User Manual

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Tabs2XML

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Submitted in Fulfillment of The Final of
EECS 2311 Software Development Project

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1.0 Introduction

1.1 Purpose

Tabs2XML was developed for the purpose of converting guitar tablature files and drums tablature files into MusicXML files. Due to the relatively new format, there are not many music pieces currently available in MusicXML. While tablature for guitar and drums is easy to understand, it offers a low degree of readability and modification. The MusicXML format builds on these shortcomings to allow readers to better understand the music piece and easily play it. Tabs2XML is developed for those who want to play songs in the format of MusicXML, but find that they can only find the tablature of those pieces (common occurrence as there aren't as many pieces of song in the MusicXML format). Tabs2XML also allows users to freely modify their music pieces. Tabs2XML is also developed for those who only have a tablatures for a song but want to view it in a music sheet. Tabs2XML converts tablatures into MusicXML files that can be modified and viewed as a music sheet using a third party app, such as MuseScore.

1.2 Disclaimers

To ensure that conversion of Tabs2XML works, it is recommended that the tablature is in the format given under the project section of the course wiki page (look at acceptedFormat.txt).

2.0 Technical Specifications

To use Tabs2XML, the following are recommended:

- The device should be running the most recent version of Windows 10.
- The most recent version of Python should be installed.
- While any editor that supports Python will be sufficient, we highly recommend installing VS Code. We also recommend that the user install the Python extensions pack for VS Code, which can be found here: https://marketplace.visualstudio.com/items?itemName=donjayamanne.python-extension-pack

3.0 Installation Instructions

Once you have ensured your device meets the requirements specified in the "Technical Specifications" section, install Tabs2XML by following these instructions (these instructions assume you are using the recommended software, VS Code).

The user of Tabs2XML is required to be operating on a system that has the following programs/packages/extensions:

- Python (latest).
- VS Code (latest). While many editer/IDEs will work, we suggest Visual Studio Code as the setup process has been tested with it and everything works.
- pip (Package Installer for Python).
- PySimpleGUI.
- lxml.
- numpy.

To get Python:

- Go to: https://www.python.org/downloads/.
- Download the latest version for the platform the current operating system is utilizing.
- Run the setup and configure necessary settings for the current system. *Ensure that the "Add Python to Path" option is selected on the initial Python installation screen*.
- In the event that there are any troubles along the way, please refer to: https://www.python.org/community-landing/.

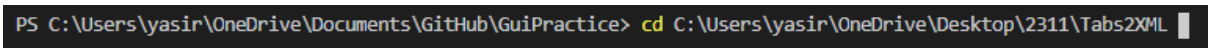
to get VS Code:

- Go to: https://code.visualstudio.com/download.
- Download the latest version for the platform the current operating system is utilizing.
- Run the setup and configure necessary settings for the current system.
- In the event that there are any troubles along the way, please refer to: https://www.python.org/community-landing/.
- To best optimize the system that will be running the program, please install the following VS Code Python extension pack: https://marketplace.visualstudio.com/items?itemName=donjayamanne.python-extension-pack.

To get the packages for Python:

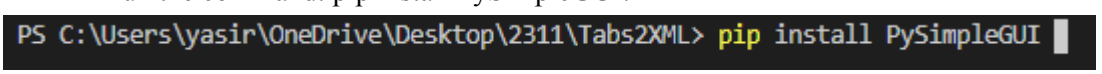
For the following commands, ensure that Windows PowerShell (Windows) or Terminal (MacOS/Linux) has the directory change so that it is in the same folder as the *non-zipped project folder*.

- To do so, Open Windows PowerShell (Windows) or Terminal (MacOS/Linux).
- Run the command: cd <THE PATH TO THE PROJECT FOLDER>
  - Refer to the image below for help. In the example below, the non-zipped project file was placed in folder “2311” on the Desktop.



- First, pip (Package Installer for Python) will have to be installed
  - Open Windows PowerShell (Windows) or Terminal (MacOS/Linux).
  - run the command: pip install pip.

  - Note the working directory in the above example!
  - In the even there are any issues, please refer to: https://pypi.org/project/pip/#files
- To get PySimpleGUI:
  - Open Windows PowerShell (Windows) or Terminal (MacOS/Linux).
  - run the command: pip install PySimpleGUI.



  - Note the working directory in the above example!
  - In the even there are any issues, please refer to: https://pypi.org/project/PySimpleGUI/
- To get lxml:
  - Open Windows PowerShell (Windows) or Terminal (MacOS/Linux).
  - run the command: pip install lxml.

```
PS C:\Users\yasir\OneDrive\Desktop\2311\Tabs2XML> pip install lxml
```

- Note the working directory in the above example!
- In the even there are any issues, please refer to: https://lxml.de/installation.html

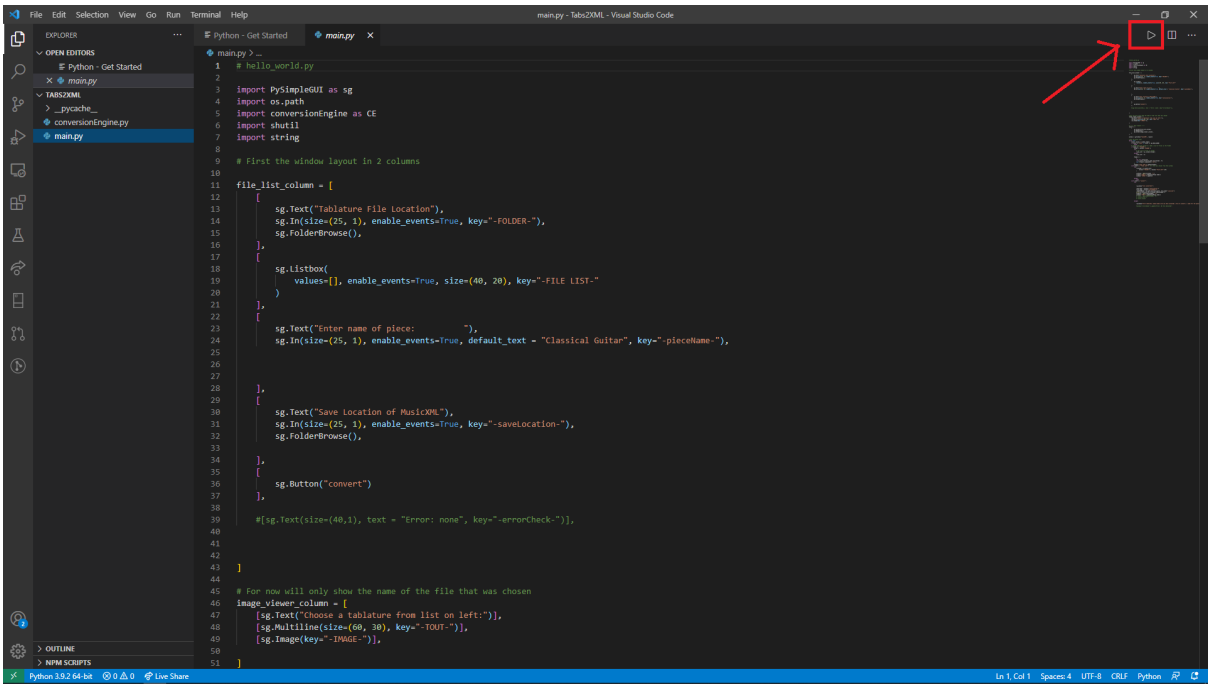
- To get numpy:
  - Open Windows PowerShell (Windows) or Terminal (MacOS/Linux).
  - run the command: pip install numpy.

```
PS C:\Users\yasir\OneDrive\Desktop\2311\Tabs2XML> pip install numpy
```

- Note the working directory in the above example!
- In the even there are any issues, please refer to: https://pypi.org/project/numpy/

To launch Tabs2XML:

