

User Manual

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Tabs2XML

Alp Sirek

Andrew Ngov

Arjit Johar

Daniel Santorelli

Muhammad Azizi

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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 editor/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.

```
PS C:\Users\yasir\OneDrive\Documents\GitHub\GuiPractice> cd C:\Users\yasir\OneDrive\Desktop\2311\Tabs2XML
```

- 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`.

```
PS C:\Users\yasir\OneDrive\Desktop\2311\Tabs2XML> 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`.

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

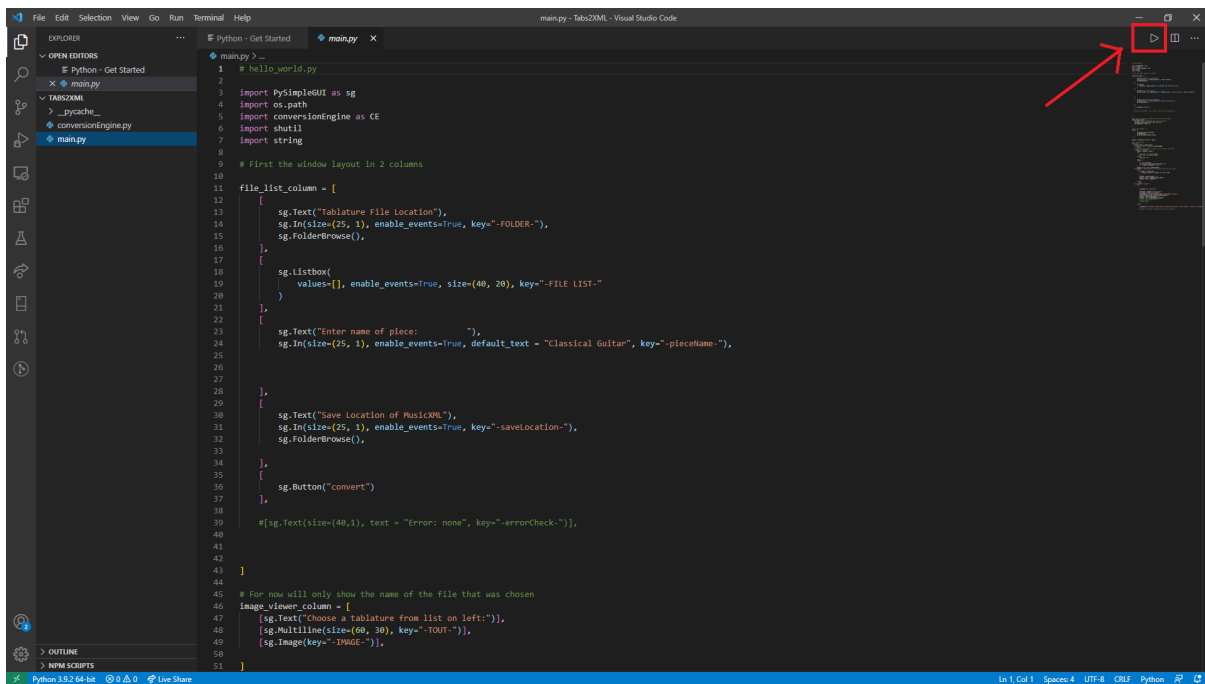
- Note the working directory in the above example!
- In the even there are any issues, please refer to: <https://lxml.de/installation.html>
- To get numpy:
 - Open Windows PowerShell (Windows) or Terminal (MacOS/Linux).
 - run the command: pip install numpy.

```
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:

