TAB2XML

User Manual

Group 6

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1. System Overview

About TAB2XML

TAB2XML is a Java application that converts music tablature into MusicXML, a file format that represents musical notation. However, reading a MusicXML file is a tedious task. The new update introduces the ability to preview any specific MusicXML file created from a given tablature into Music Scores for a better understanding of the tablature.

Additionally, the new update includes three other features. Playing the notes, ability to print/save the music sheet as a PDF file and highlight a specific measure for navigation purposes.

Currently, only simple guitar and drum tablature are supported, but more instruments and additional support for more complicated tablature will be added in future releases.

Intended Use

This application is intended to help both novice and expert music learners by allowing them to see a tablature in three different forms: tablature, music XML, and music sheet.

2. Installation Instructions

In this section, we are going to cover the step-by-step instructions on how to install and run the TAB2XML software in eclipse IDE. For this purpose, we assume that the Java 17 and JavaFX library is already installed on the IDE and the user is able to access GitHub from their eclipse IDE. Additionally, the Gradle is installed and ready to use. The instructions are written in English, followed by reference images. At the end of the section, you can find a link to the instruction video on YouTube.

Installation on Eclipse IDE

1. Open eclipse and create/ navigate to a new workspace. Click on launch (figure 1).
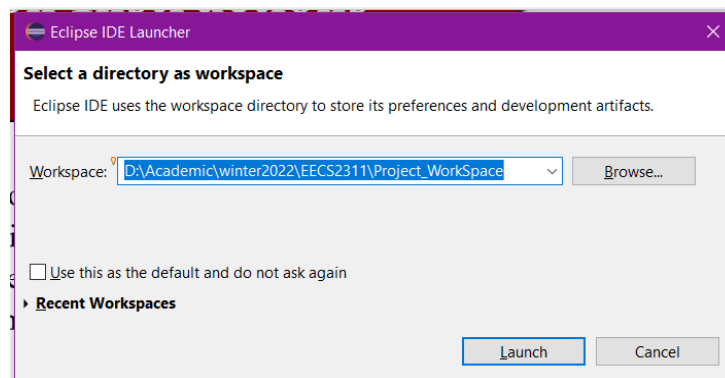
Figure1. Launching eclipse workspace.

2. In the Package Explorer (usually on the left-hand side) select "Import projects" (figure 2). You can also open the import window by clicking on File → import…
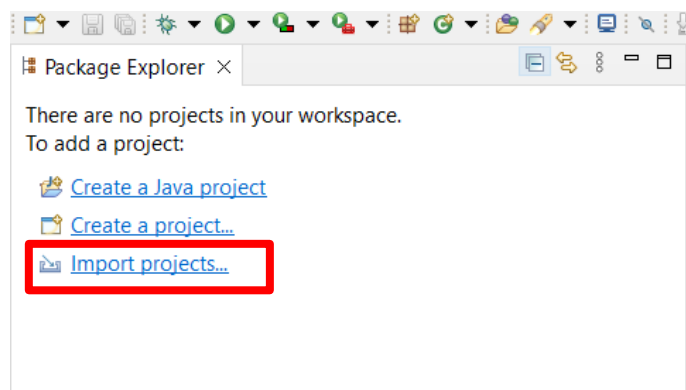
Figure 2. Package Explorer → import projects…

3. In the import window, select Git → Projects from Git. Click Next (figure 3)
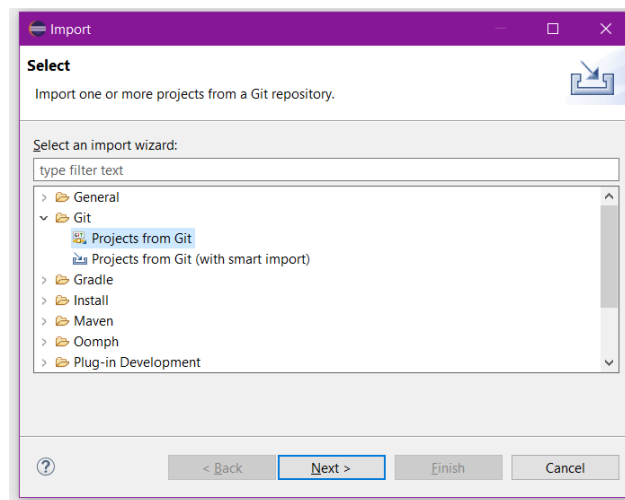

Figure 3. Import window, select Projects from Git.