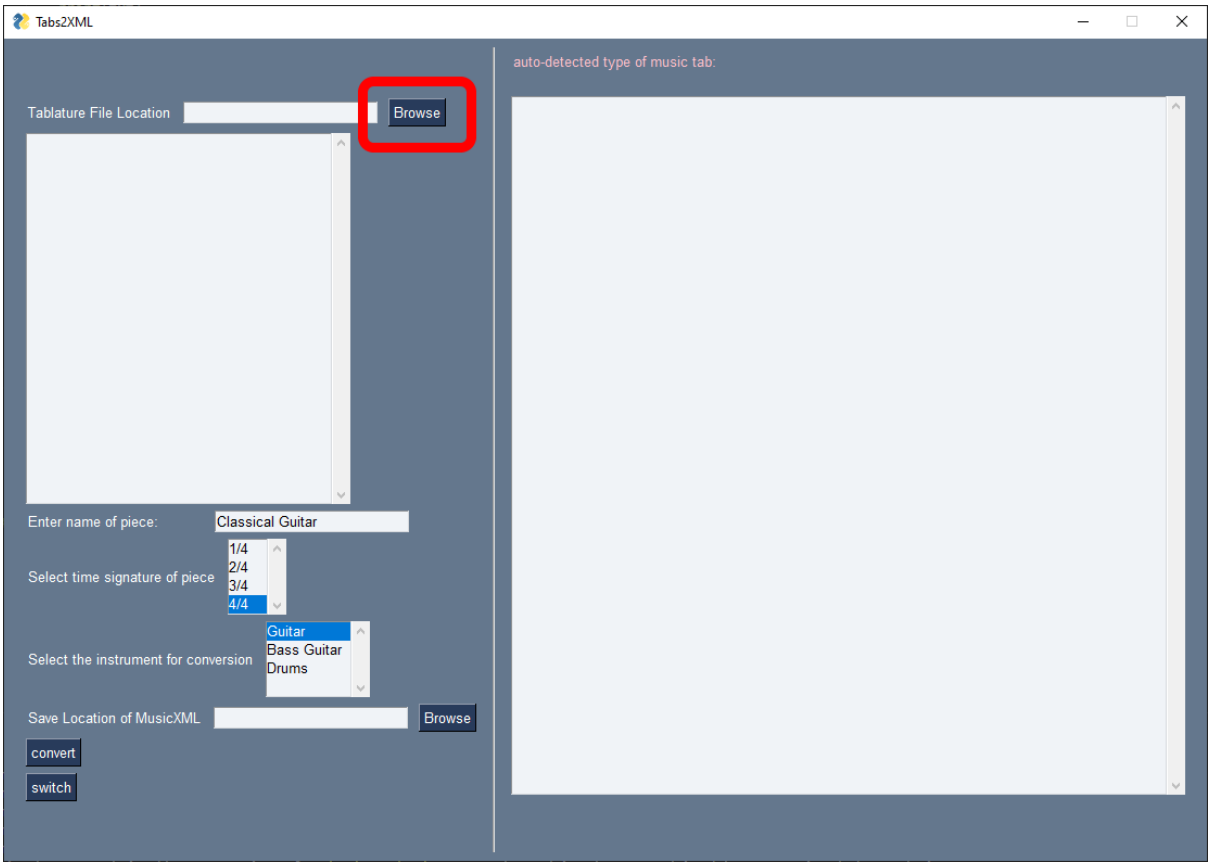
- Download the project as a zipped file from the github. (https://github.com/arjitjohar/Group10Project)
- Unzip the download and store it on your system.
- Launch VS Code.
- Click File > Open Folder > *Select the directory where the non-zipped project file is located*.
- Open main.py.
- Hit “Run Code” (play button at the top right) or hit Ctrl + ALT + N.

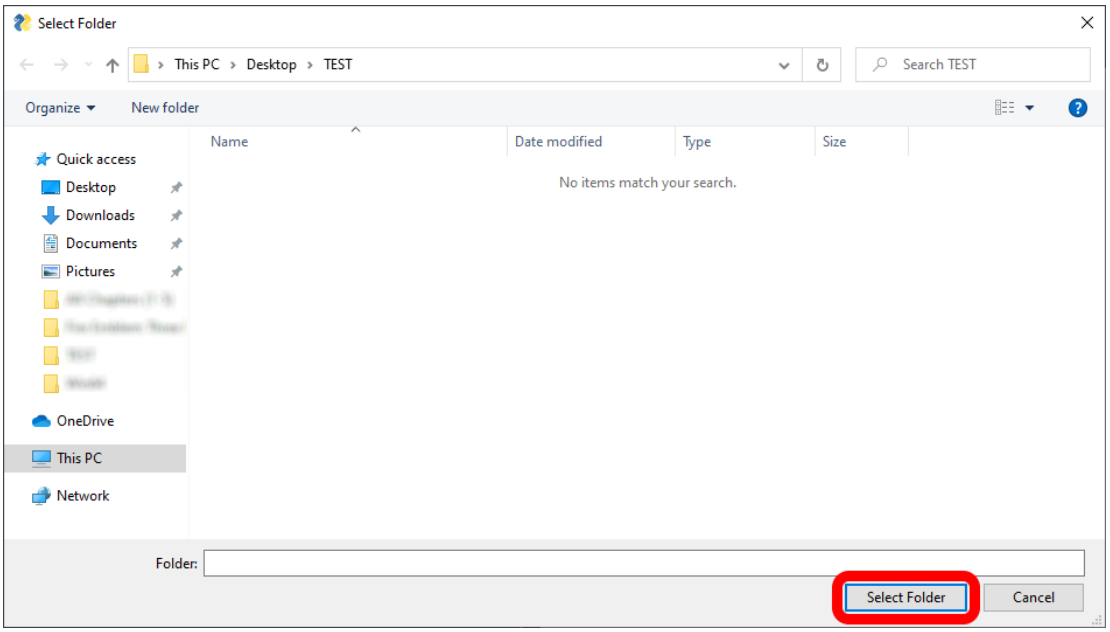


In the event that they require further assistance, they can react out to our support staff at hiangel@my.yorku.ca.

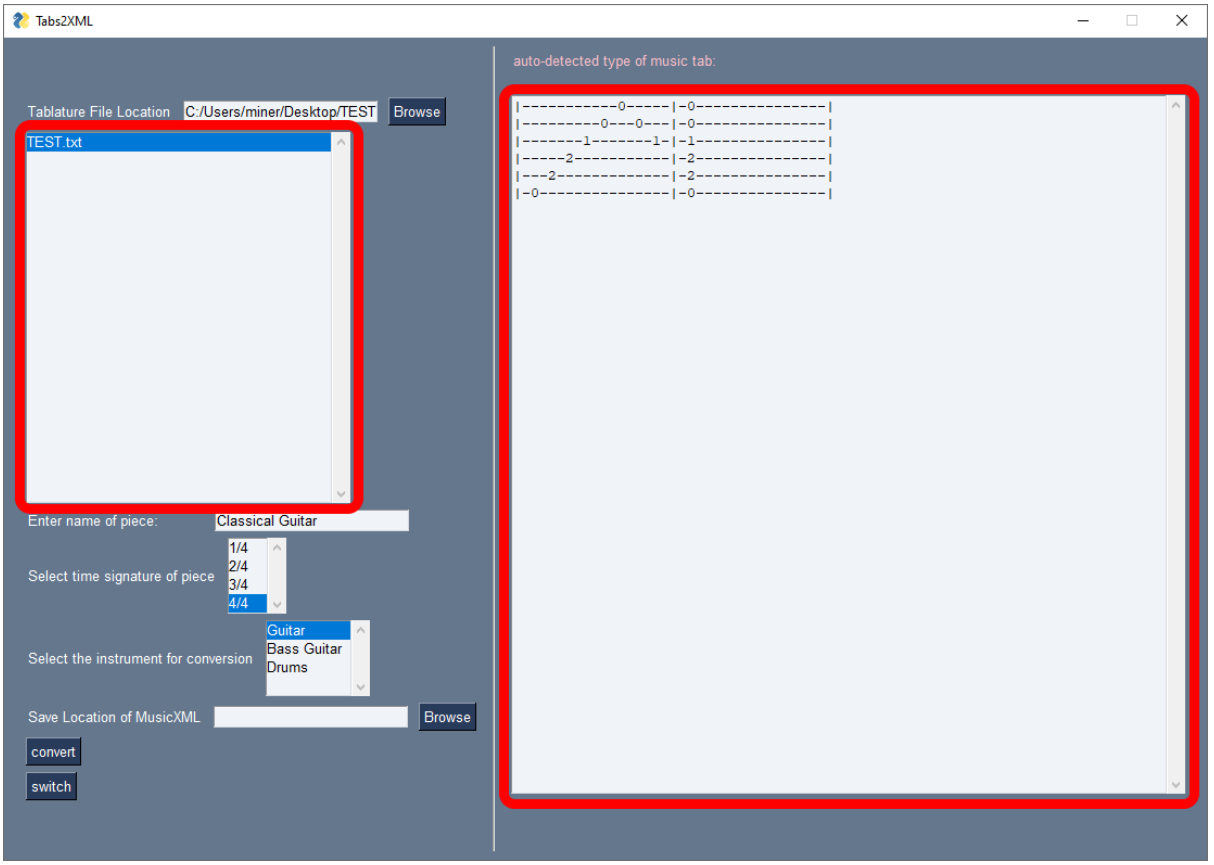
4.0 Description of How to Use/Operate the Product

1. The user selects the directory where the file is stored by clicking on the “Browse” button (clicking this button brings up the computer’s file explorer). Note that the file manager may state “No items match your search” because it only accepts folder directories, not individual files’.