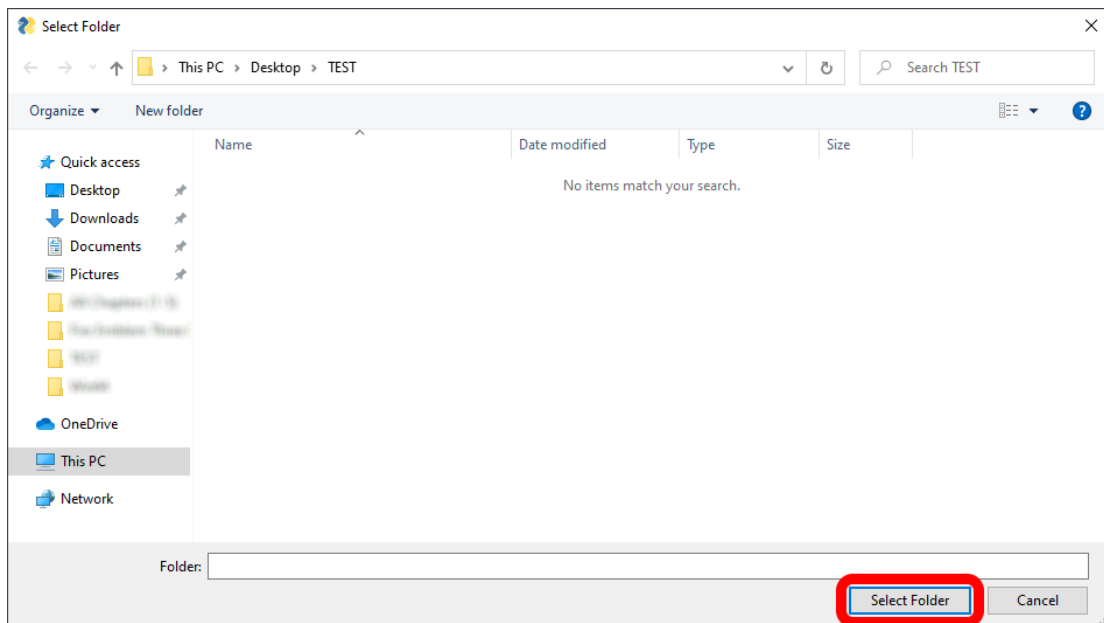
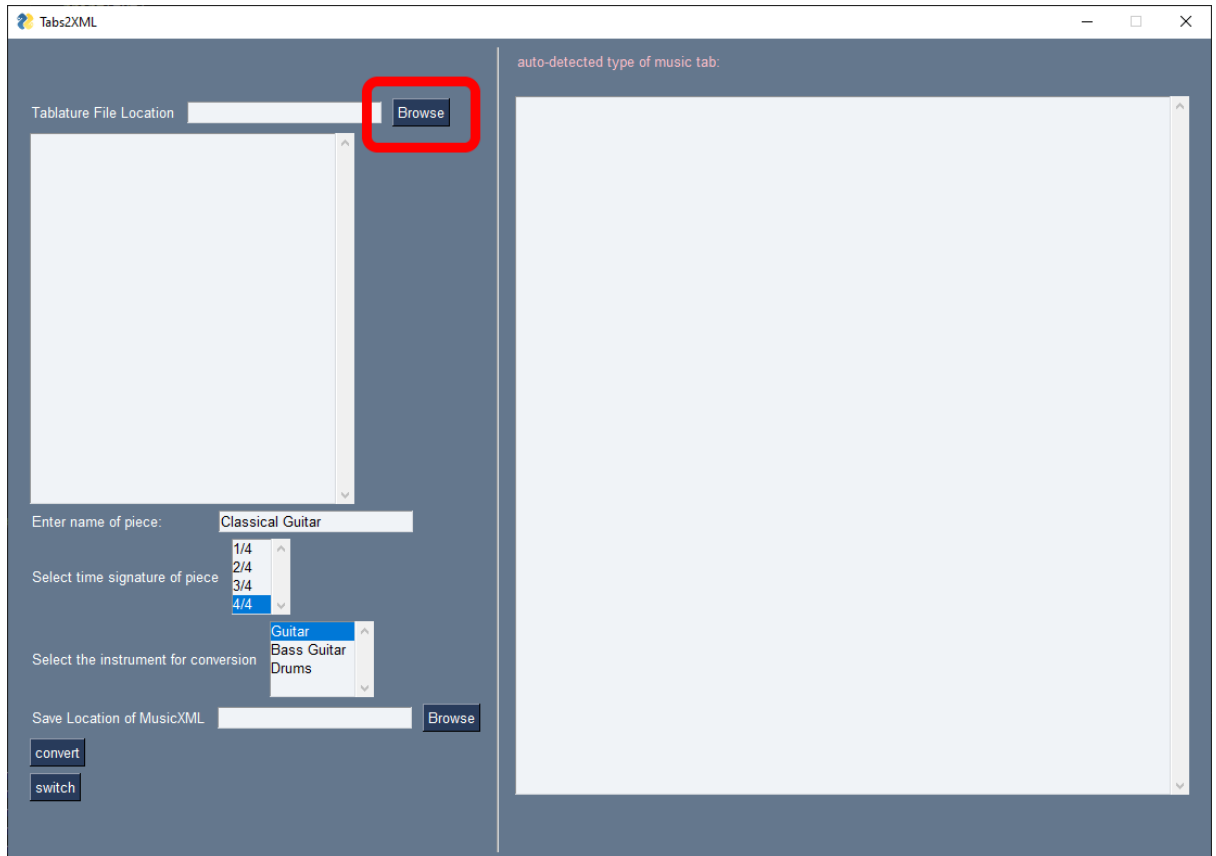
- Download the project as a zipped file from the github. (<https://github.com/arjitjohar/Group10Project>)
- Unzip the download and store it on your system.
- Launch VS Code.
- Click File > Open Folder > *Select the directory where the non-zipped project file is located*.
- Open main.py.
- Hit “Run Code”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



