback to match my level of hearing comprehension.”