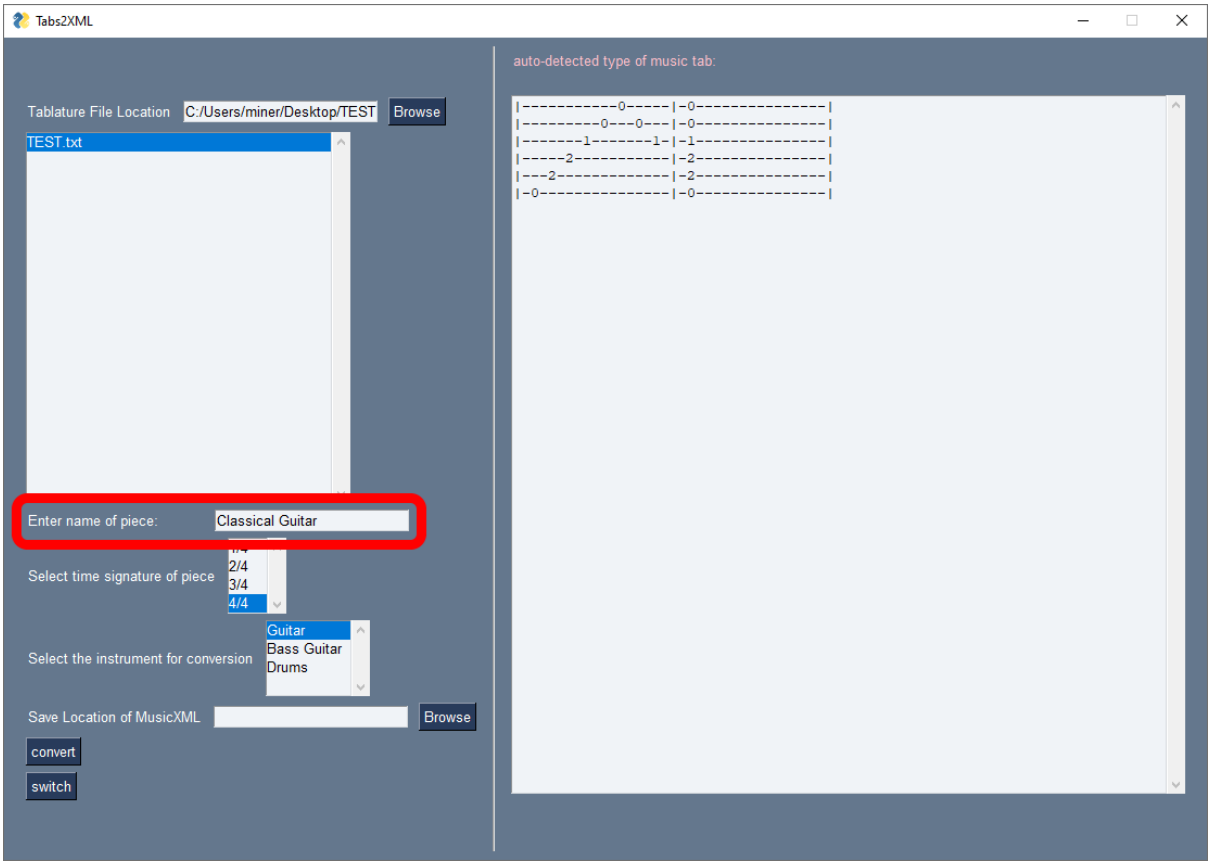




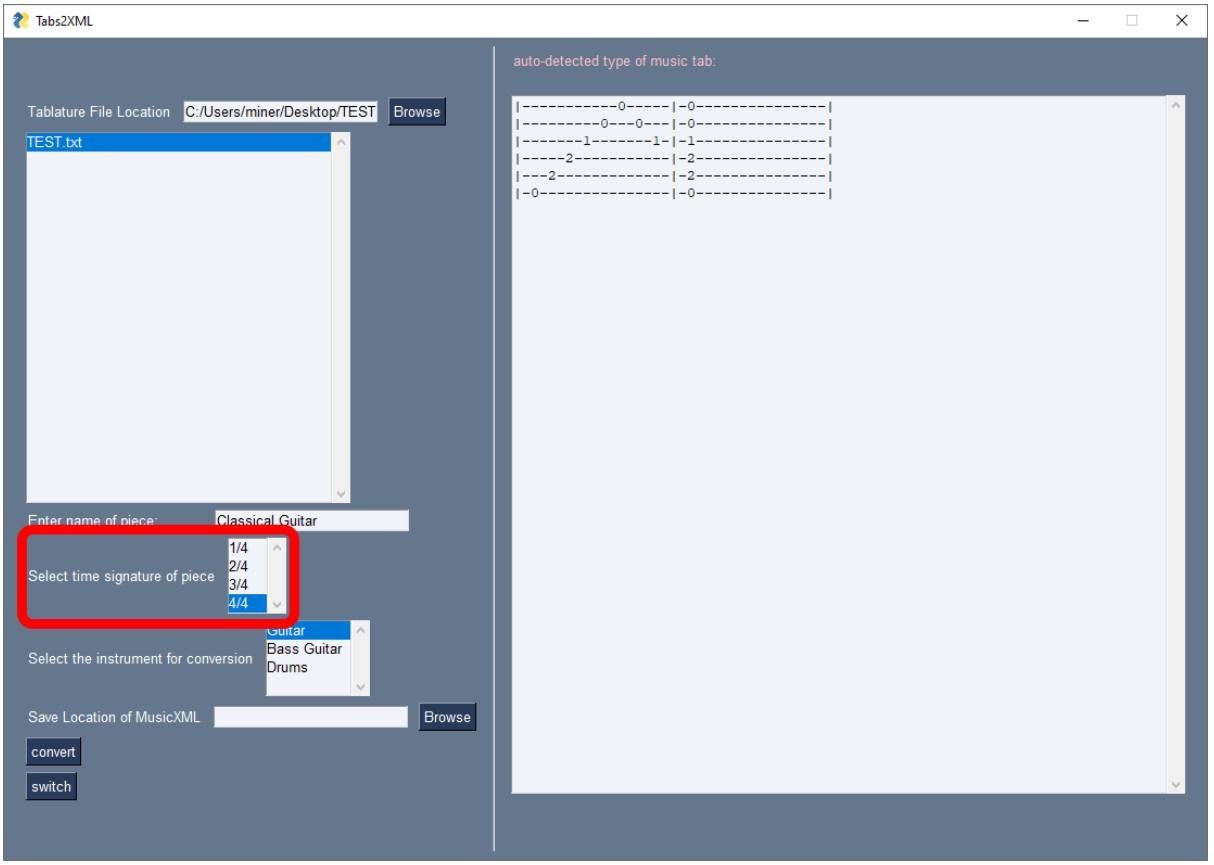
2. The user selects the tablature from the file list (left) that they wish to convert. A preview is then shown as to what the MusicXML file looks like (right).



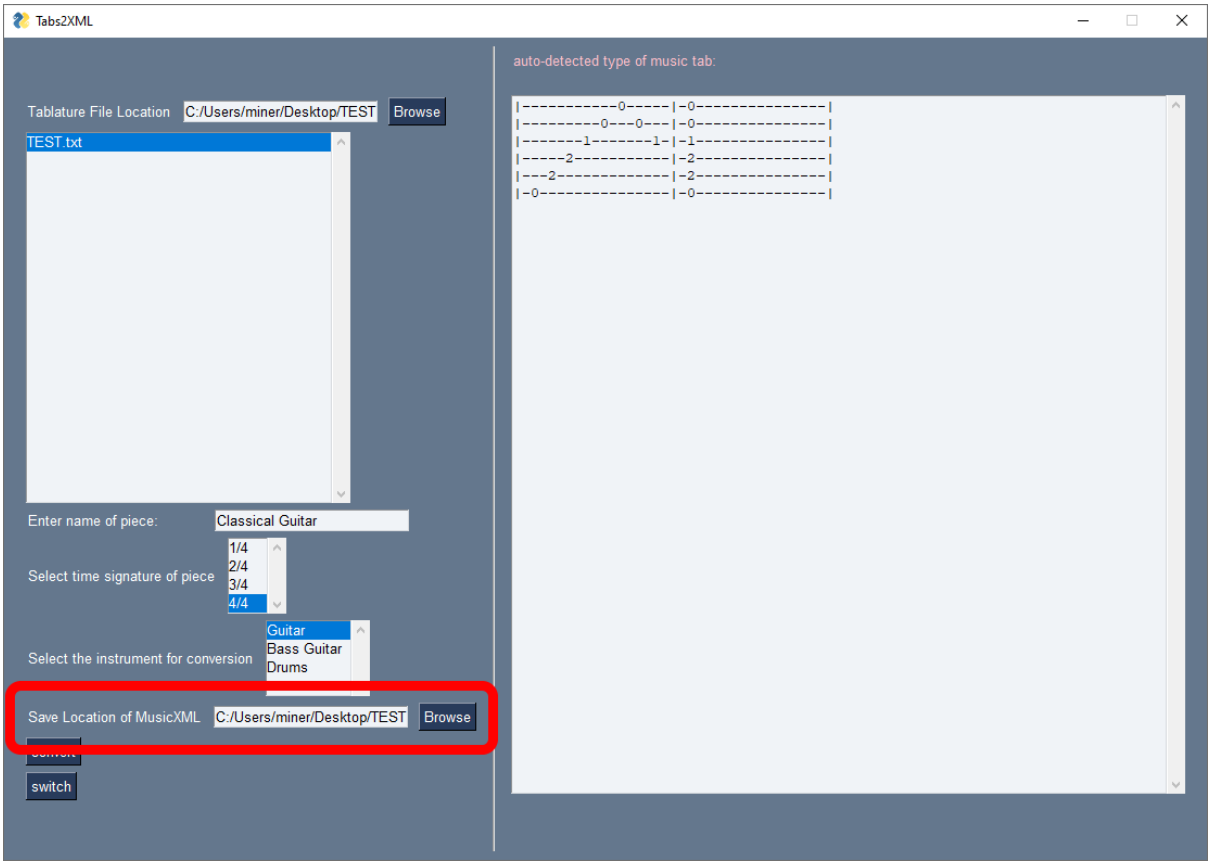
3. The user renames the name of the piece into what they want(default name is Classical Guitar).



