USER MANUAL

Project: TAB2XML
Course: Software Development Project (EECS 2311)

THE TEAM (GROUP 12):

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1.0 System Overview

1.1 How to get Started

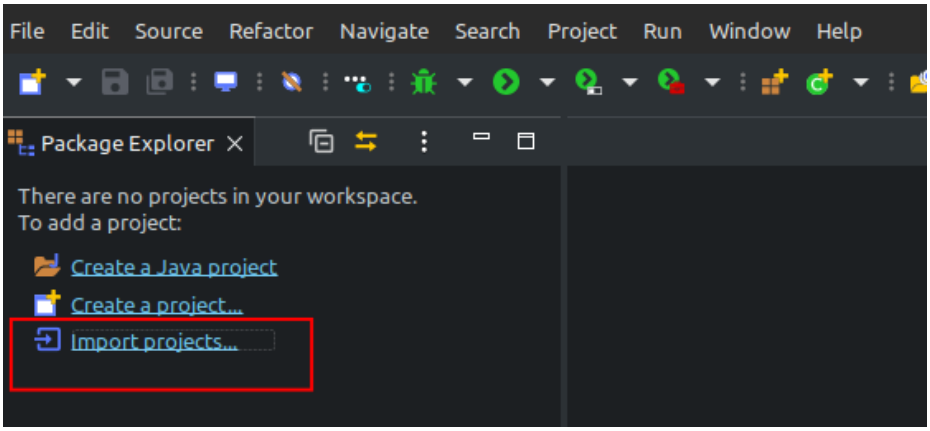
Gradle is a popular build automation tool that is used by many software projects around the world to automate tasks. The main advantage is that Gradle packages code for easy compilation, testing, and deployment.

In this Java Application which runs Gradle, users can convert tablature into other types of files such as MusicXML, a MIDI audio file, or Sheet Music in the form of a PDF or JPEG. To do this a user should have pre-existing tablature that they want to convert and manually type in the application window or import the file via the top menu in the “File” tab.

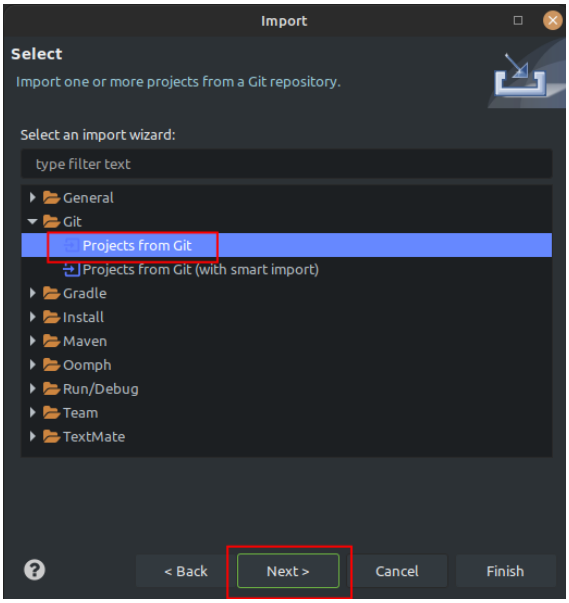
1.1.1 Installation and Execution of Application

Below is a detailed step by step guide with illustrations on how to install and run the application:

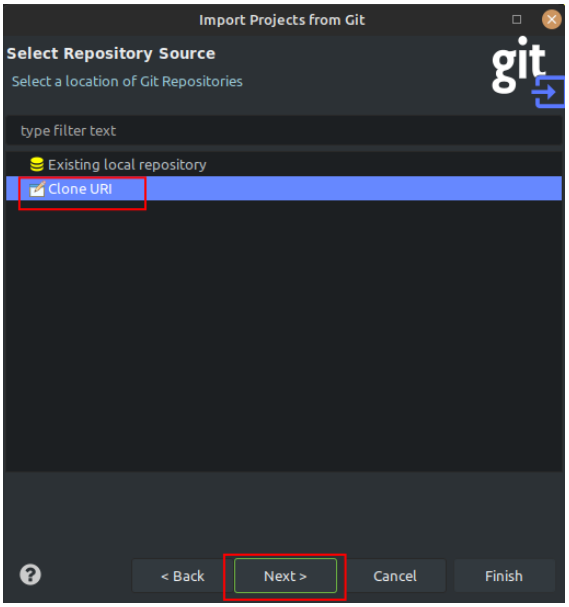
Step 1: Open Eclipse and navigate to the import wizard.