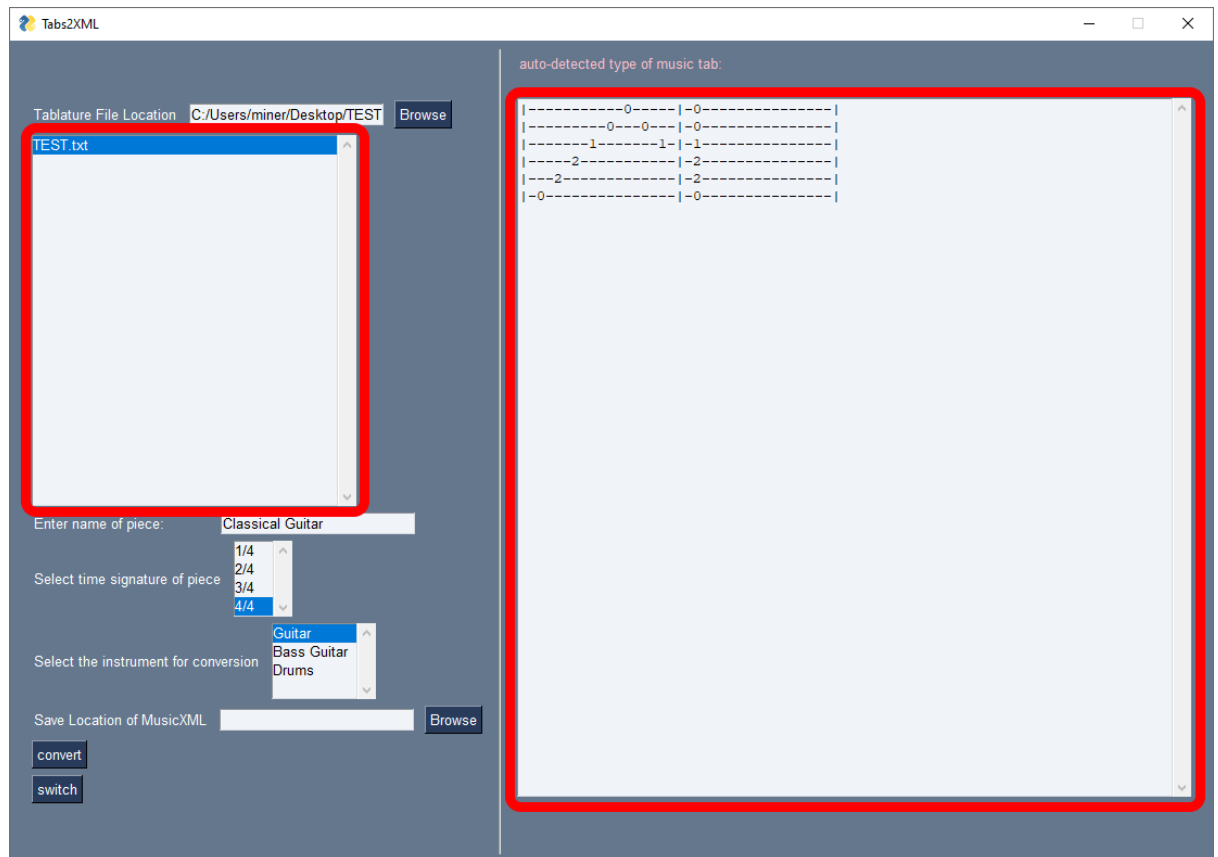
In the event that they require further assistance, they can react out to our support staff at hiangel@my.yorku.ca.

