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OFFICIAL USER MANUAL

EECS2311 SOFTWARE DEVELOPMENT PROJECT

GROUP 1:

Abdelrahman Altamimi

Hieu Le

Mahdiar Shoraka

Prabjot Dhaliwal

Yongjie Ba

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1. About TAB2XML and Intended Use:

TAB2XML is a software tool used to convert text-based tablature files to MusicXML files with its corresponding visual representation in downloadable sheet music, and playable audio of the music itself. Many other music programs can easily use the MusicXML file due to its high compatibility. The visual sheet music feature is currently supported for Guitar, Bass and Drums tablatures.

The intended user can start using the software by selecting the text-based tablature on their computer then the program will output the MusicXML. Before using the software it is necessary for the user to check that the text-based tablature is written in the standard musical notations to ensure that the program successfully converts the file.

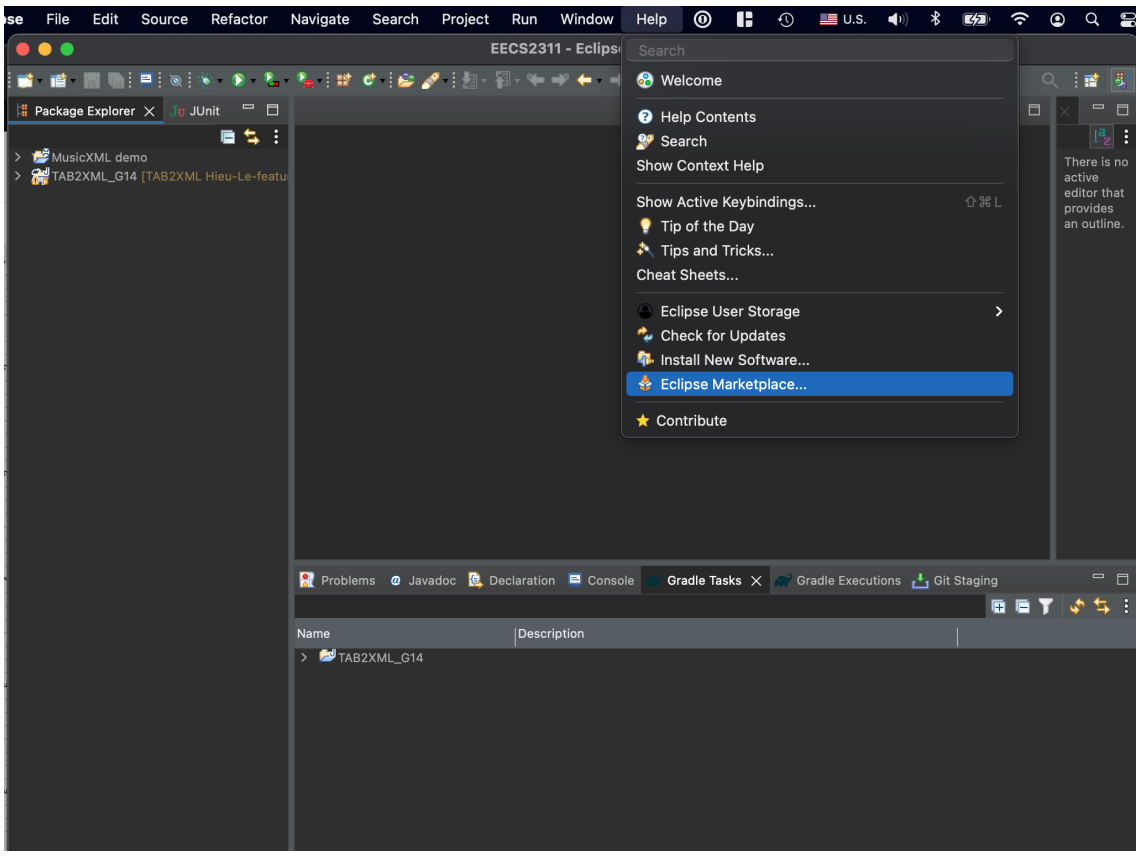
This program is mainly aimed to help musicians or any individual who's looking to translate their tablature file to a music XML file which can easily be played or edited on various music software.