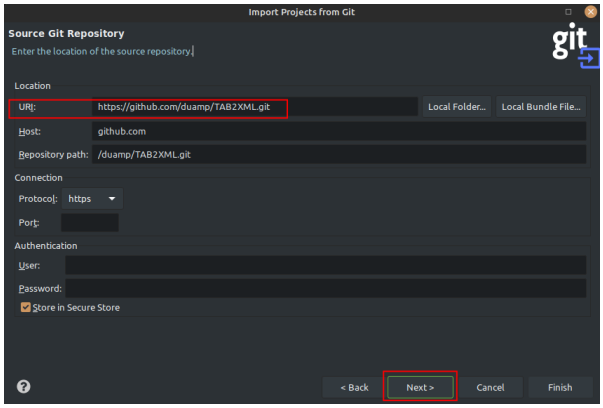
Step 2: In the wizard choose the option “Project from Git” under “Git” then click “Next”.



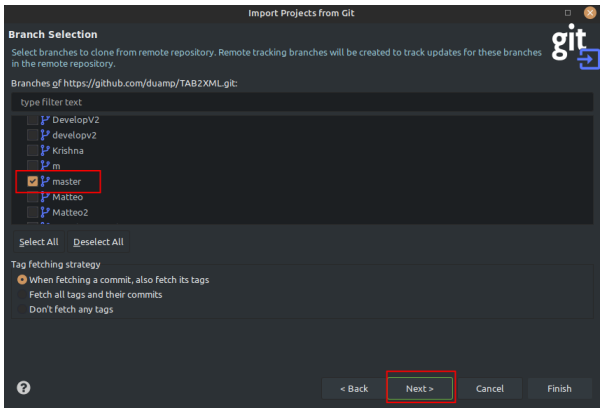
Step 3: Then select “Clone URL” and click “Next”.



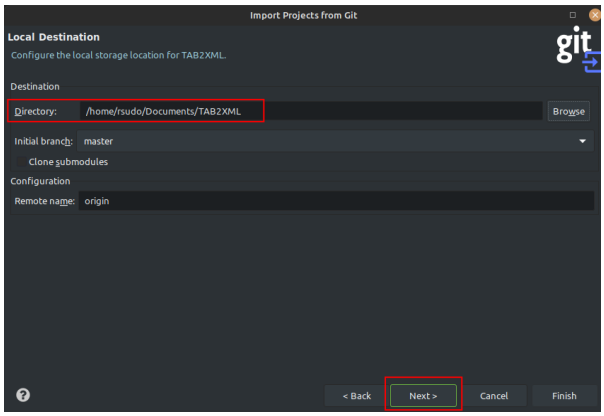
Step 4: In the “URL” field input the following URL: https://github.com/duamp/TAB2XML.git , then click “Next”.



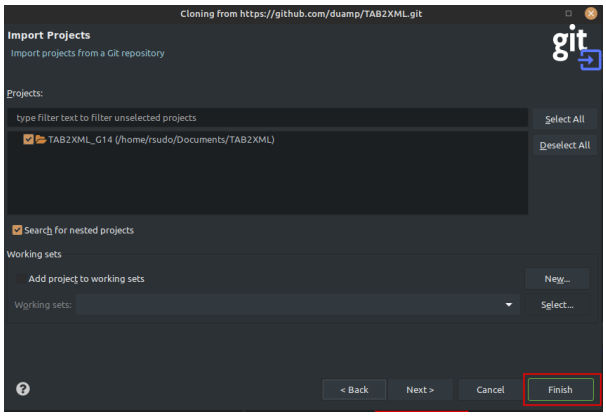
Step 5: Under “Branch Selection” make sure only the “master” branch is checked, then click “Next”.