4.0 Description of How to Use/Operate the Product

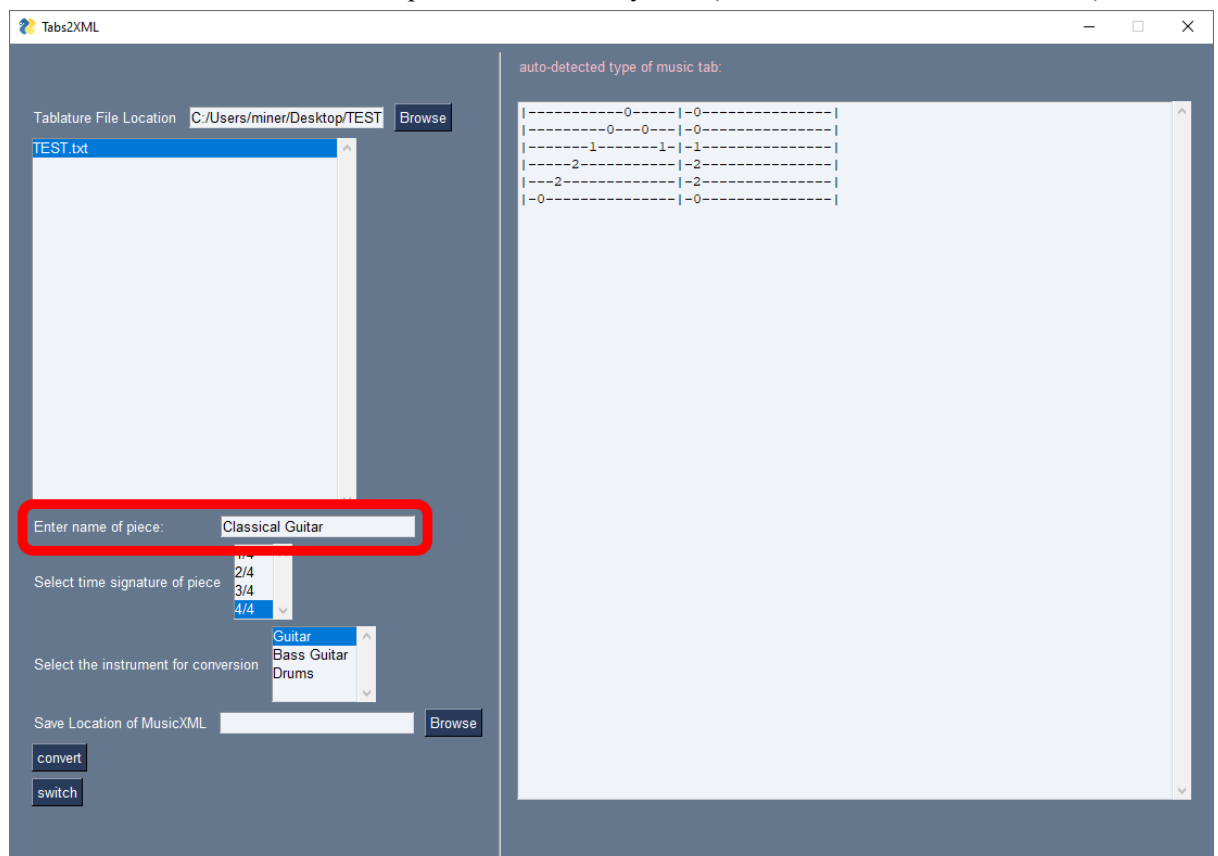
1. The user selects the directory where the file is stored by clicking on the “Browse” button (clicking this button brings up the computer’s file explorer). Note that the file manager may state “No items match your search” because it only accepts folder directories, not individual files’.