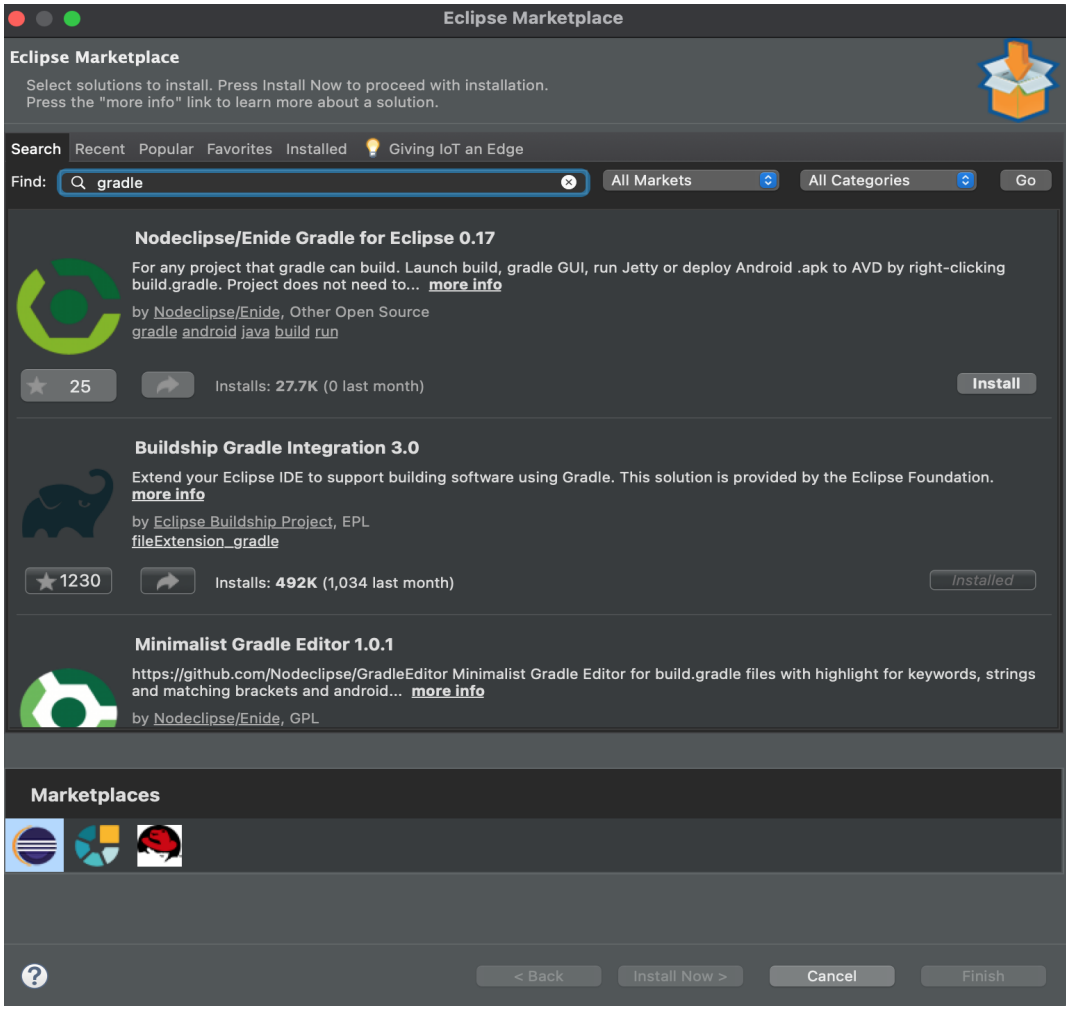
2. System Requirement

Available Disk Space	50 MB
RAM	256MB
Java Version	Java 17
Operating System	Windows, Linux, macOS, or any platform with Gradle