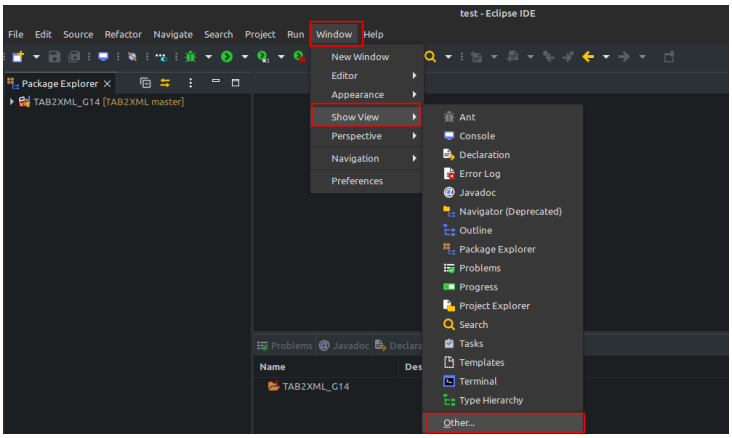
Step 6: In the next menu select where the directory of the application should be created and click “Next”.



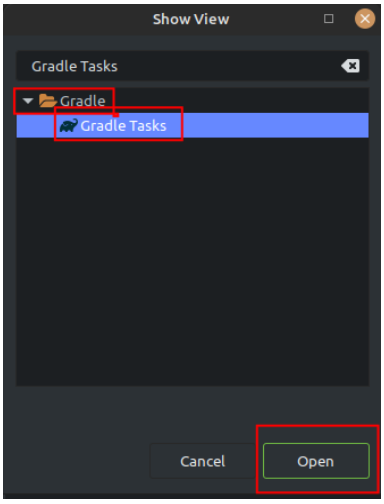
Step 7: After the project has finished importing click “Finish”



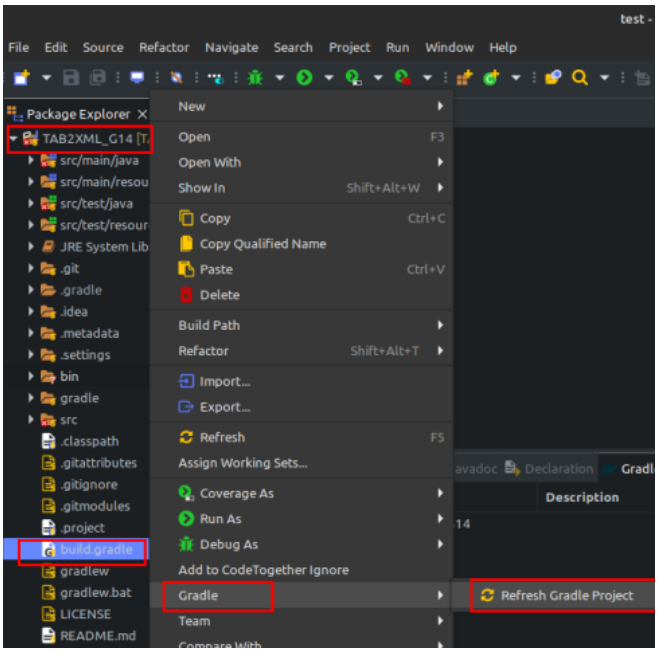
Step 8: To run the application, select the “Window” dropdown menu in Eclipse.
Step 9: Hover over “Show View” and select “Other” in the pop-up menu.



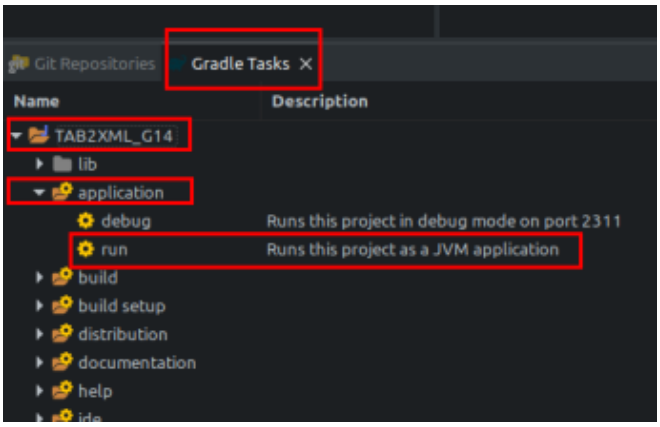
Step 10: Type in “Gradle Tasks” and double click “Gradle Tasks” under the “Gradle” tab



Step 11: If you do not see the project folder under the “Gradle Tasks” tab, find the project in “Project Explorer”, click the drop-down menu and then find “build.gradle”, then right-click it and hover over “Gradle” and click “Refresh Gradle Project”.