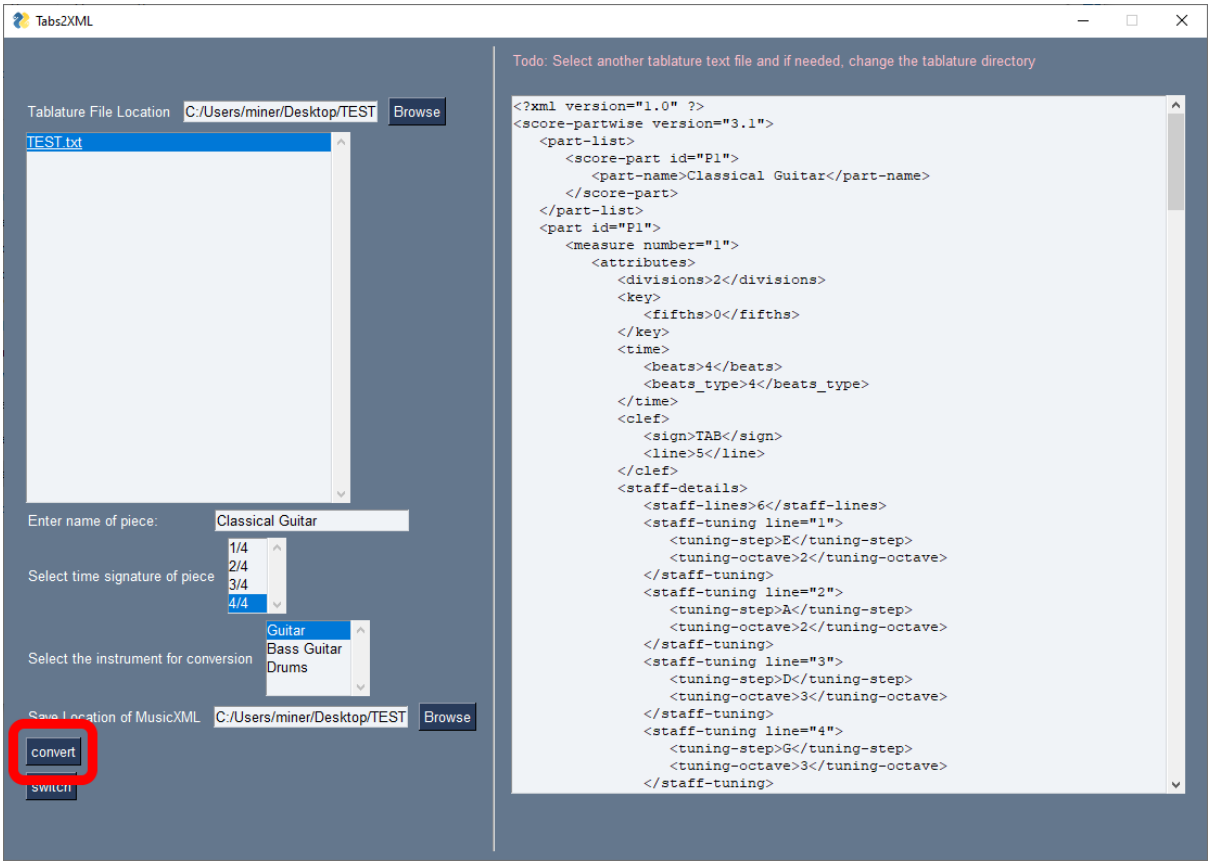
4. The user chooses which time signature they want to use if they want to change it (by default, this is set to 4/4).



5. The user then selects the directory where they want to save the converted MusicXML file.



6. The user can then press the convert button to convert the tablature into a MusicXML file and save it to the chosen directory.



7. The user can then view the MusicXML file on a third party software or website (MuseScore is recommended for MusicXML viewing).

5.0 Example Use Cases

In this section, some example user stories/use cases will be described which can be used as reference while utilizing the program.

5.1 Converting Guitar Tablature from a Text File

Context: the user has a text file containing guitar tablature for a song titled “Example” saved on their desktop (time signature 2/4). They wish to convert this file to MusicXML format, so it can be used/edited in MusicXML-supported software.

1. After opening Tabs2XML, the user clicks the “Browse” button at the top left of the window.
2. After the computer’s file explorer window appears, the user navigates to the computer’s “Desktop” folder (C:\Users\JohnDoe\Desktop), and clicks “Select Folder.” This causes a list of files to appear on the window’s left side (these are the files contained in the selected folder).
3. The specific text file containing the tablature is selected on the left side of the window, causing the tablature to appear on the right side of the window.
4. The user selects the 2/4 as the time signature, and guitar as the instrument. The name of the song, “Example,” is typed in place of the default song name, “Classical Guitar” (all of these options are found on the left side of the window).
5. The user clicks on the “Browse” button on the bottom left of the window, after which the file explorer once again appears. The user then selects a folder to save the final output file to, using the same method as step 2.
6. Finally, the user clicks “Convert,” and the newly created MusicXML file “appears” in the selected output folder.

5.2 Converting Drum Tablature from Clipboard

Context: the user has discovered drum tablature for a song titled “Second Example” on their favourite music sharing website (time signature 4/4). They wish to convert this text to MusicXML format, so it can be used/edited in MusicXML-supported software.

1. Before opening Tabs2XML, the user highlights and copies the tablature to the computer’s clipboard (CTRL + C).
2. Tabs2XML is opened by the user.
3. The user clicks on the right-side text box. The user presses CTRL + V to paste the drum tablature into the text box.
4. The user selects the 4/4 as the time signature, and drums as the instrument. The name of the song, “Second Example,” is typed in place of the default song name, “Classical Guitar” (all of these options are found on the left side of the window).
5. The user clicks on the “Browse” button on the bottom left of the window, after which the file explorer appears. The user then finds the folder they wish to save the final output file to, and click “Select Folder”.
6. Finally, the user clicks “Convert,” and the newly created MusicXML file “appears” in the selected output folder.

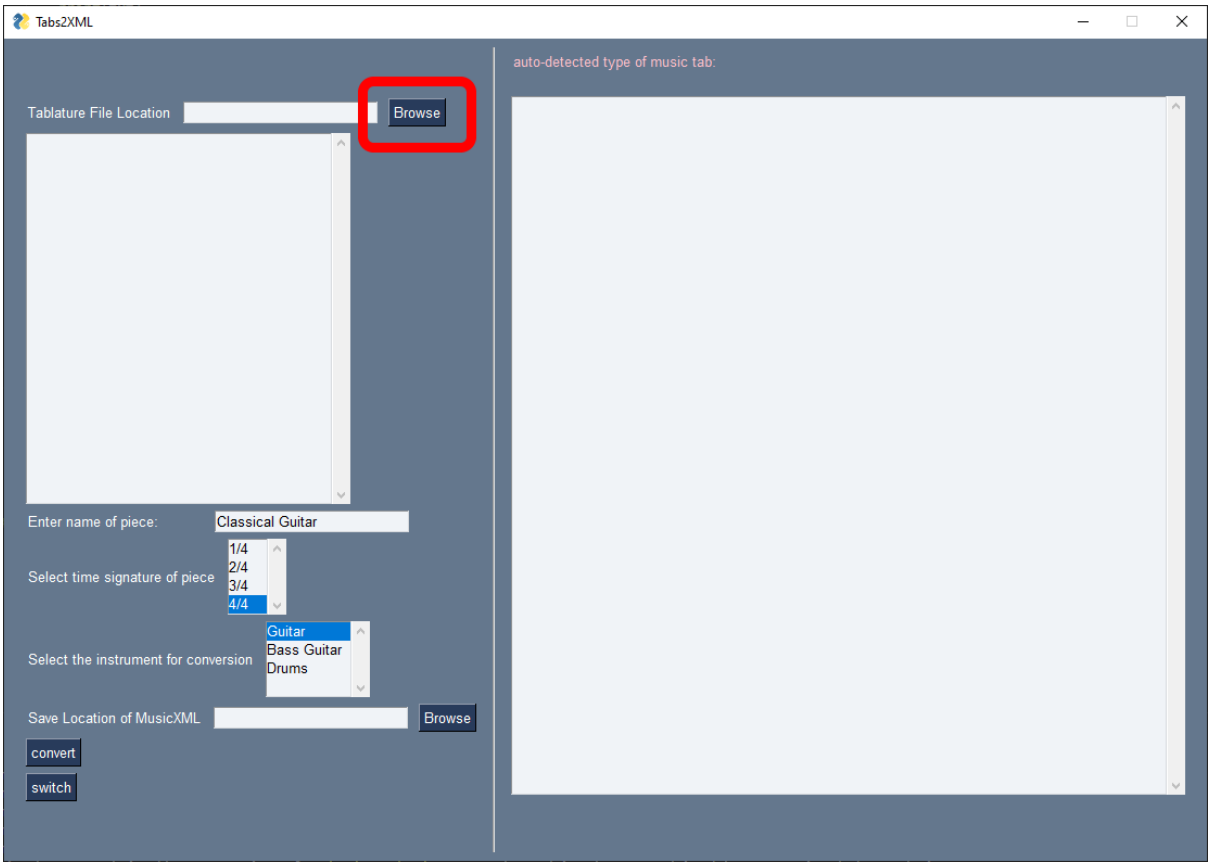
6.0 Troubleshooting & Solving Problems

In the case there is a problem with the conversion:

1. Close and re-open the program (sometimes, waiting roughly 30 seconds before running the program again is required).
2. Make sure you have the latest version of Tabs2XML from github.
3. Ensure your VS Code is up to date and functioning properly.
4. In the event that they require further assistance, they can react out to our support staff at hiangel@my.yorku.ca.