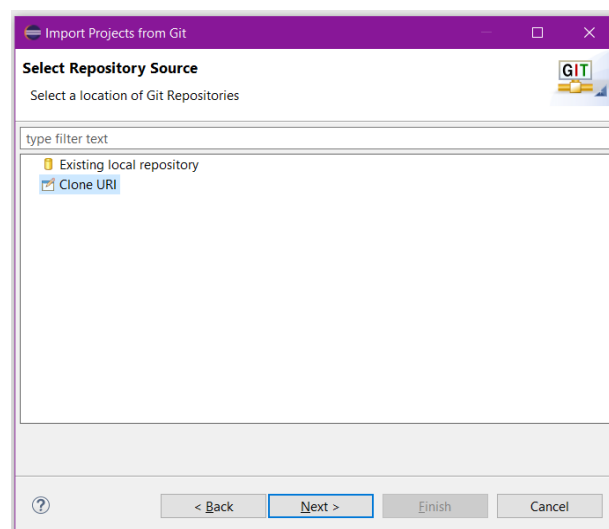4. Then select "Clone URI" →Next. (Figure 4)

Figure 4. Select Clone URI.

5. In the URI enter the following link:

https://github.com/ElmiraOn/EECS2311_group6

your import window should look like something like figure 5 with your username and password instead. (If your user name and password are not set up check the first lecture on how to access GitHub using eclipse). After double-checking the fields, click Next.
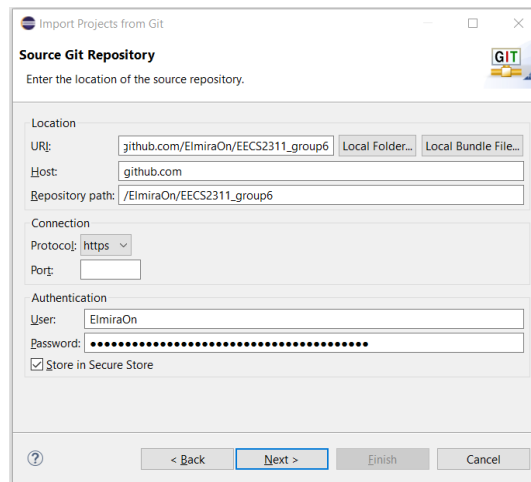
Figure 5. Entering the URL of the repository

6. In the next window, keep default and click Next again (Figure 6)
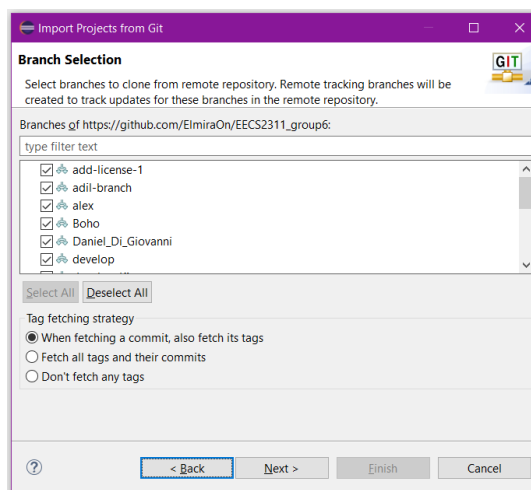

Figure 6. Branch selection

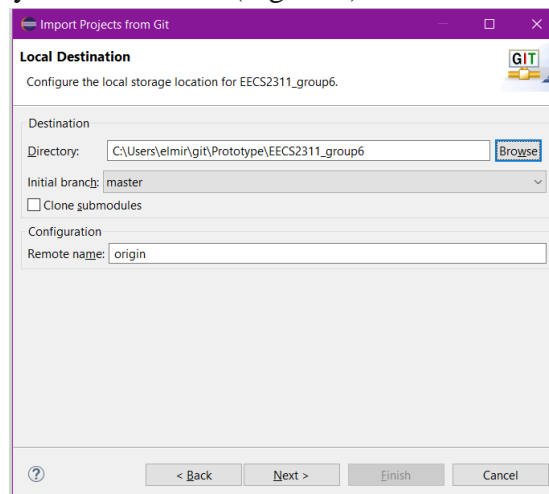7. Select the directory and click Next (Figure 7)

Figure 7. Setting the directory.

8. Wait for the cloning process to finish.

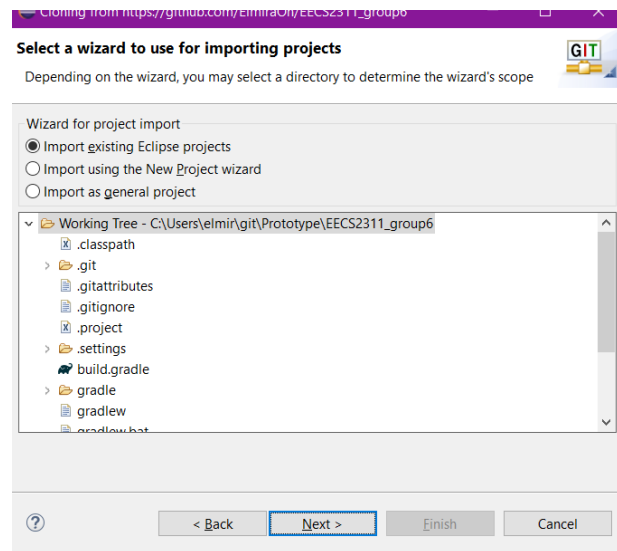9.   Keep the default and click next (figure 8)