Step 12: Navigate to the “Gradle Tasks” menu then in the project folder dropdown expand the “application” tab and double click “run” this should begin the execution of the application



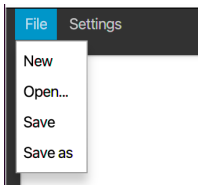
Once **Step 12** has been completed, the application should execute on your computer and you should have the option to add tablature to convert it to the file of your choosing.

2.0 Common Usage Scenarios

2.1 Importing Tablature

2.1.0 Through GUI

The process of importing tablature into the application is very simple and in order to do it, the user can open a new file on their local computer via “File -> Open” as shown in the figure below:



2.02 Adding Tablature into the Application Manually.

Once the application is open, the user can simply paste the text-based tablature onto the GUI. If the user decides to create their text-based tablature from scratch, they need to be using “ | ” and “ - ” to create each measure, where the size does not matter. An example of a guitar tablature is shown below:

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

Guitar:
Create a version of tablature using numbers and the symbols above, specific examples shown in section 4.1.
Drums:
Instead of numbers use ‘x’ and ‘o’ to create the tablature specific examples shown in section 4.2.

.

2.2 Converting Tablature Walkthrough

Once the user has added the tablature into the application, the user must click on the button labeled “Preview Sheet Music” on the bottom right of the GUI. Figure 1 below clearly shows which button the user is to click for the conversion.

2.2.1 Drum & Guitar Tablature

Functionality:

The Preview Sheet music button can draw chords, slurs, slides, and grace notes at a high level; the output is demonstrated in section 4.1.

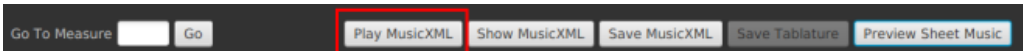
To do this:

1. Launch the application
2. Add custom input (see section 4.1.)
3. Press Preview Sheet Music (Figure)

[Figure 1]

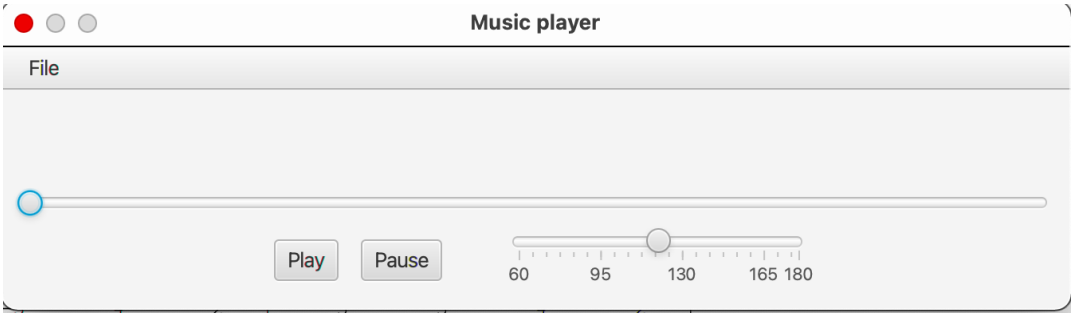
2.2.2 Audio

After the user inputs their tablature, they can click on the “Play MusicXML” button as in Figure 3. This should bring up an interactable music player that plays the tablature. As the song plays a bar progresses representing the time the song has been played in comparison to the length of the song.



[Figure 3]

Once the “Play MusicXML” button is clicked, an interactable music player should appear and the sheet music will be played via a virtual instrument. There are various different buttons and sliders on this GUI. Firstly, the user is able to scroll through the track using the long horizontal slider present in the Music Player. Next, there are two buttons, one labeled as “Play” and the other labeled as “Pause”. These buttons are self-explanatory, if the “Play” button is clicked, the track plays and if the “Pause” button is clicked, the track gets paused. All of these components can be viewed in figure 4 below.