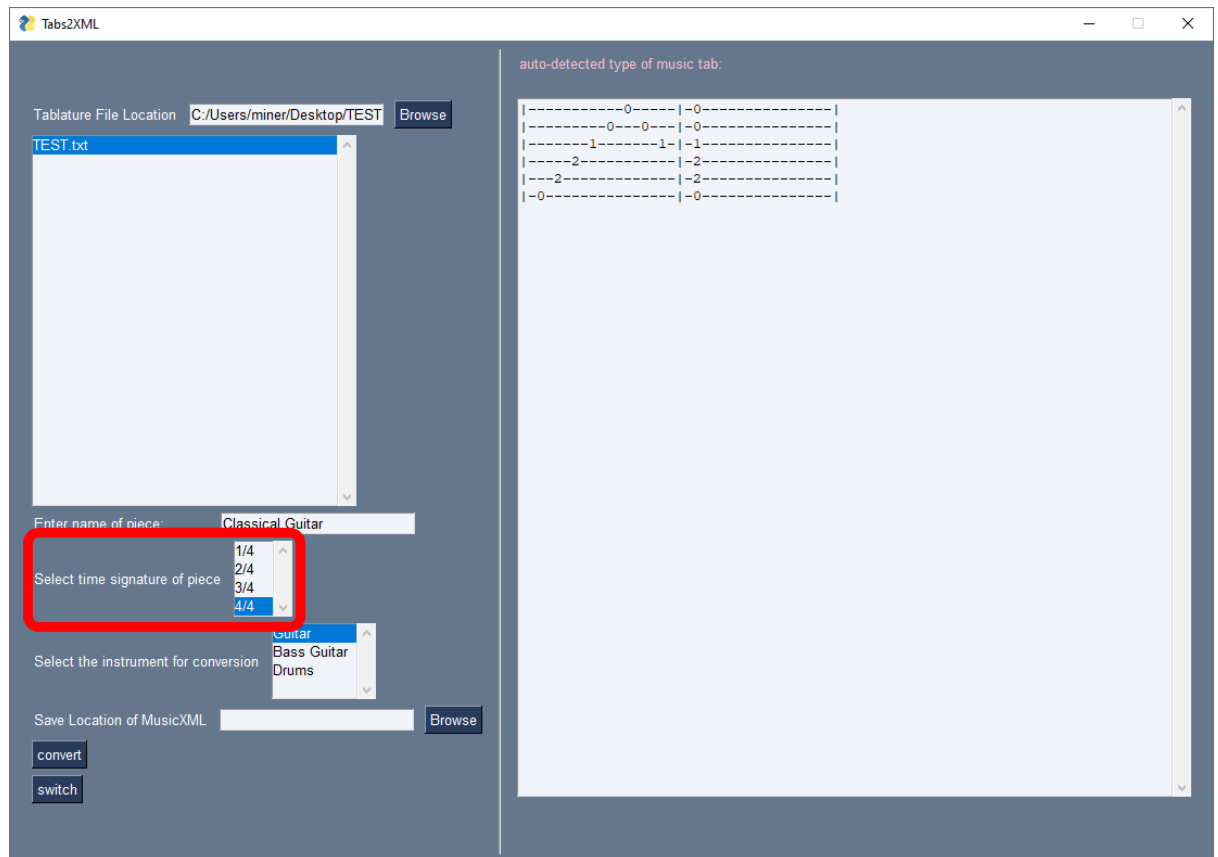
- The user selects the tablature from the file list (left) that they wish to convert. A preview is then shown as to what the MusicXML file looks like (right).



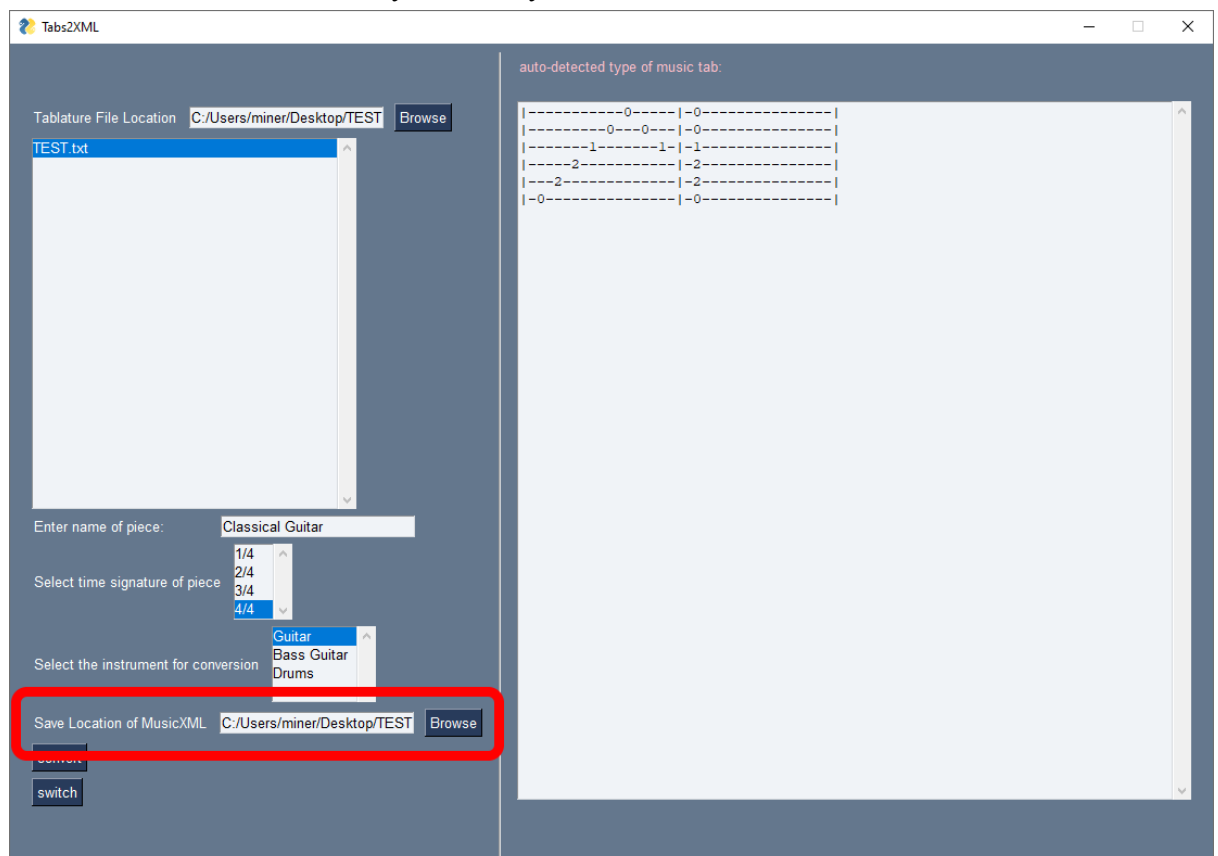
- The user renames the name of the piece into what they want (default name is Classical Guitar).