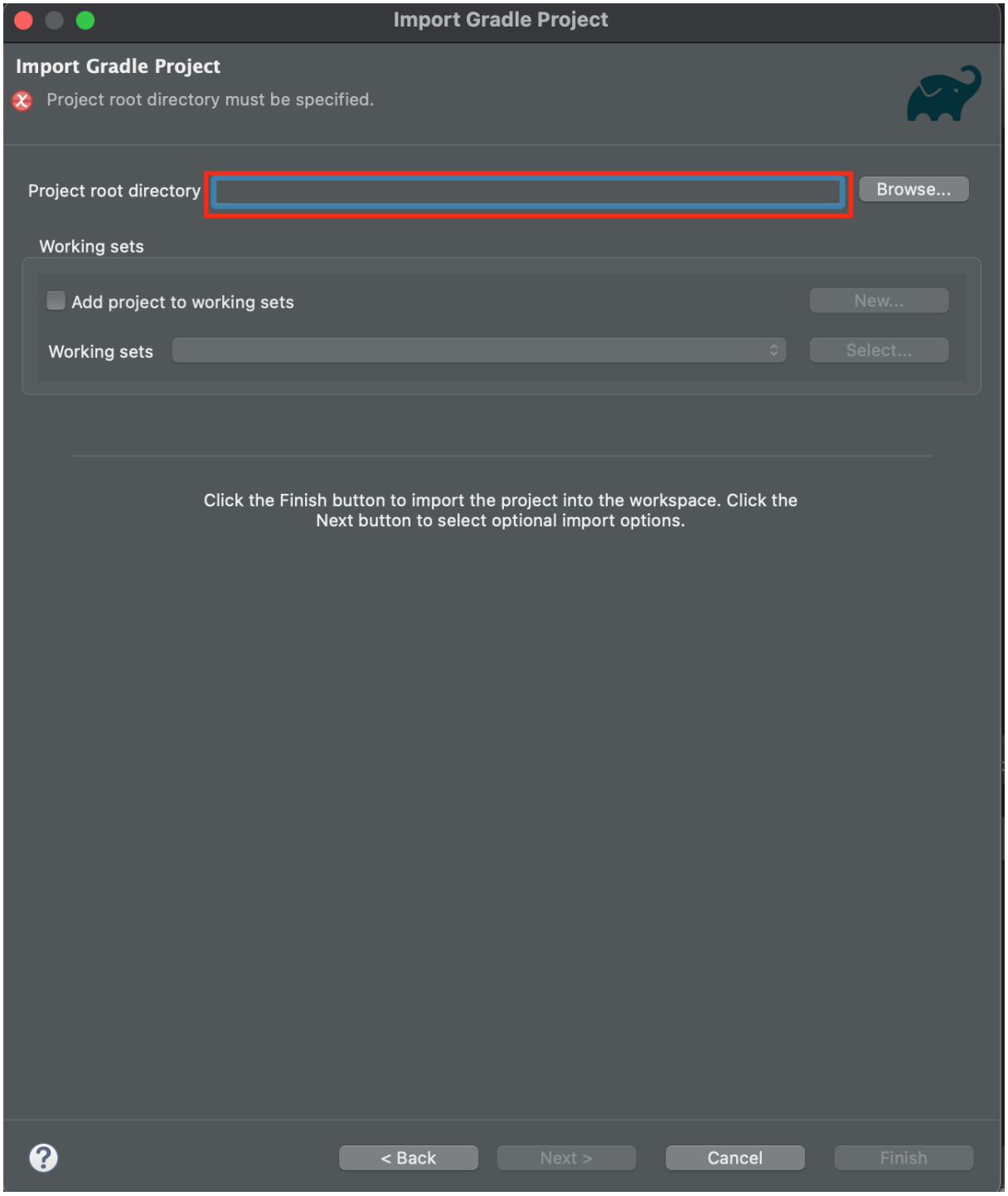
3. Installing TAB2XML by using Gradle

TAB2XML doesn't have any specific restrictions and therefore can be run on any IDE of your choice. However, for demonstration, we only install and run the program via Eclipse. Below is the instruction on installing it: Step 1: Since this is a Gradle project, the Gradle plugin has to be installed on Eclipse before running the program. To install the plugin, simply navigate to Help -> Eclipse Marketplace. After that, look for and install **Buildship Gradle Integration**. If you have already installed Gradle, you can skip this step.