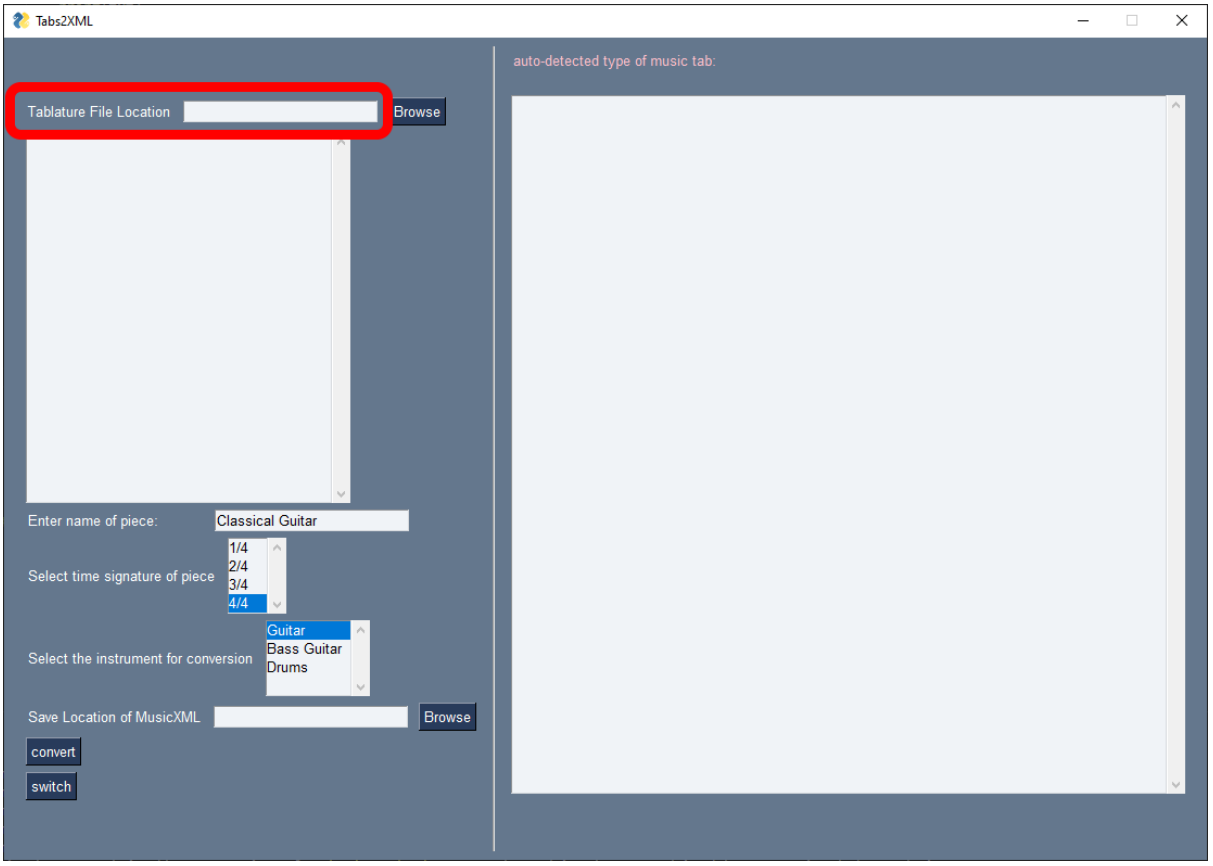
7.0 Description of the UI

7.1 Browse Button (Input)



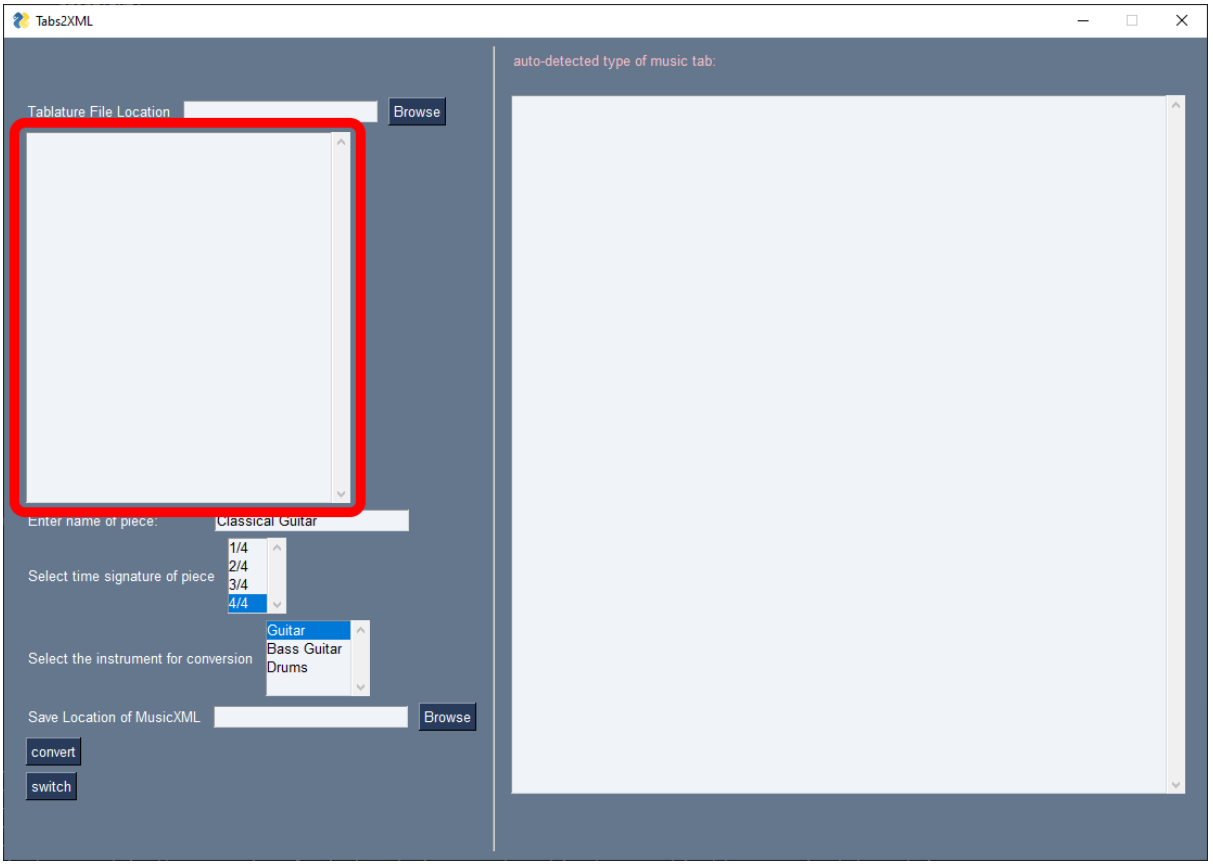
When clicked on, this button sends the user to their file management application, so they can choose the directory of the folder the tablature text file to convert is inside.