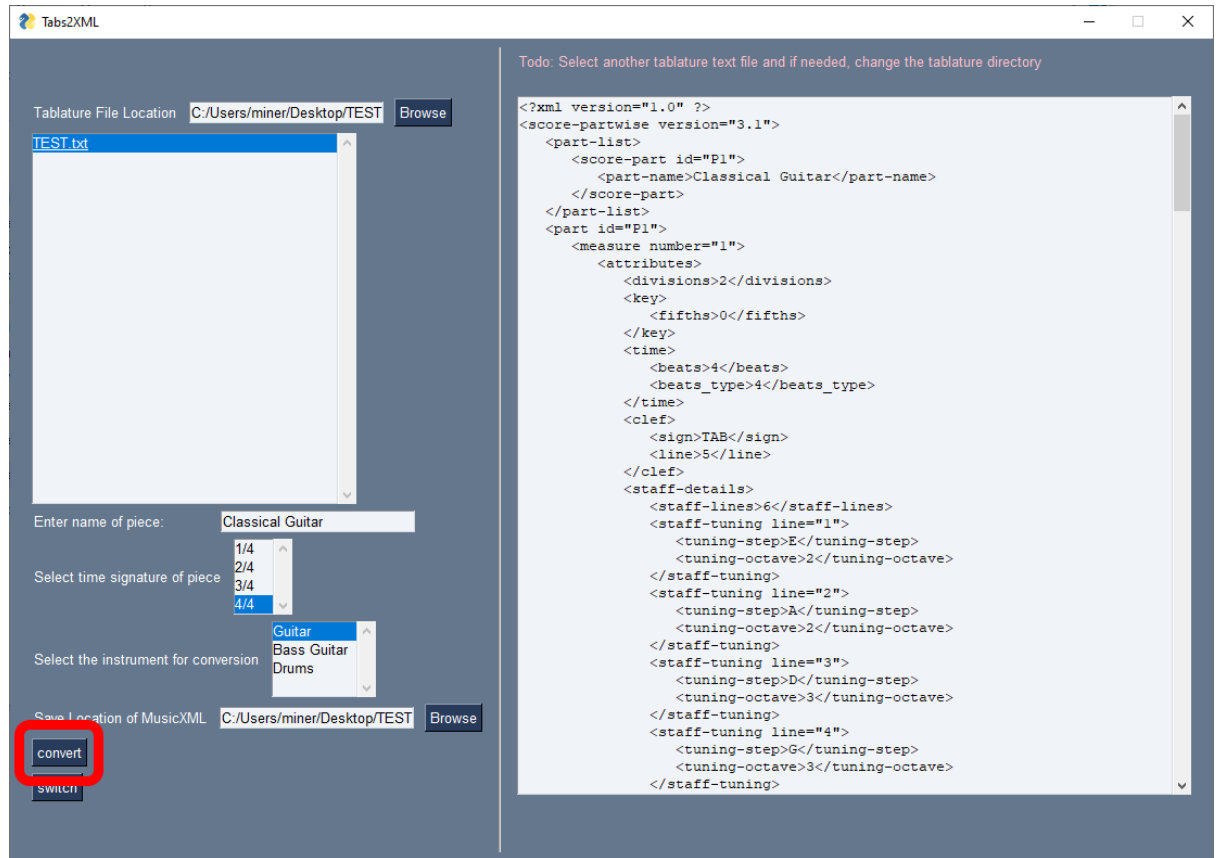
4. The user chooses which time signature they want to use if they want to change it (by default, this is set to 4/4).