[Figure 4]

2.3 Navigating through Outputs

The user can either convert a small text-based tablature or either a large one. In the case of a large one, once the GUI is opened up with the converted sheet music..

2.3.1 Scroll

The user can freely scroll through using the scroll wheel if the sheet music is multiple pages.

2.3.2 Go-to-Measure

The application also contains a very efficient functionality that allows the user to skip to specific measures and that is by inputting the measure they want to skip to in the bottom left corner of the GUI where there is an input field (figure 5). Once the measure is inputted, the user can click the “Go” button and the program will highlight the specified measure.

[Figure 5]

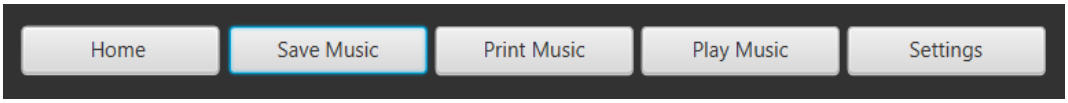
2.4 Export Functionality

2.4.1 Save

Once the user has clicked “Preview Music Sheet” and the new window is opened, there is a button labeled “Save Music” in the bottom right corner (figure 6). The user can click this button in order to save the Sheet Music onto their device as a PDF. The user has the freedom to choose the file path to be anywhere of their choice.

2.4.2 Print

Once the user has clicked “Preview Music Sheet” and the new window is opened, there is a button labeled “Print Music” in the bottom right corner. The user can click this button in order to print the converted Sheet Music using their printer. The user has the freedom to choose the printer of their choice if there are multiple.



[Figure 6]

3.0 Software Functionality

3.1 Main Software features of the Application

1. Previewing/printing music tablature in the form of sheet music.
2. Save the Sheet Music onto the user's device in the form of a PDF file.
3. Converting tablature to MusicXML.
4. View and Save the MusicXML.
5. Playing MusicXML via “virtual instrument”.
6. Control speed/tempo of the music.
7. Complete control of the track while playing (Pause, Play)
8. Add tablature from a pre-existing file or user input.
9. Play high-level guitar and basic level drum tablature.
10. Go to specific measures

3.2 Future Software features of the Application

There are an immense number of functionalities we developers are constantly working on pushing out to the public. The future functionalities you as a user can expect are:

1. Full ability to customize the sheet music output (customizing fonts, the spacing between the lines of the staff, the size of the notes, etc.)
2. Repeats will be supported for the guitar aspect.
3. The user will be able to select a measure (or a note) and start playback from that point. Also, when the music is playing, the visual output will highlight the note that is currently being played

4.0 Expected Outputs

4.1 Guitar Tablature

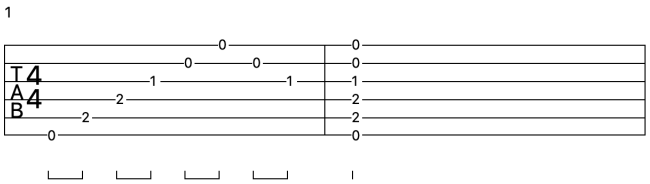
4.1.1 Basic Output

When trying to view the output tablature make the input appear similar to Figure 6 to yield an output of Figure 7. The application outputs numbers representing tablature, with slurs, slides, grace notes, and chords. The output also handles.

1. Bars under measures representing note duration
2. TAB Clef at the beginning of each measure on a new line
3. Time Signature

```
4/4
|----------0-----|-0--------------|
|---------0---0---|-0--------------|
|-------1-------1-|-1--------------|
|-----2----------|-2--------------|
|---2------------|-2--------------|
|-0--------------|-0--------------|
```

[Figure 6]



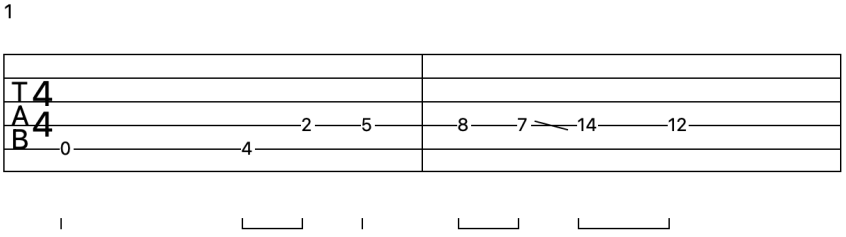
[Figure 7]

