# TAB2MUSIC REQUIREMENTS DOCUMENT

**EECS 2311 SOFTWARE DEVELOPMENT PROJECT**

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## Group 11

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John Yacoub
Muhammad Sawal
Shaylin Ziaei
Akarshan Kakkar

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# 1. Introduction

## 1.1 Purpose

The aim of this project is to create an interactive interface that takes musical tablature as text input and allows the user to view its respective sheet music and to play.

## 1.2 Intended Audience

The Users of this project are musciations,and the people who are interested in music.

## 1.3 Scope

The scope includes:

- Transforming the input text tablature to sheet music
- Playing the music piece based on the tablature.
- Pause button to stop the song.
- Skipping between measures.
- Saving the sheet music in pdf format.

And does not include:

- Editing the sheet music
- Visualising sheet music and playing for instruments other than guitar and drum.

# 2. Requirements

## 2.1 Functional Requirements

The system must:

1. Convert the given tablature (and XML conversion) into visual sheet music.
2. Show the user the sheet music
3. Have playing features.
4. Reflect the type of instrument in the sheet music and in how the music sounds.
5. Allow the user to save the sheet music
6. Allow the user to print sheet music

7. Play notes from a specific measure or from the beginning.
8. Support repeat
9. Include music controls to play, pause, and skipping me
10. Have a visual output to highlight the note which is being played
11. Allow the user to change the tempo of the music
12. Allow user to customise visual output
13. Play the notes which have the same chord together
14. Plays grace notes in small duration
15. Play the first note of tied notes
16. Play tied notes in the sum of the duration of all tied notes.

### 2.2 Non-Functional Requirements (Reliability, Performance, Usability)

The program should:

1. open sheet music files securely while maintaining privacy.
2. Save sheet music files securely while maintaining privacy.
3. Function smoothly and efficiently based on the given input.
4. Be portable
5. Use a small amount of drive space.
6. Be user friendly.
7. Have fast response time.

## 3. Use Cases

### 3.1 Use Scenarios

The user is able to

1. Visualise Sheet Music: The program lets the user convert the input tabs into sheet music for better visualisation.
2. Play notes: The user should be able to play notes based on the input.
3. Play from a specific measure: The user should be able to play notes from a specific measure.
4. Save Sheet Music: The program gives the user the access to save the sheet music in pdf.
5. Edit input: The tablature can be changed without the need to close the whole program.
6. Customise visual output: Change Note Spacing, Line Spacing and Font.
7. Change tempo: The user should be able to change the speed of the notes being played.