7.2 Tablature File Location



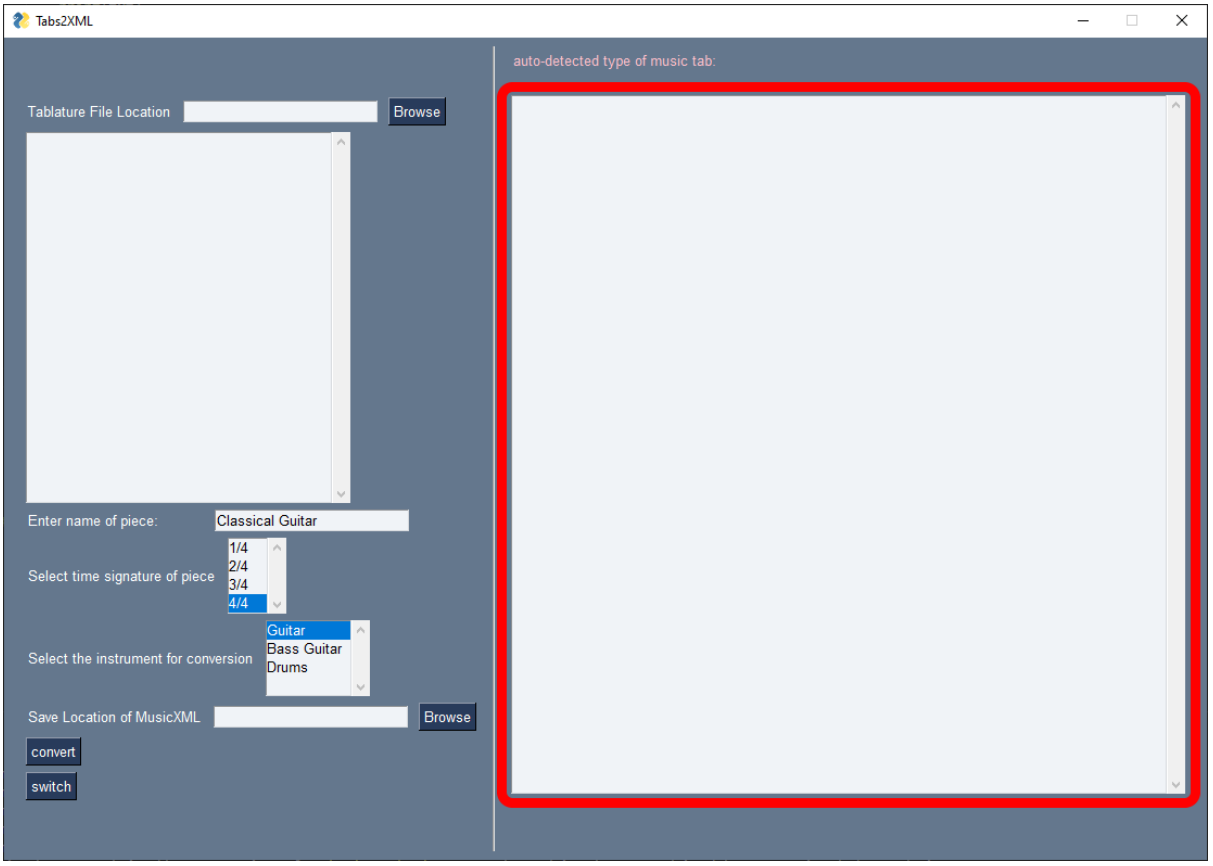
Displays the directory of the Tablature File being inputted. This is determined by the directory of the file selected when using the "Browse" button.

7.3 List of Files



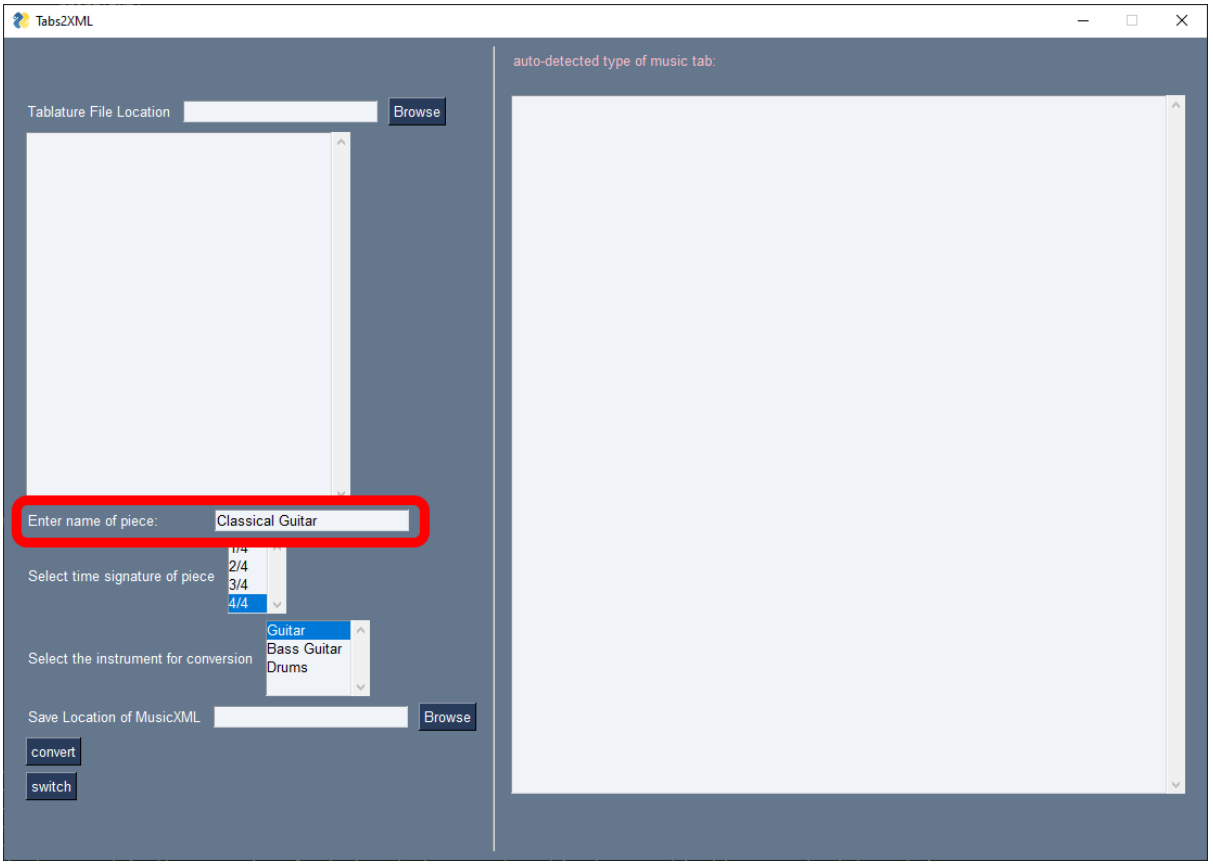
This is the list of files which have been inputted by the user using the "Browse" button (see above). Here, a file is chosen to be converted.

7.4 MusicXML Preview



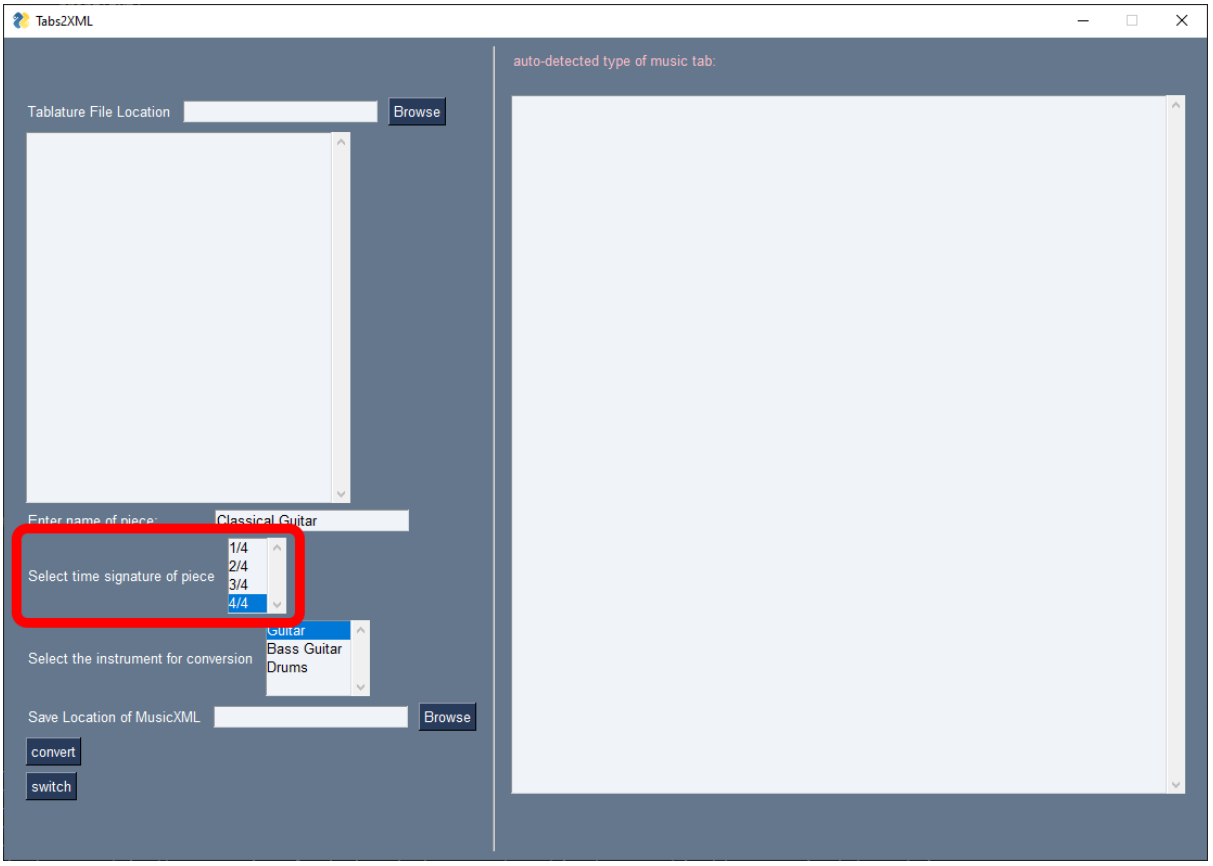
This text box displays the contents of the text file that is to be converted. When convert is clicked, the text box displays a preview of the MusicXML file that is saved onto the save directory.