4.1.1 Slides Output

When trying to view slides add an ‘s’ before the note the slide should end on to signify a slide from 7 to 14, as shown in [Figure 8] with the result in [Figure 9].

```
4/4
E|-------------------------|-------------------------|
B|-------------------------|-------------------------|
G|-------------------------|-------------------------|
D|-----------------2---5---|-8---7--s14-----12---|
A|--0----------4-----------|-------------------------|
D|-------------------------|-------------------------|
```

[Figure 8]



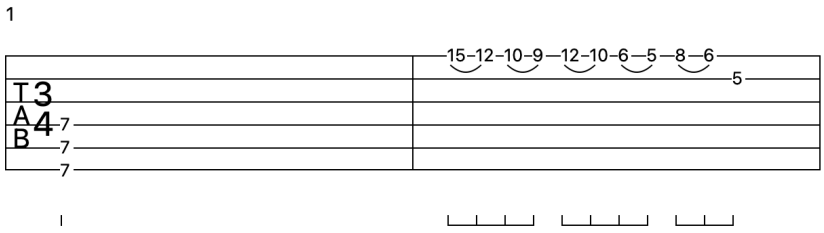
[Figure 9]

4.1.2 Slurs Output

When trying to view slurs add a ‘p’ before the note the slide should end on to signify a slur, as shown in [Figure 10] with the result in [Figure 11].

```
3/4
 E|-------------------------|-15p12-10p9-12p10-6p5-8p6-----|
 B|-------------------------|-------------------------------8-5-|
 G|-------------------------|-----------------------------------|
 D|--[7]--------------------|-----------------------------------|
 A|--[7]--------------------|-----------------------------------|
 D|--[7]--------------------|-----------------------------------|
```

[Figure 10]

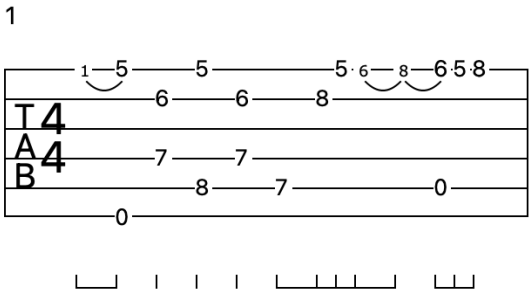


[Figure 11]

4.1.3 Grace Notes Output

```
4/4
E|-g1s5-------5-----5-g6h8p6-5-6-8-|
B|--------6-------6-------8----------|
G|-----------------------------------|
D|--------7-------7------------------|
A|------------8-------7------------0-|
D|----0-------------------------------|
```

[Figure 12]



[Figure 13]

4.1.4 Repeats Output

Does not work for the guitar implantation

4.2 Drum Tablature

The application can handle the basics of the parabola.txt file and the basic user input in Figure 9. Although the input may not cause any exceptions it does not include some additional features presented in the sheet music.

```
CC|x---------------|--------x--------|
HH|--x-x-x-x-x-x-x-|----------------|
```

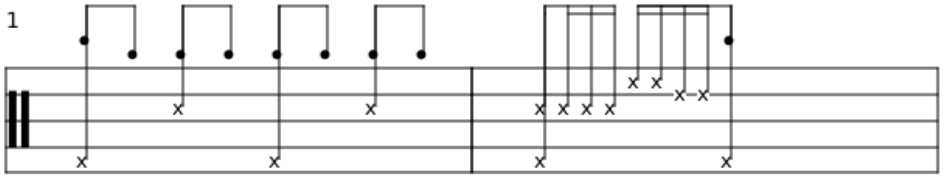
4.1.1 Basic Output

When trying to view the output tablature make the input appear similar to Figure 14 to yield an output of Figure 15. The application outputs numbers representing tablature, with slurs, slides, grace notes, and chords. The output also handles.

