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Faculty of Electrical Engineering and Computer Science

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Winter of 2022
EECS 2311 – Section Z, Lab 01
Software Development Project

Requirements Document
Due Date: March 6, 2022

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Purpose

Continuing the development of software that converts text-based tablature to a MusicXML format, Group 7 is developing new features that will add visualizing, printing, and playing of music scores as a functionality to the provided system for their term-long project in EECS 2311.

Intended Audience and Use

The primary audience is anyone interested in learning how to play music or particular pieces of music by providing tablature for a given instrument. Users can then pick from a set of functionalities such as previewing their provided tablature as a music score with options to print, save, and have it played by a virtual instrument.

System Requirements

This section includes information about the system requirements Group 7 is developing, which is broken up into two components: functional and non-functional requirements.

- ## Functional Requirements

Functional Requirement No. (FR-)	**Functional Requirement Description**
1	Provide a visualization for a given text-based tablature as a music score
2	Allow users to print the music score
3	Allow users to have the music score be played by a virtual instrument
4	Allow users to save the music score
5	Useable without an internet connection

(Figure 1 - Functional Requirements)

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- ### Non-Functional Requirements:

Nonfunctional Requirement No. (NFR-)	Nonfunctional Requirement Description
1	Capable of updating a visualization while previewing
2	Intuitive to use
3	Controllable with the keyboard
4	Aesthetically simple; not distracting from the music score
5	Space efficient
6	Relatively fast in loading speed

(Table 2 - Nonfunctional Requirements)

Use Cases

Assume for the following use-cases, the primary actor, a Musician, is any user that has a working knowledge of playing any instrument, composing or editing music, or enjoys listening to music.

Title: Display Preview
Primary Actor: Musician
Success Scenario:

1. Musician uses tablature as input.
2. System identifies tablature.
3. Musician interacts with the system to preview associated music scores.
4. System converts tablature to MusicXML format.
5. System formats the converted tablature into a music score.
6. System displays a visualization of the music score.

Extensions:

2a. System does not identify tablature.
3a. Musician is not able to preview the associated music score.
5a. System incorrectly formats converted tablature into a music score.

Preconditions: Musician is using a text-based tablature for a given instrument.

Title: Play Preview
Primary Actor: Musician
Success Scenario:

1. Musician uses tablature as input.
2. System identifies tablature.
3. Musician interacts with the system to preview associated music scores.
4. System converts tablature to MusicXML format.
5. System formats converted tablature into a music score.
6. System displays a visualisation of the music score.
7. Musician interacts with the system to play the music score.
8. System starts playing the music score with play and pause working.

Extensions:

2a. System does not identify tablature.
3a. Musician is not able to preview the associated music score.
5a. System incorrectly formats converted tablature into a music score.
8a. System fails to play the music score.

Preconditions: Musician is using a text-based tablature for a given instrument.

Title: Play Music
Primary Actor: Music Student
Success Scenario:

1. Musician uses tablature as input.
2. System identifies tablature.
3. Musician interacts with the system to preview associated music scores.
4. System converts tablature to MusicXML format.
5. System formats converted tablature into a music score.
6. System plays the correct sounds based on the interpreted music score.
7. The Student interacts with the system to play the music score.
8. System starts playing the music score with play and pause working.

Extensions:

2a. System does not identify tablature.
3a. Musician is not able to preview the associated music score.
5a. System fails to play the music score.

Preconditions: Musician is using a text-based tablature for a given instrument.

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Title: Save Sheet Music
Primary Actor: Music Student
Success Scenario:

1. Musician uses tablature as input.
2. System identifies tablature.
3. Musician interacts with the system to preview associated music scores.
4. System converts tablature to MusicXML format.
5. System formats converted tablature into a music score.
6. The Student is able to save and print out sheet music.

Extensions:

2a. System does not identify tablature.
3a. Musician is not able to preview the associated music score.

Preconditions: Musician is using a text-based tablature for a given instrument.

User Stories

"As a Musician, I want to print a music score, so that I can practice a music piece on my instrument"

"As a Musician, I want to save a music score, so that I can view it later"

"As a Musician, I want to update the tablature while previewing, so that I can see how it affects the music score"

"As a Musician, I want to control the playback of the preview, so I know I'm playing a specific part of my music correctly."