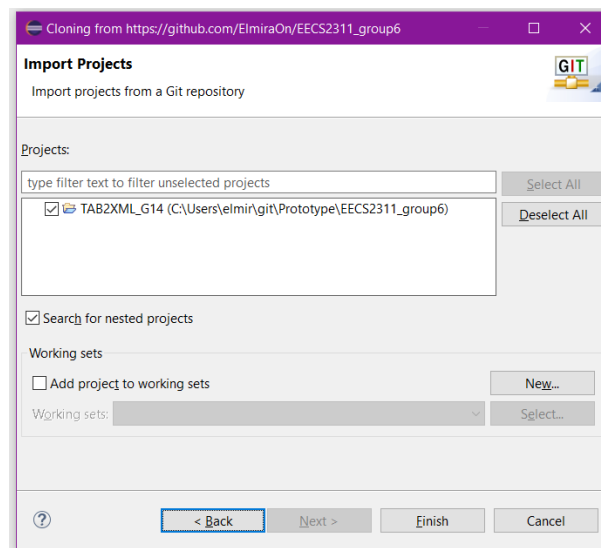Figure 8. Selecting Wizard

10. Click Finish

Figure 9. Final window for import

11. You should be able to see the application project displayed in Package Explorer.
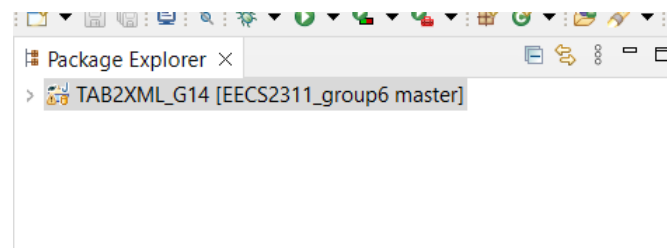

Figure 10. Project is displayed in the package explorer.

3. Running the prototype

Running through Gradle Task Window

1. We Run this project through Gradle. To do this we need to open the "Gradle Task window" by Window →show view → others → search for the Gradle task in the search bar → open.
   It will take a while for Gradle to build the project. At the end, the project folder will be displayed in the Gradle Task window
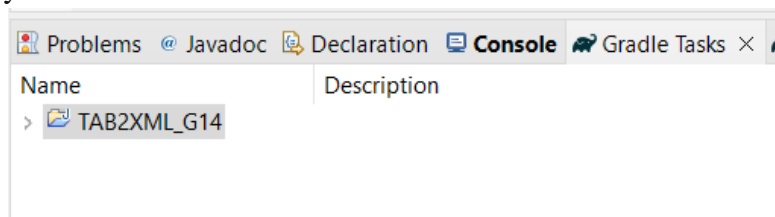
Figure 11. Project folder in the Gradle Task window.

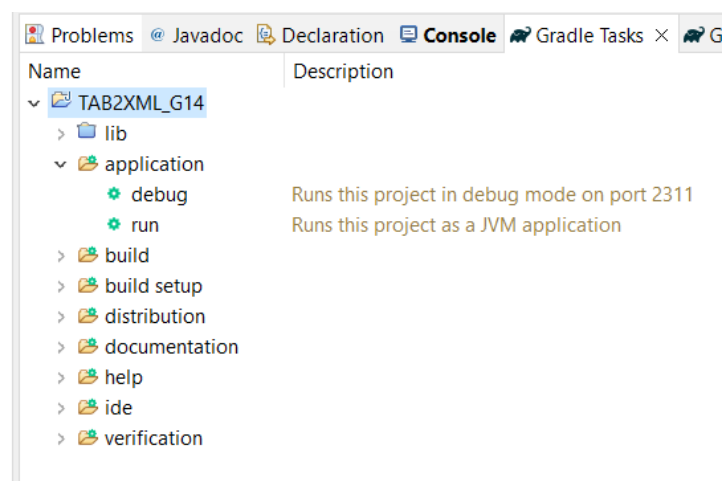2. To run the prototype open Tab2XML_G14 → application → Run in the Gradle task window

Figure 12. Navigating to "run" functionality in the Gradle task window.