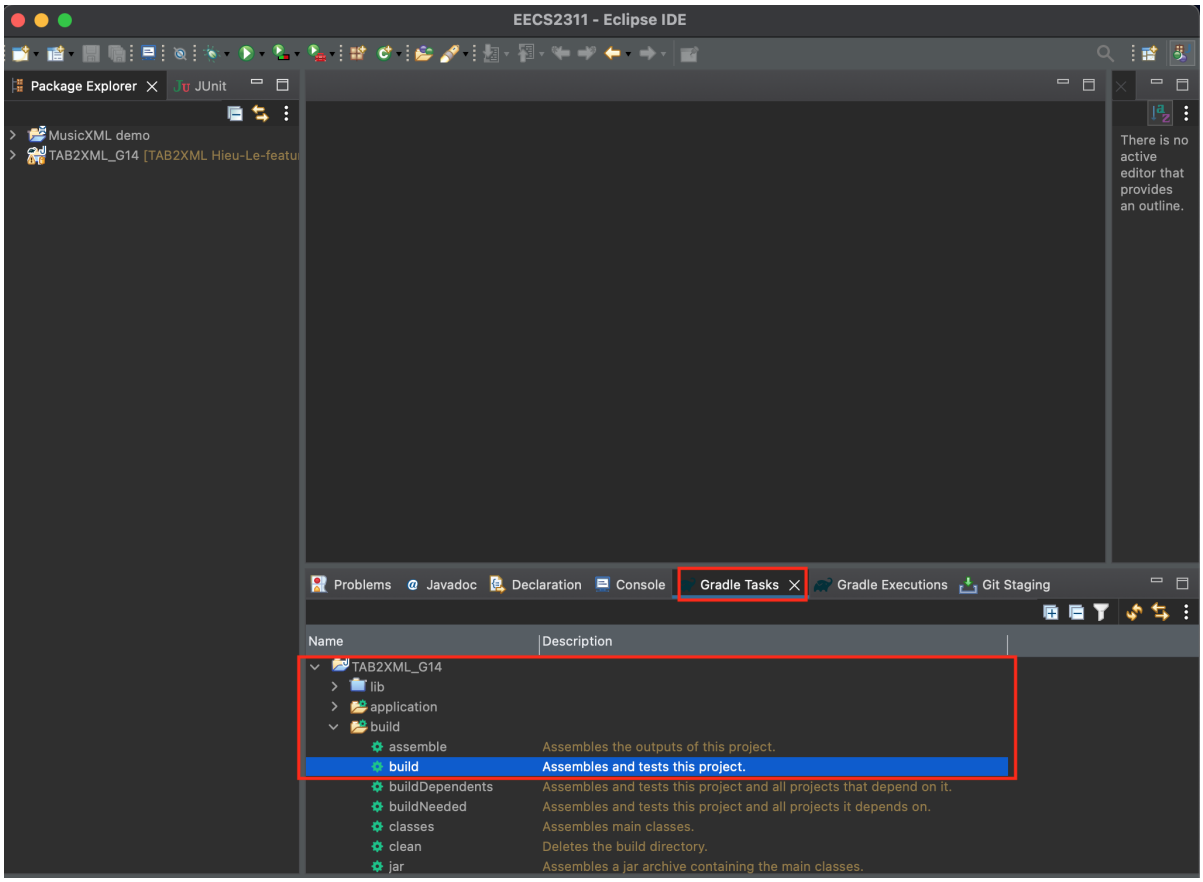




Step 2: After installing Gradle, we need to import the project into Eclipse. To do so, first access the project from Github via this link: https://github.com/Baye0110/TAB2XML. There, click the green **Code** button and **Download the zip**. Now that you have a copy of the project on your local device, go to Eclipse then File -> Import -> Gradle -> Existing Gradle Project. Once you reach this window (image below), input the location where you downloaded the project into the **project root directory** and press **Finish**.


Import Gradle Project
Import Gradle Project
Project root directory must be specified.
Project root directory
Browse...
Working sets
Add project to working sets
New...
Working sets
Select...
Click the Finish button to import the project into the workspace. Click the
Next button to select optional import options.
< Back
Next >
Cancel
Finish

Step 3: Once the project finishes importing, look below to find the **Gradle tasks** tab. There you will find your newly imported program, press the arrow -> **build** folder -> build



Step 4: Finally, after the project finishes building, navigate to the **application** folder above, press the arrow -> run

4. How to use TAB2XML

Run the application using Gradle Tasks. After running a Window called TAB 2 MXL pops up which gives the user multiple options (buttons) including Show Music XML, Save MusicXML, Save Tablature, Preview Sheet Music. The user should first upload their file using File -> Open. The user can also paste the tablature text directly into the next screen. After uploading, users can use the mentioned options as they desire. For terminating they can just simply close the application's window.