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.

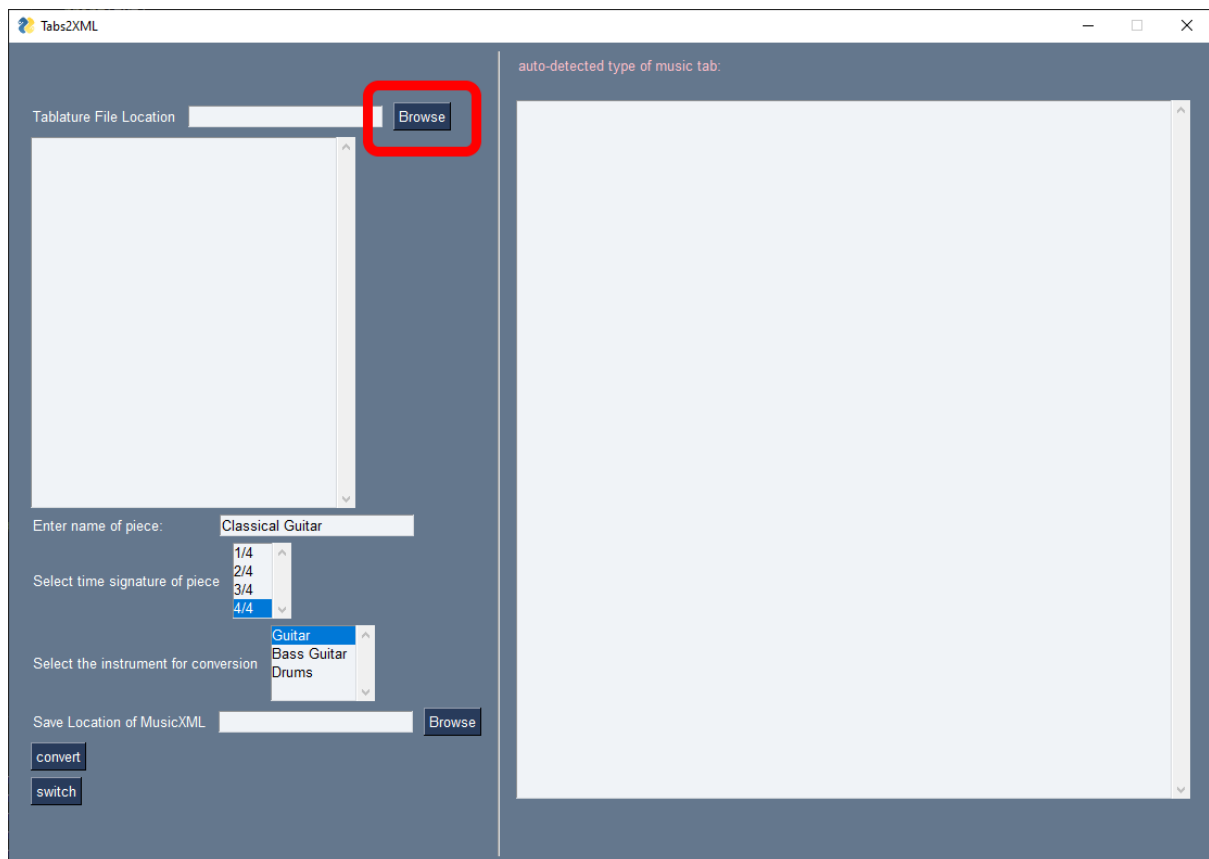
6.0 Troubleshooting & Solving Problems

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 reach out to our support staff at hiangel@my.yorku.ca.