Error Handling

When you open the project in the Gradle task window or run it for the first time, it is likely that you will face some errors. In this section we will discuss some methods you can try to fix these errors:

1. Under Preferences → Java→ Installed JREs make sure you have JRE 17(figure 13).
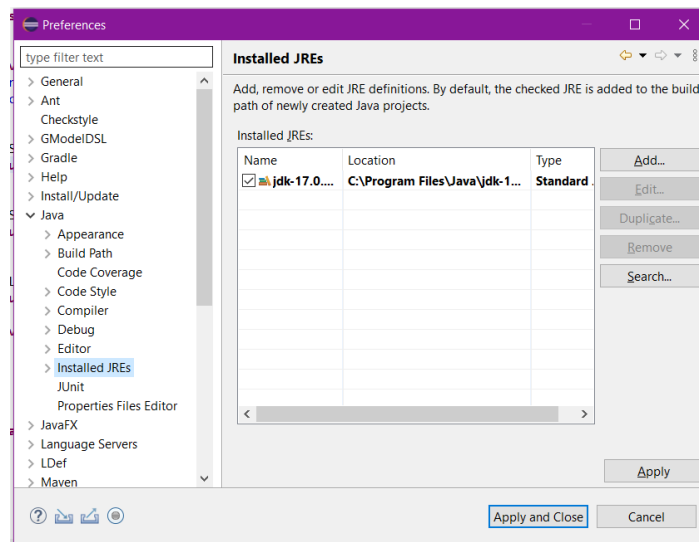

Figure 13. Installed JRE

2. Under Preferences → Gradle selects Gradle Version 7.3.3 (or 7.1.1) and under Advanced Options, point Java Home to JDK 17 by navigating to where you have stored JDK17 (figure 14).
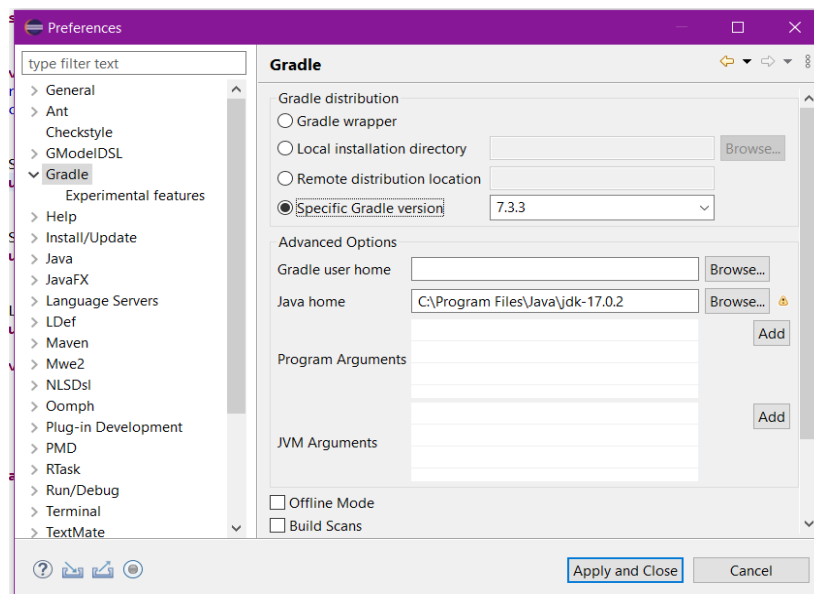
Figure14. Gradle setting

3. In Eclipse Package Explorer, click on the three vertical dots.
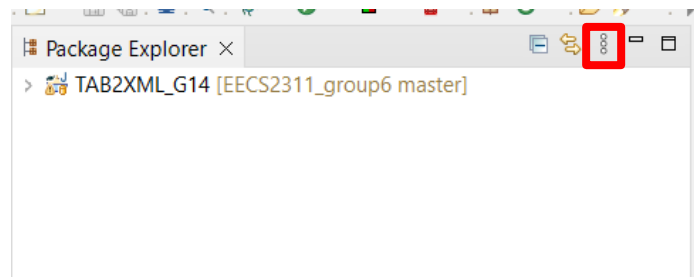

Figure 15. Opening the menu in the package explorer

select Filters, and uncheck the "resources", "Gradle build folder", and "Gradle subprojects" so that they are visible
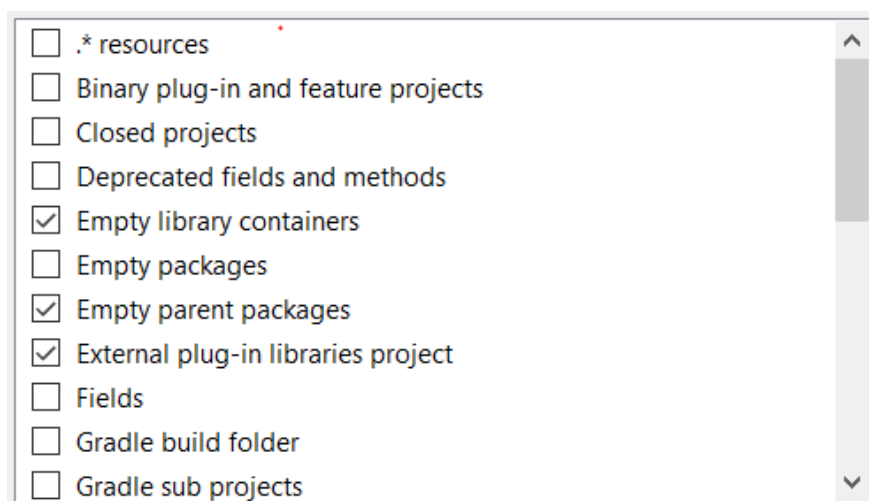

Figure 16. The "Java element filter" window

4. Right Click on the project → Gradle → Refresh Gradle Nature
5. If there are still errors when running the project we suggest restarting the eclipse.