Once you put your text input, the system identifies errors in your input if any exist, and it notates them using a colour-coded highlighting system.

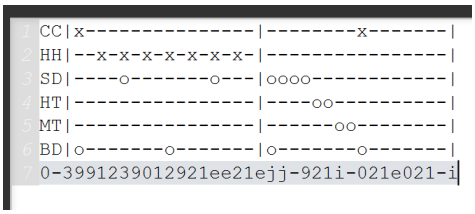
There are 3 levels of highlighting:

1. Red highlight: This is used to identify errors that may critically affect the output of the conversion.
2. Yellow highlight: Errors with this highlight are less critical, but we do not guarantee an accurate output with these errors.
3. Grey highlight: This highlight is used to identify content that may have little to no effect on the output.

Detailed below are a few examples of different error highlighting scenarios:

- Grey highlights**:** “This text can’t be understood.”.(Fig. 1)

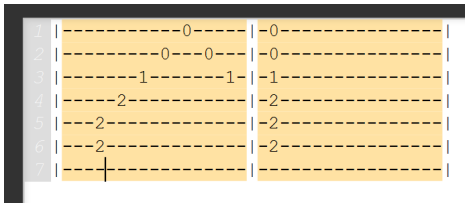
  This is used to identify text which was not identified to be a score object (i.e measure, note, repeat instruction, e.t.c.)



(Fig. 1)

- Yellow highlight: “A guitar measure should have 6 lines.”(Fig. 2)

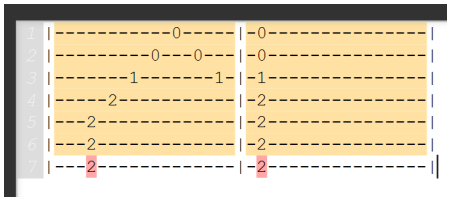
  As a warning, if you get such an error on a measure that seems to be accurate, make sure no text is written on the side of the measure as this makes the system identify it as two different measures. Reference the Input Requirements section of this manual for more information regarding this.



(Fig. 2)

Red highlight: “This annotation is either unsupported or invalid” (Fig. 3)

This is used to identify elements that are either not supported or not identified as valid measure annotations.



(Fig. 3)

Note: More error scenarios may occur, but they are all categorized into the three groups identified above.

For a more accurate output, be sure to resolve any errors highlighted in red or yellow. The grey errors can usually be ignored without consequence.

Tips for resolving errors:

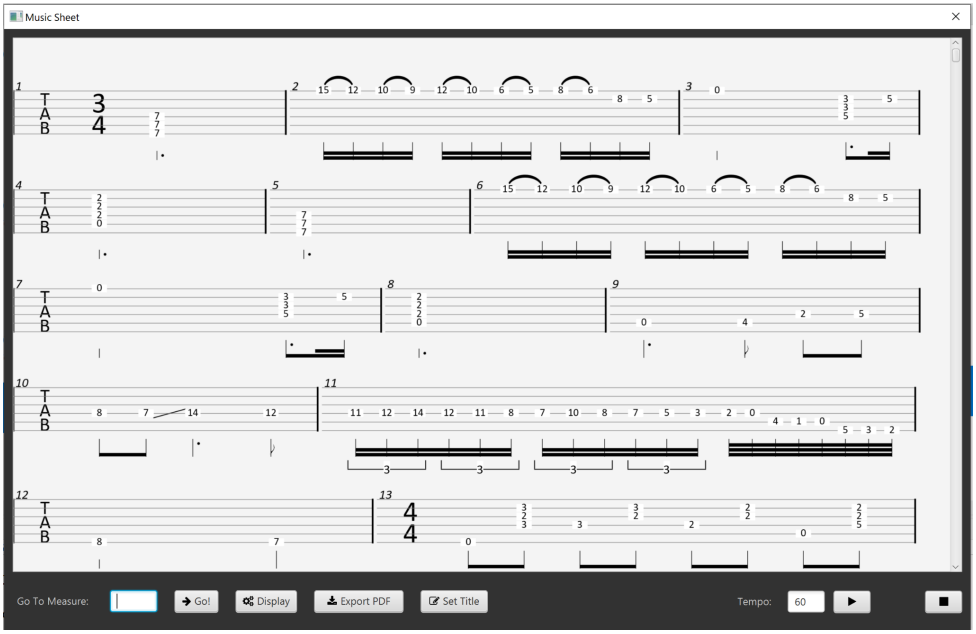
- Be sure the number of lines of the instrument is right.
- Remove all unrecognizable notations in tablature and replace them with a dash ‘-’.
- Remove all text placed around measures, except for measure instructions (time signature and repeats)
- (How to fix errors - Instructional Video: https://drive.google.com/file/d/174oWzswHkvnTvyask_AUpYKRjKmuz3_m/view?usp=sharing)