7.5 Name of Piece



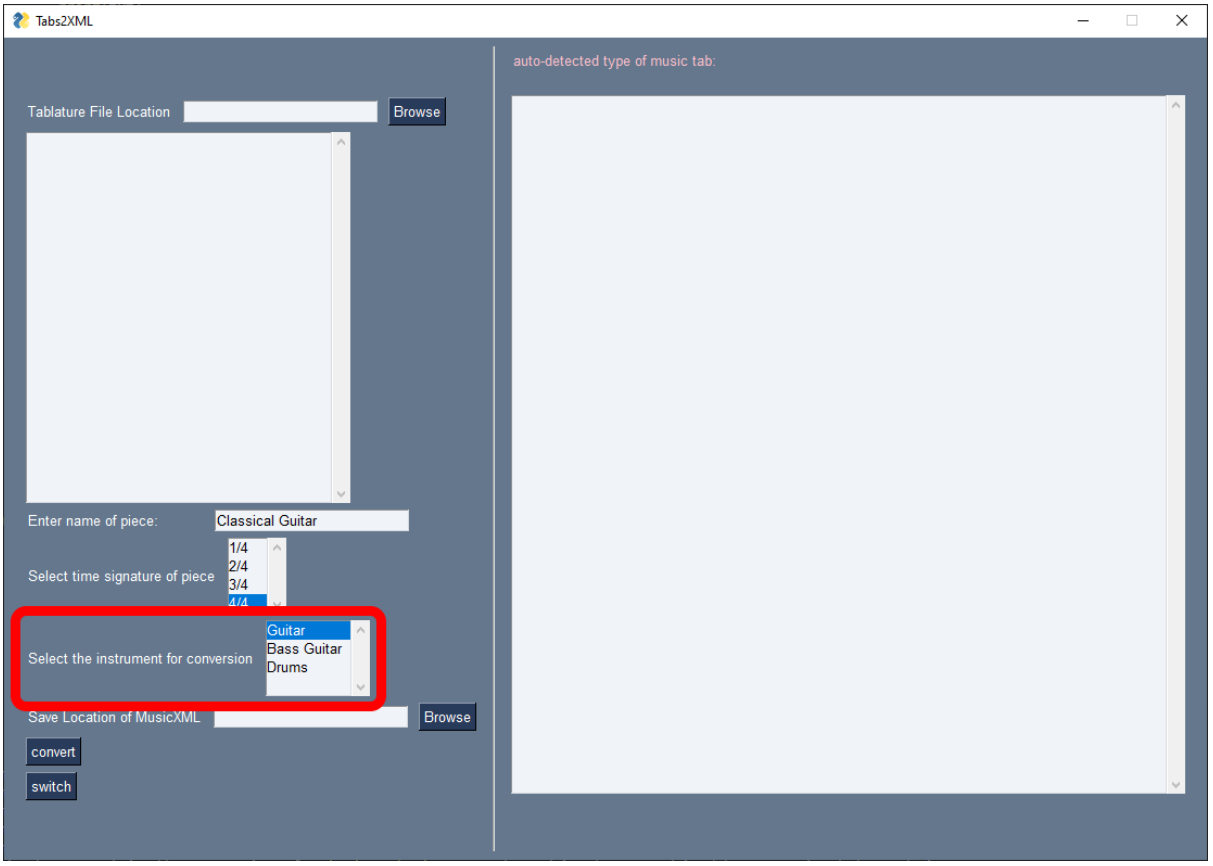
This text box is where the user changes the name of the song, and resultingly the name of the outputted MusicXML file.

7.6 Time Signature



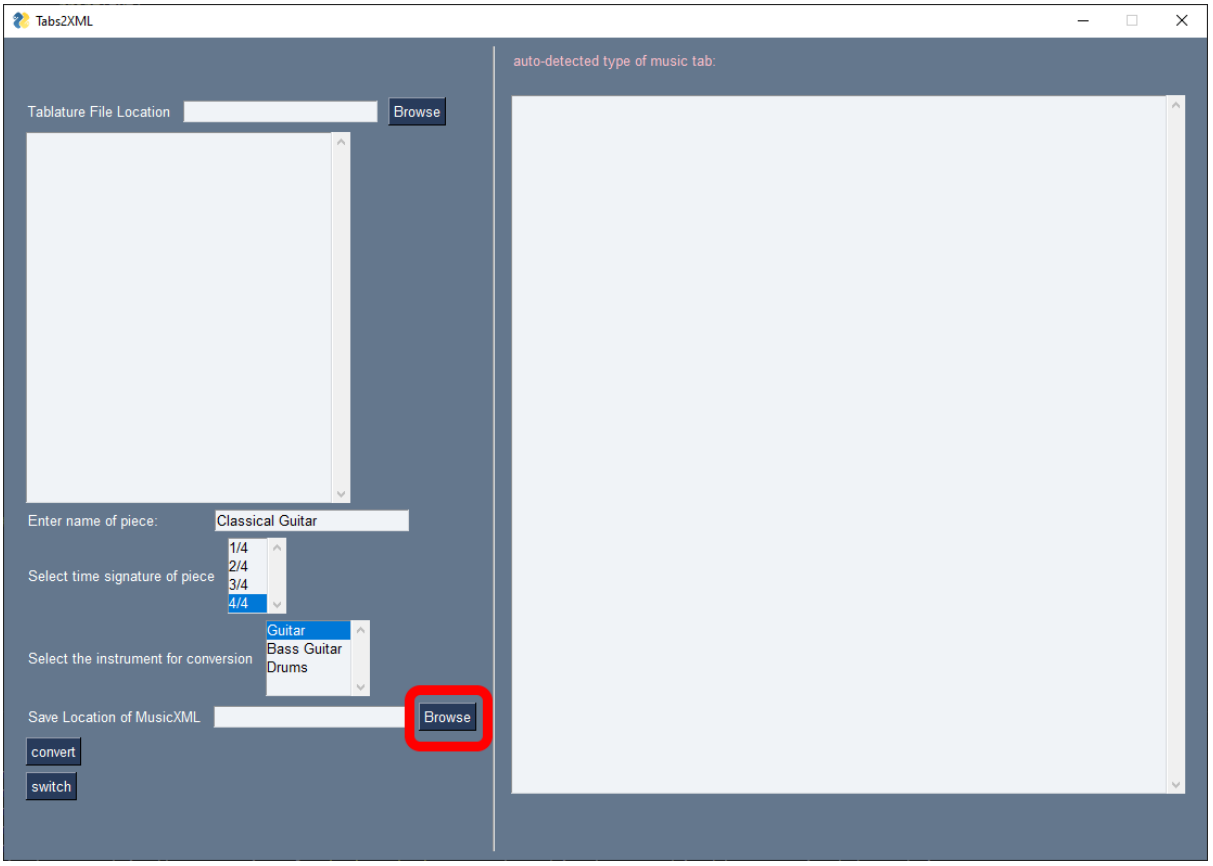
The user may select one of a set number of available time signatures for their converted piece.

7.7 Instrument Type



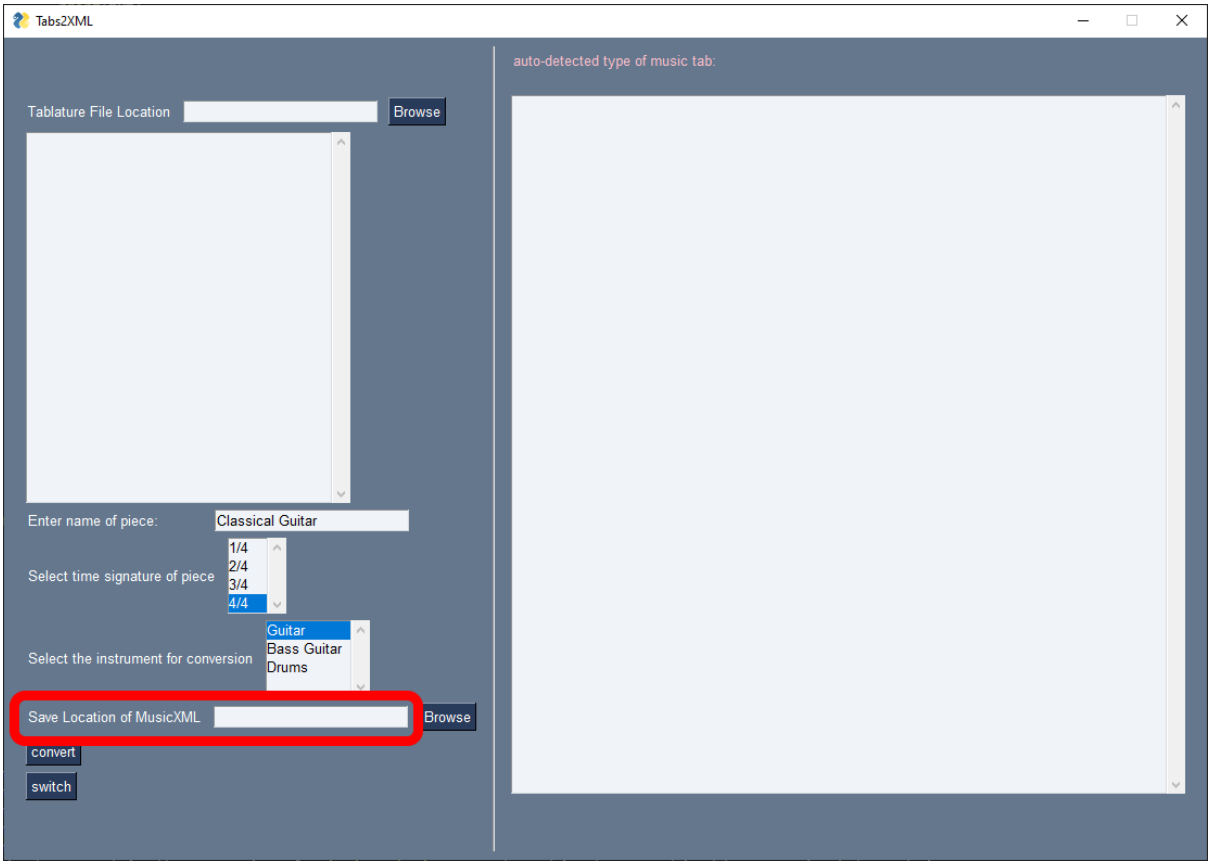
The user may select one of three supported instruments, depending on the instrument the tablature is based on.