4. Using the prototype

Currently, the prototype works only with the following two examples:

1. Guitar Tablature:

```
|----------0-----|-0--------------|
|---------0---0---|-0--------------|
|-------1-------1-|-1--------------|
|-----2----------|-2--------------|
|---2------------|-2--------------|
|-0--------------|-0--------------|
```

2. Drum Tablature:

```
CC|x--------------|--------x-------|
HH|--x-x-x-x-x-x-x-|---------------|
SD|----o-------o---|oooo-----------|
HT|---------------|----oo---------|
MT|---------------|------oo--------|
BD|o-------o-------|o-------o-------|
```

Additionally, you can use the following files under src/test/resources/system:

❖ bendTest1.txt (for Guitar)
❖ Ex38.txt (for Guitar)

Instrument: Guitar

By entering the Guitar tablature from above, the system is able to:

1. Properly convert it into a music sheet.
2. print the music sheet or save it as a PDF file in the print dialogue (currently only works once)
3. Play the notes and chord from beginning to end
4. Vertical scrolling for long measures
5. By entering a measure number, highlight the corresponding measure on the screen
6. Allow users to return to the input window and update the tablature without the need to close the current preview window.

Unavailable functionalities: Pausing the playing capability

Previewing the music sheet

1. Run the application as noted in the previous section (Gradle task window →
    application → run). This should open the main application window and you see that
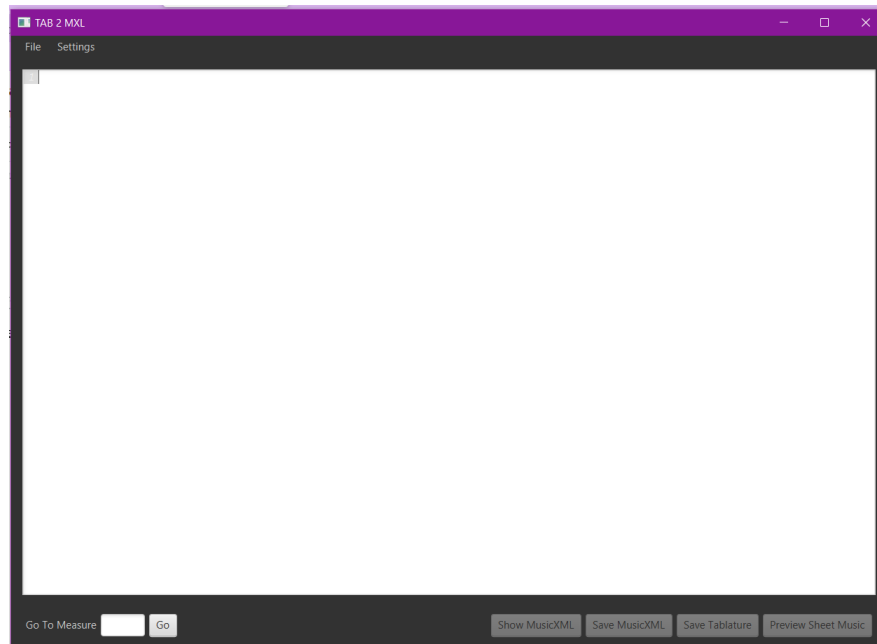   buttons are disabled:

Figure 17. The main application window/ input window

2. In the input area enter the guitar tablature from above by simply copy pasting so
    saving the tablature file as a .txt file and use File → open and navigate to the location
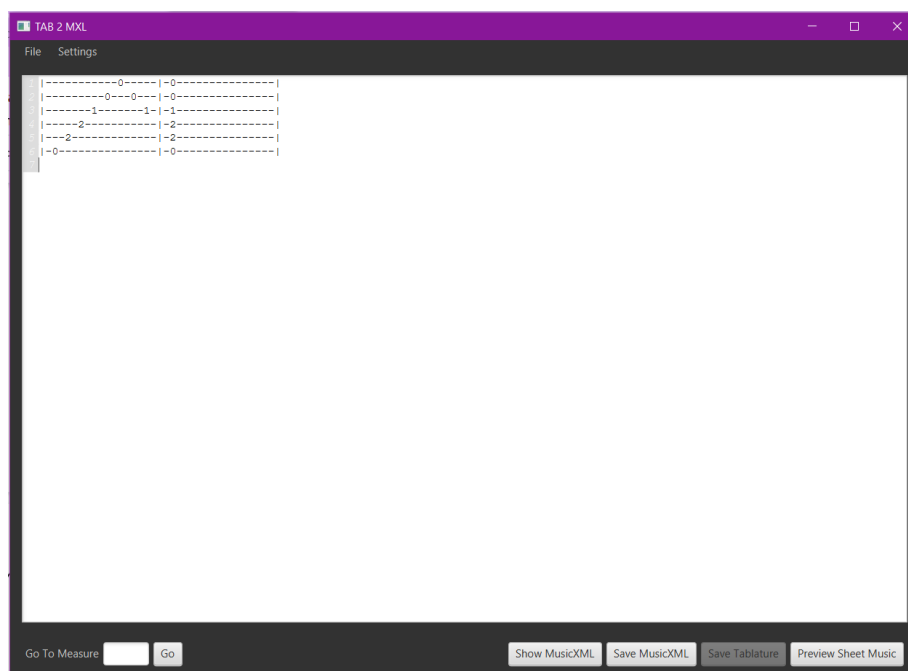   of the saved file:

Figure 18. Entering tablature enables the buttons

Entering the input in the correct format enables the buttons at the bottom. You can use "Show MusicXML" and "Save MusicXML" to view and save the MusicXML created using input tablature. For the purpose of this documentation, we focus on the new update: "Preview Sheet Music". Based on MuseScore Software this tablature corresponds to the following music score:
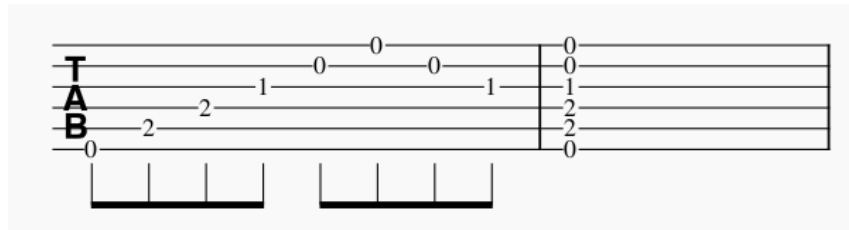

Figure 19. The Guitar tablature conversion in MuseScore app.

3. Clicking on "Preview Sheet Music" opens a new window with a Music score corresponding to the input tablature displayed on the screen. Additionally, you can see multiple buttons with different functionalities:
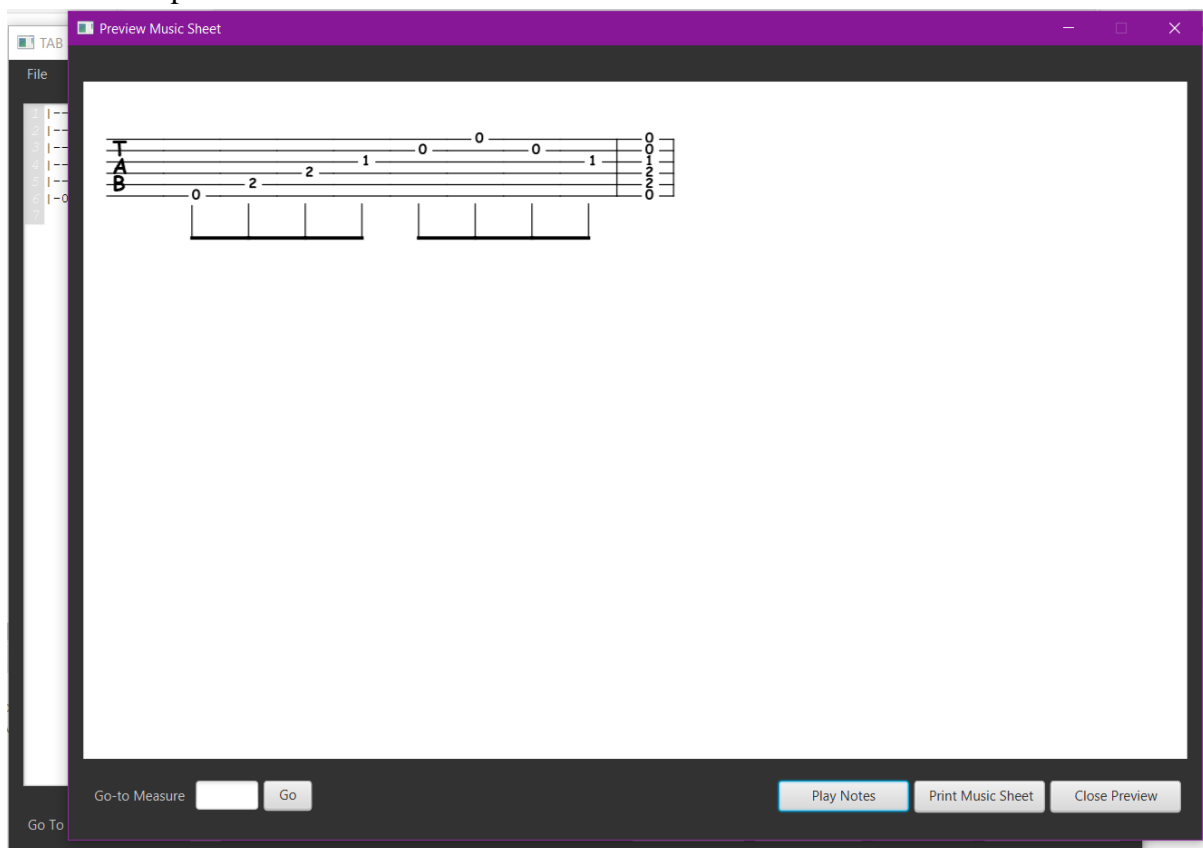