4. Bars under measures representing note duration
5. TAB Clef at the beginning of each measure on a new line
6. Time Signature

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

[Figure 14]



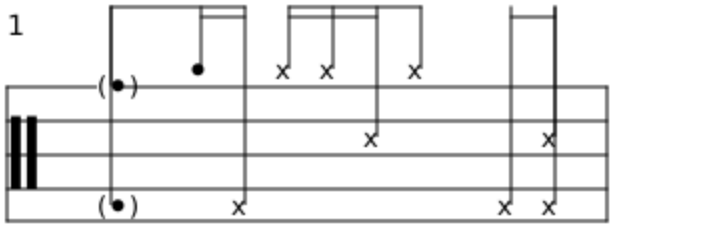
[Figure 15]

4.1.1 Slides Output

When trying to view slides add an ‘s’ before the note the slide should end on to signify a slide from 7 to 14, as shown in [Figure 8] with the result in [Figure 16].

```
C |--------s---s-s|
R |g---------------|
H |--x-dd-O-----|
S |------o-----o--|
t |----------------|
T |----------------|
f |----------------|
F |----------------|
B |g--o----o-o--|
```

[Figure 16]



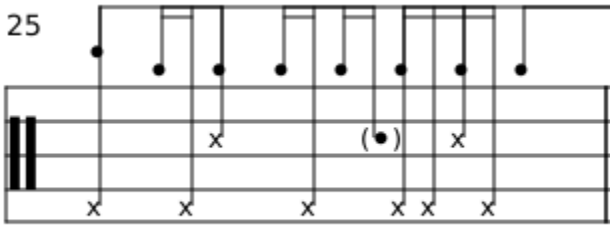
[Figure 17]

4.1.2 Slurs Output

When trying to view slurs add a ‘g’ before the note the slide should end on to signify a slur, as shown in [Figure 18] with the result in [Figure 19].

```
C |X-------------------|
H |--X-X-X-X-X-X-X-X-|
S |----o—-------g--o---|
B |o--o—----o--oo-o--|
```

[Figure 18]

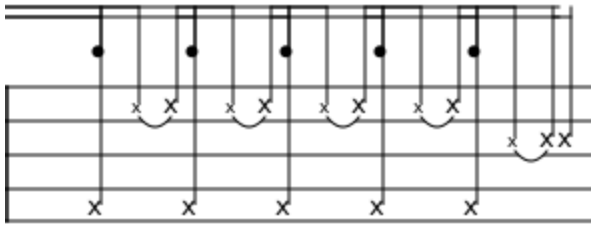


[Figure 19]

4.1.3 Grace Notes Output

```
C |X--X--X--X--X---|
S |-----------------fo|
T |--f--f—-------f--f----|
f |----------------------|
B |o--o--o—----o--o---|
```

[Figure 20]



[Figure 21]

4.1.4 Repeats Output

not implemented.

4.4 Guitar Audio

Once the user is ready to play the track, they can click on “Play Music” and the application will play the track flawlessly via a virtual guitar.

4.5 Drum Audio

Once the user is ready to play the track, they can click on “Play Music” and the application would play the track via virtual drums. Currently, the application only has basic drum playability. However, the functionality of the application is currently a work in progress and will be released at the earliest possible date.

4.6 Print Functionality

In most scenarios, the user might want to print out the converted tablature in order for them to view it as a hard copy. The user can print out the sheet music by clicking on the “Print Music” button which will prompt the user to choose the printer of their choice. In the prompt, the user also has the option to change the orientation, size, type of paper, etc.

4.7 Save Functionality

Since this is offline software, the user will want to save the converted tablature (sheet music) as a PDF onto their machine after each session. To do this, the user can click on the “Save Music” button and they will be prompted with a GUI that asks them to name

the file. Once the “Save” button on the new prompt is clicked, the user will have the option to choose the file path to their desired location.

4.8 Go-to-Measure Functionality

There will be many occasions where the user might want to look at a specific measure in a long piece of sheet music. It would be very tedious for the user to count each measure which is why the Go-to-measure functionality exists. The user is able to enter in the measure of their choice and the software will highlight the inputted measure. This makes it very easy for the user to identify the measure rather than to count them out.

5.0 Conclusion

In conclusion, all of the practical functionality of the application makes it extremely convenient for anybody with an interest in music to use the application to convert their tablature into their choice of file which they can later use to learn/practice their instrument of choice.