7.8 Browse Button (Output)



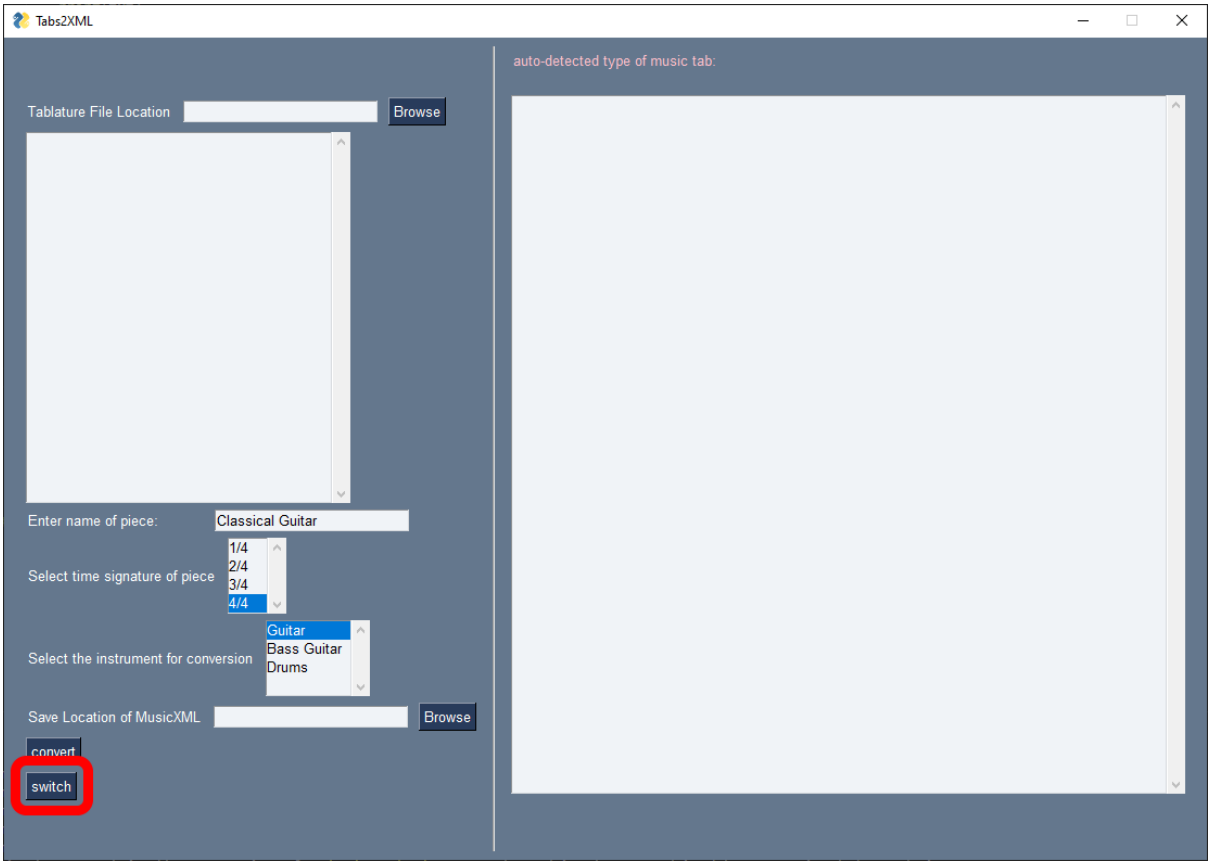
When clicked on, this button sends the user to their file management application, so they can choose the location where the outputted MusicXML file will save to.

7.9 Save Location of MusicXML



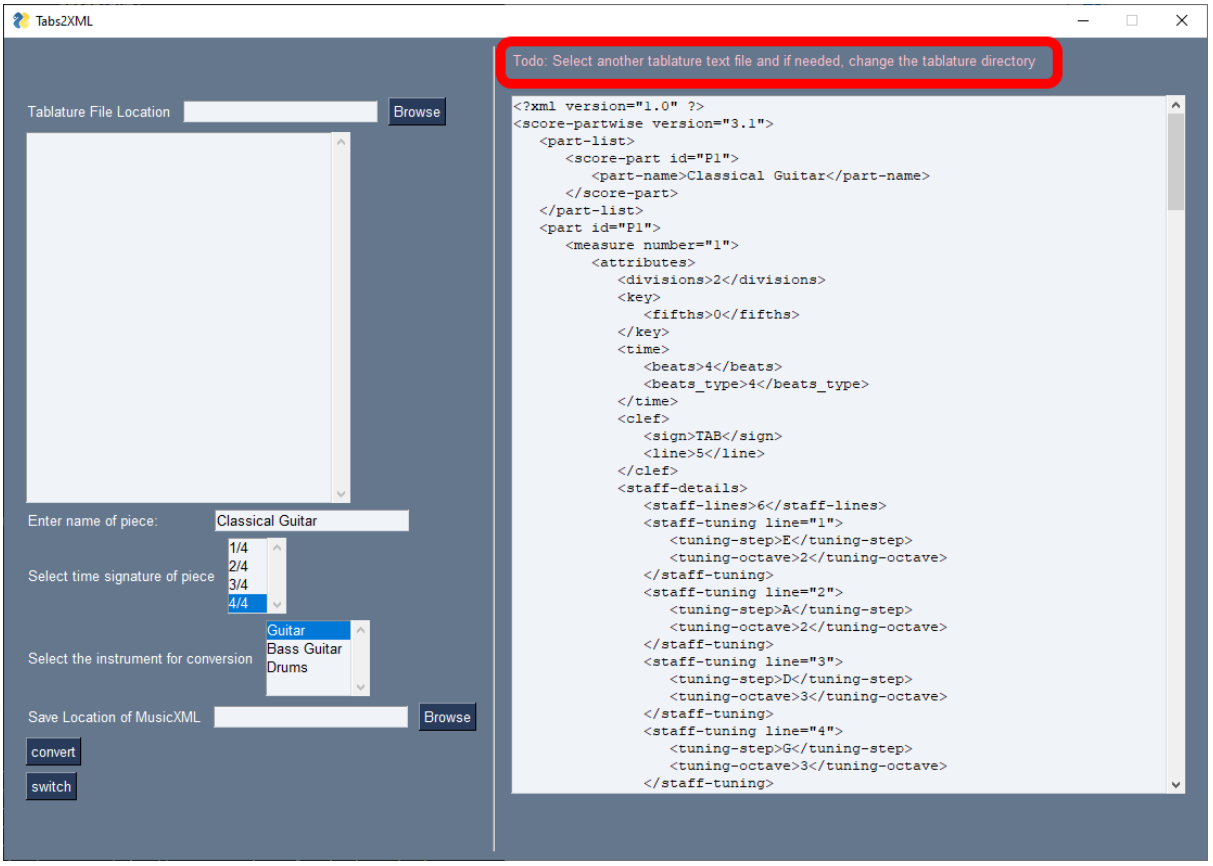
Displays the directory of the MusicXML file being outputted. This is determined by the directory of the file selected when using the "Browse" button (see above).

7.10 Switch Button



After the tablature has been successfully converted, the “Switch” button converts the new MusicXML back into tablature.

7.11 “To-Do” Instruction



The red text displayed on the top-right of the UI explains to the user what the next step of the conversion process is. For example, after a Tablature file is converted, this text will read: “Todo: Select another tablature text file and if needed, change the tablature directory.”