Figure 20. Clicking on "Preview Music Sheet" opens the preview window.

Playing the Notes

Clicking on the "Play Notes" button plays the notes from beginning to end. Pause and playing from the specific measure will be available in future releases. Please note that while the notes are being played, the other functionalities are not usable.

Printing and saving the music sheet

Clicking on the "Print Music Sheet" button opens a print dialogue window where you can either select to print the music sheet using your preferred printer or save it as a PDF file.
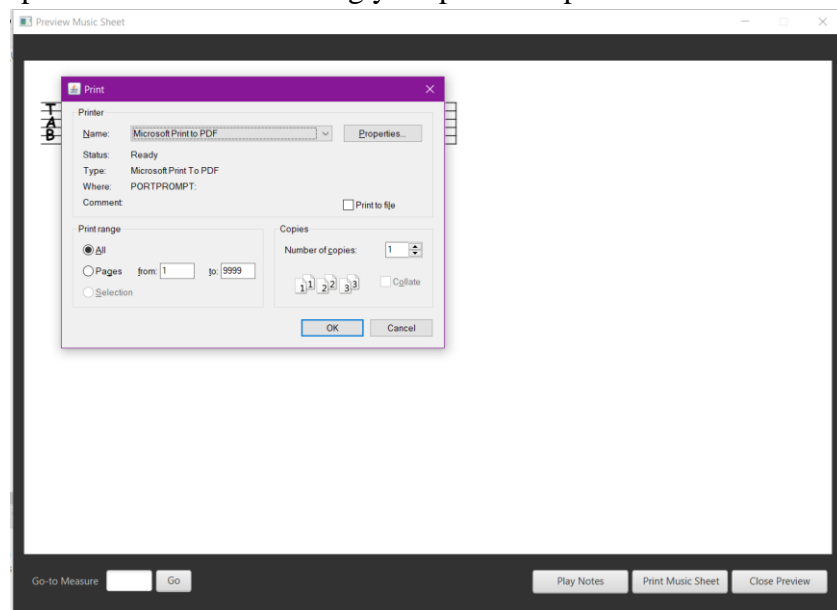

Figure 21. Clicking on "Print Music Sheet" opens print dialogue.

**Note: if you decide to save as PDF, keep in mind that the saved .pdf file does not open automatically so make sure you take a note of the directory you are saving to which you are saving the file. Also, in the current version the print button can be clicked only once in the preview window due to some bug. This problem will be fixed in the future versions.

Navigating to specific measure

On the left bottom coroner, you can enter a specific measure number and click on "Go" button. The system will highlight the specified measure:
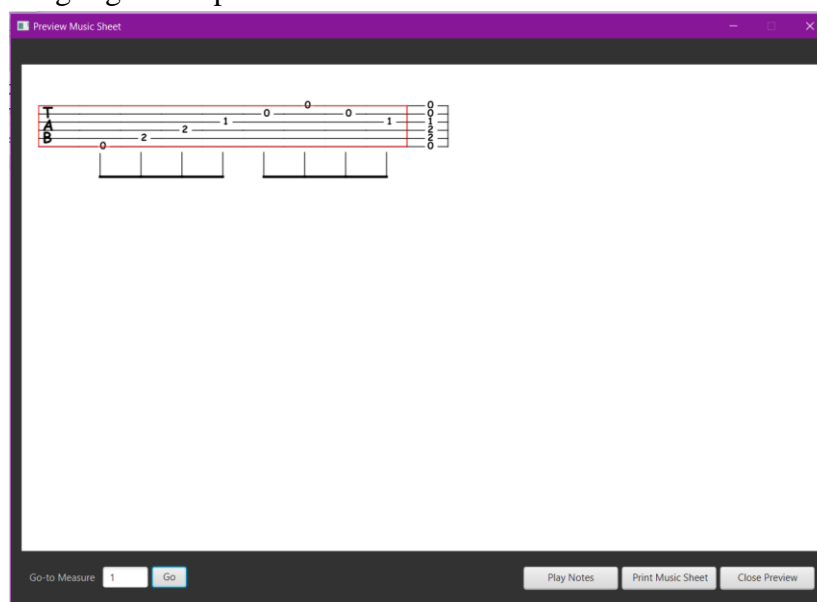