Note: If you removed all yellow and red highlights, the score is ready to be converted. However, if there are no yellow or red highlights in the score, you can skip this step.

4.1 How to Use: [Preview Sheet Music]

Upon selecting an appropriate tablature file or pasting the tablature directly into the application, simply click the "**Preview Sheet Music**" to view the sheet music. The sheet music will be displayed in a fixed window. In the case that the score is too long to fit within the height of the screen, the user can scroll through the sheet music to view certain measures at a time. To return to the initial screen the user can close this window, or click [**Exit**]

4.2 How to Use: [Music Playback]



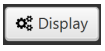
While previewing the sheet music, the user can both play and pause the audio of the sheet music as they please using the two provided buttons [**PLAY**] and [**PAUSE**] and [**STOP**]

-  [**PLAY**]: Triggers the music to play from the start of the song or currently selected note. *Visibility: When music is not playing.*
-  [**PAUSE**]: Will cause the music to stop playing if it is already playing. *Visibility: When music is playing.*
-  [**STOP**]: Clicking the stop button will lead the music to finish playing, and the music will play from the beginning the next time the [**PLAY]** button is clicked if a note is not selected in the meantime.

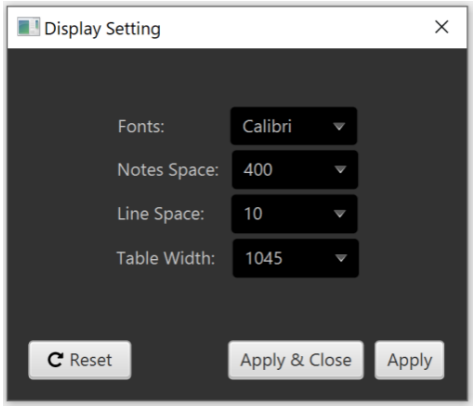
- **Note Selection:** While the music is in a **[PAUSE]** or **[STOP]** state, a note on the screen can be selected by clicking on any part of the note element. The next time the **[PLAY]** button is clicked, the music will play beginning from the selected note.

Note: the Pause button shows up only when music is playing or it will show after the music is finished. The current note played will be highlighted

4.3 How to Use [Customize Display]

- 

[Display]: a new Display Setting window will pop out when the user clicks the display button in Sheet Music Previewer. This will permit the user to change the appearance of the sheet music by selecting various values underneath each drop-down menu.



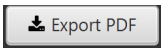
[Reset]: Click to reset the settings back to default (the displayed settings in the image are default).

[Apply]: Click to apply and see the changes without closing the settings window.

[Apply & Close]: Click to save the changes and close the display setting at the same time.