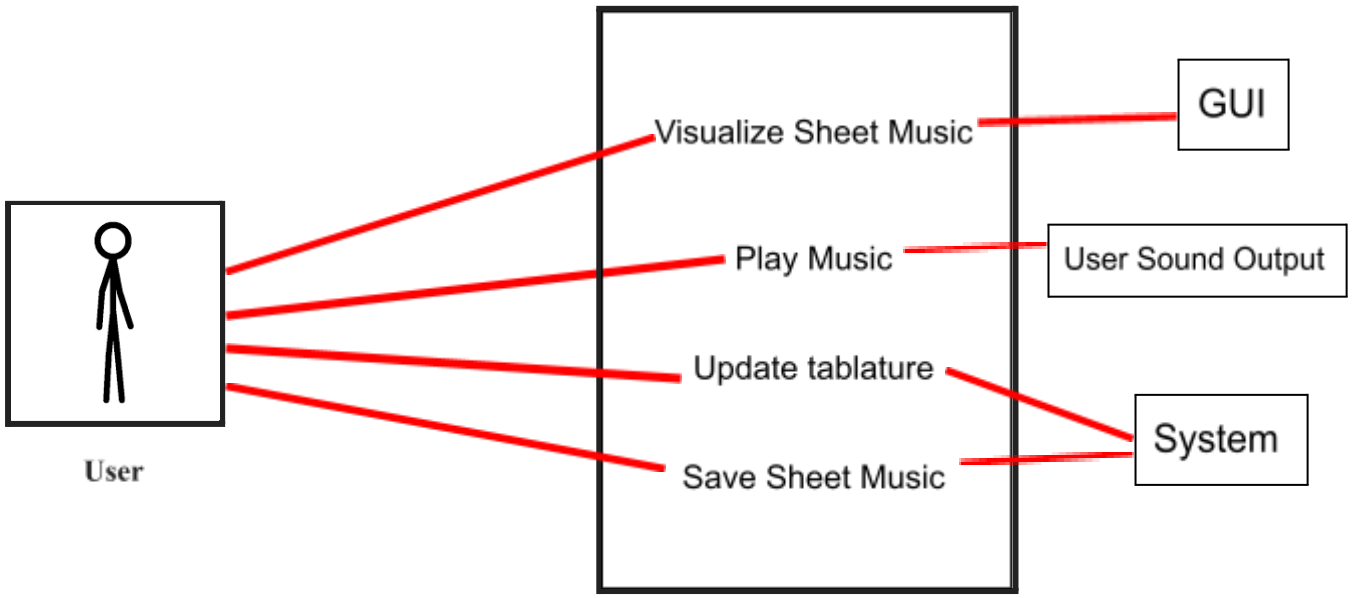
### 3.2 Use Case Table

| Title | Primary Actor | Pre Condition | Success Scenario (Post Condition) | Extensions/Errors |
|---|---|---|---|---|
| View Sheet Music | User | 1. The user should enter drum or guitar tablature as input<br><br>2. The user should Click on Preview Sheet Music button | View Sheet Music | Sheet music not printed |
| Play Music (from start) | User | 1. The user should enter drum or guitar tablature as input<br><br>2. The user should press on Preview Sheet Music<br><br>3. The user should press Play button | User inputs tablature and plays music | Notes don't play or play in correct order |
| Play Music (from measure) | User | 1. The user should enter drum or guitar tablature as input<br><br>2. The user should press on Preview Sheet Music<br><br>3. The user writes down the desired measure in the Go to Measure box<br><br>4. The user presses Go button | User is able to skip between measures | Unable to play from a specific measure |

| | | | | |
|---|---|---|---|---|
| Save Sheet Music | User | 1.The user should enter drum or guitar tablature as input<br><br>2.The user should press Save MusicXML<br><br>3. The user should choose the name and location for the sheet music pdf. | User is able to save sheet music as a pdf file | Unable to save sheet music as pdf format |
| Change Input | User | 1.The user should close the sheet Music window<br><br>2. The user should change the input<br><br>3.The user should Press Preview Sheet Music again | User is able to edit tabs without having to re-run the program | User has to close the program before he can change tabs |
| Customise Visualise Output | User | 1.The user should enter drum or guitar tablature as input<br><br>2. The user should press on Preview Sheet Music button<br><br>3. The user should click on Edit Style button<br><br>4.The User can customise the desired visualise changes | The User is able to customise:<br>1.Note Spacing<br>2.Line Spacing<br>3.Font | Changes do not apply<br>or<br>Make an unorganised appearance |
| Change the Tempo | User | 1.The user should enter drum or guitar tablature as input<br><br>2. The user should press on Preview Sheet Music button<br><br>3. The user should click on Edit Style | The speed of the notes being played changes | The speed does not change or the speed is not how it should be |

| | | | | |
|---|---|---|---|---|
| | | button<br><br>4.The User can change the tempo | | |

### 3.3 Use Case Diagram



### 3.4 User Stories

- ☐ As a musician or someone that is interested in music, I want to be able to visualise sheet music based on the guitar or drum tablature.

- ☐ As a musician or someone that is interested in music, I want to be able to  save the sheet music as a pdf.

- ☐ As a musician or someone that is interested in music, I want to have the ability to play the notes according to the sheet music that was generated.

- ☐ As a musician or someone that is interested in music, I want to have the ability to play music from a specific measure.

- ☐ As a musician or someone that is interested in music, I want to be able to play the music, pause it whenever I want and then continue playing from where I paused.

- ☐ As a musician or someone that is interested in music, I want to be able to change the speed of the music which is being played based on the tablature.

- ☐ As a musician or someone that is interested in music, I want to be able to customise the visual output of the program.

- ☐ As a musician or someone that is interested in music, I want to be able to track the notes which are being played by the program.