Figure 22. Entering a measure number and clicking on "Go" will highlight that measure

Updating the Tablature

To Update/ change the tablature you can:

1. simply close the current preview window by clicking on either close button or x on the top right corner. This will result in a confirmation message:
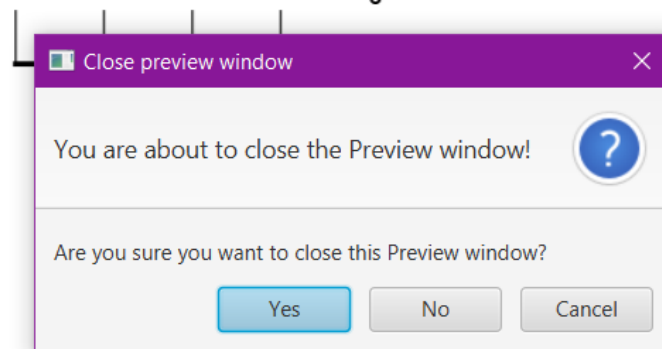

Figure 23. Confirmation message

Upon confirming the intention to close the window, you will be directed to the input window where you can make changes to the current tablature or enter a new tablature.

2. You can either minimize or move the current preview window and select the input window underneath it. Then you can make the changes you want and click on the preview button again to open a new preview window reflecting the changes you made. By using this functionality, you can compare the two preview windows to see the how your changes are reflected on the music score:
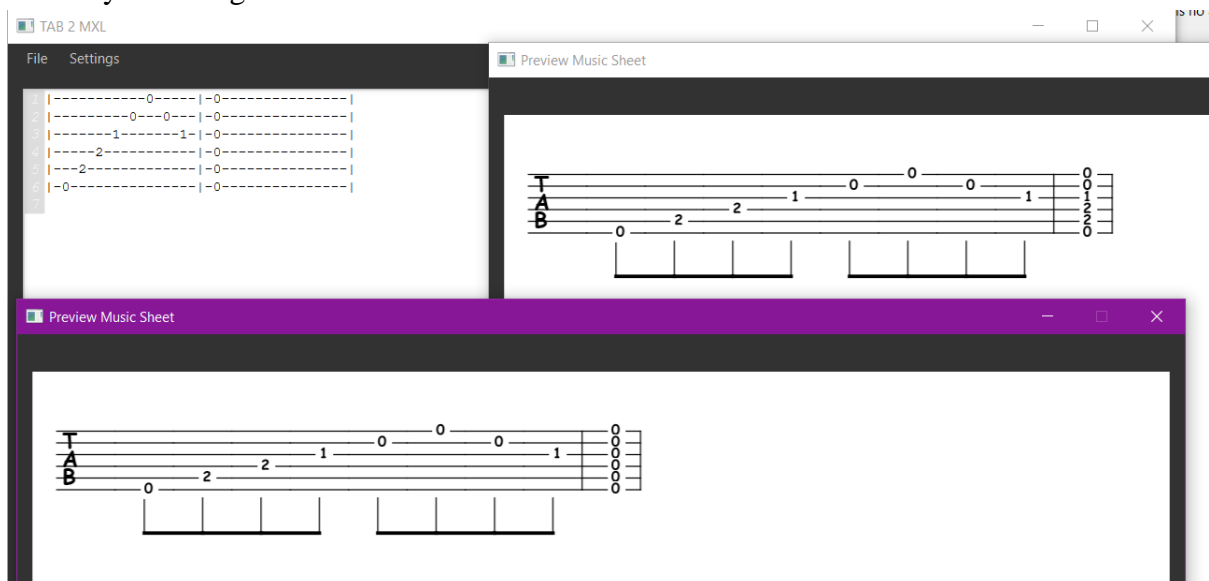

Figure 24. multiple preview windows to compare the changes made to teh input tablature.

Instrument: Drum

By entering the Drum tablature from above, the system is able to:
1. Properly convert it into a music sheet.
2. print the music sheet or save it as a PDF file in the print dialogue (currently only works once)
3. Play from beginning to end
4. Vertical scrolling for long measures
5. By entering a measure number, highlight the corresponding measure on the screen
6. Allow users to return to the input window and update the tablature without the need to close the current preview window

Unavailable functionalities: Pausing the playing capability

Previewing the music sheet

Playing the Notes

Printing and saving the music sheet

Navigating to a specific measure

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