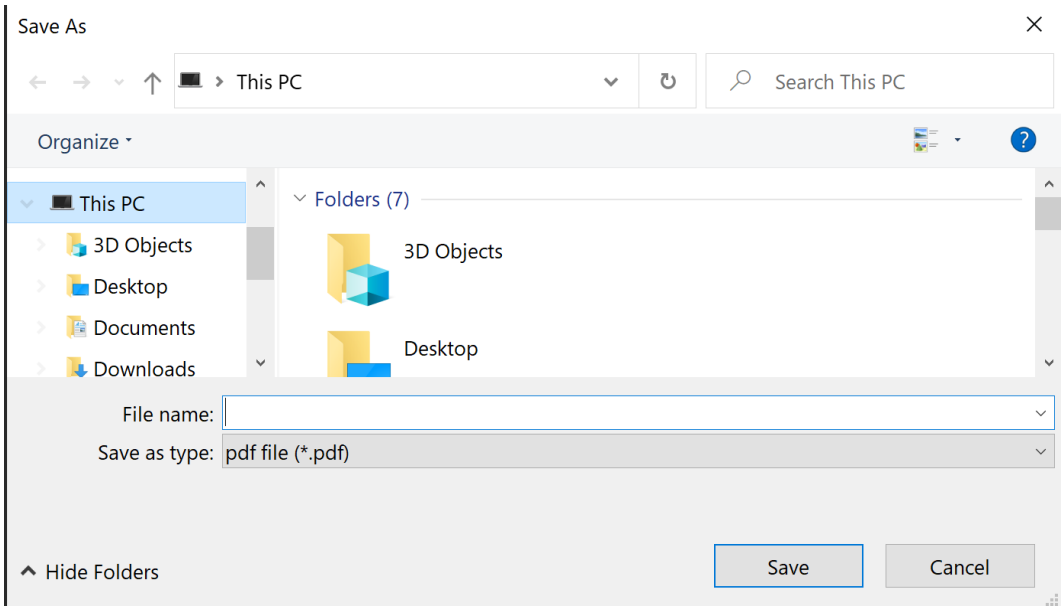
- **Setting Descriptions:**
  - **Font:** Change the font of the time signature, fret numbers, time modification labels, etc.
  - **Note Space:** Change the horizontal spacing between the notes.
  - **Line Space:** Change the vertical spacing between the staff lines (doubling this value will double the height of the staff and notes)
  - **Table Width:** Change the page width of the score.

4.4 How to Use [Export PDF]

- 

[Export PDF]: The user can export the current music sheet shown in the previewer to a PDF file on their hard drive.

After clicking the **[Export PDF]** Button, a new window will pop out:

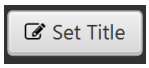


Enter a valid file name you want, choose a suitable directory where the file should be stored and then click the save button. A PDF file containing the current music preview will be stored in the PDF.

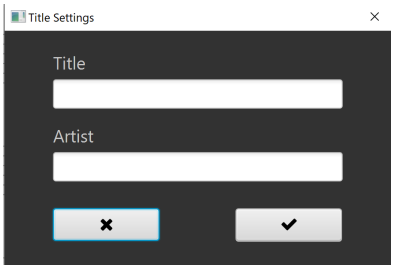
4.5 How to Use [Go To Measure]

When the sheet music has so many measures that the user is required to scroll to the measure they wish to view, this feature can be employed. The user can input the measure number in the text field and click the **[Go!]** Button and the specified measure will be displayed with a blue highlighting to point out the measure to the user.

4.6 How to use [Set Title]

- 

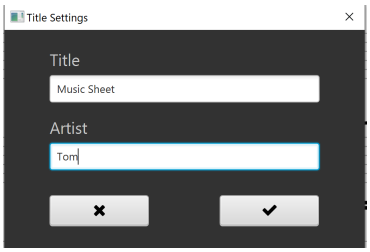
[Set Title]: Click this button will lead to a new window popping out



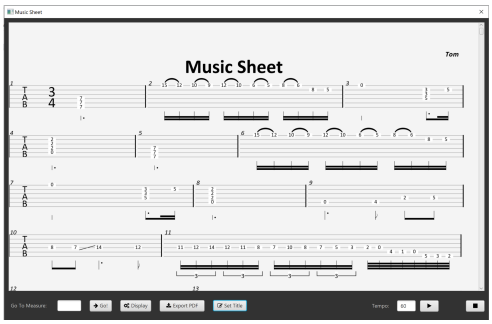
Title: Set the music title, which will show on the top of the music sheet

Artist: Add an artist name at the top-right of the music sheet.

For example:



If we add a title called “Music Sheet”, and set the artist name as “Tom”, then the music sheet will become to:



5. Input Requirements

Some sample tablature can be found in the project folder in the directory:

- TAB2XML/src/test/resources/system. (.txt files only)
- Course wiki page: **Project > Useful Resources > Starter Examples**
- Online tablature .txt files, but ensure your file format must be the same as the resources provided by the professor.

Note: If you write the input tablature yourself, ensure that it respects the timing of the measure specified by the time signature (which is 4/4 if not specified). Otherwise, the system may not comprehend the note durations. This will cause negative effects on the output.

Note: Our system currently only supports Bass, Guitar and Drum tablatures.