7.0 Description of the UI

7.1 Browse Button (Input)



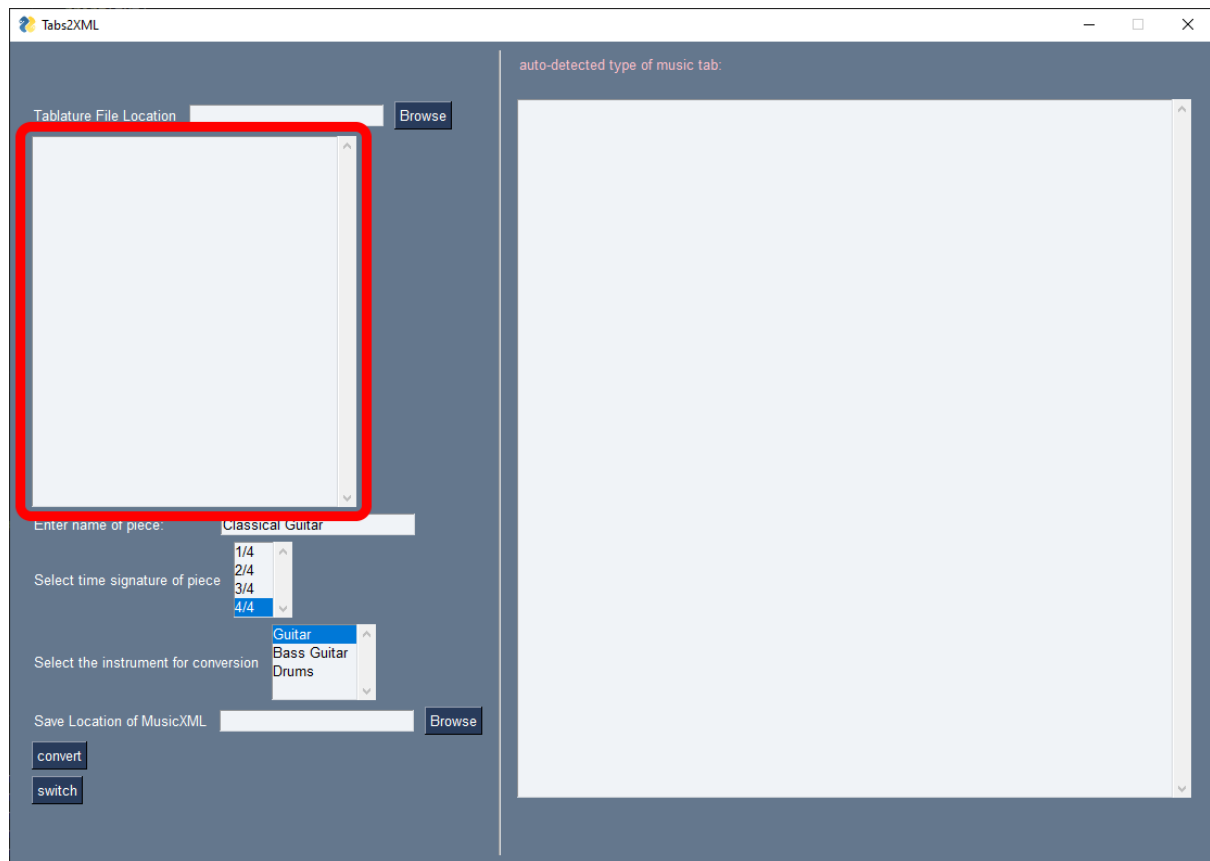
When clicked on, this button sends the user to their file management application, so they can choose the directory of the folder the tablature text file to convert is inside.

7.2 Tablature File Location

The screenshot shows the Tabs2XML application window. The title bar reads "Tabs2XML". The interface is divided into two main sections. The left section contains input fields and controls: a "Tablature File Location" text box with a "Browse" button next to it (this text box is highlighted with a red rectangle), a large empty text area below it, an "Enter name of piece:" text box with "Classical Guitar" entered, a "Select time signature of piece" dropdown menu with options 1/4, 2/4, 3/4, and 4/4 (4/4 is selected), a "Select the instrument for conversion" dropdown menu with options Guitar, Bass Guitar, and Drums (Guitar is selected), a "Save Location of MusicXML" text box with a "Browse" button, and three buttons at the bottom: "convert", "switch", and "convert". The right section is titled "auto-detected type of music tab:" and contains a large empty text area.

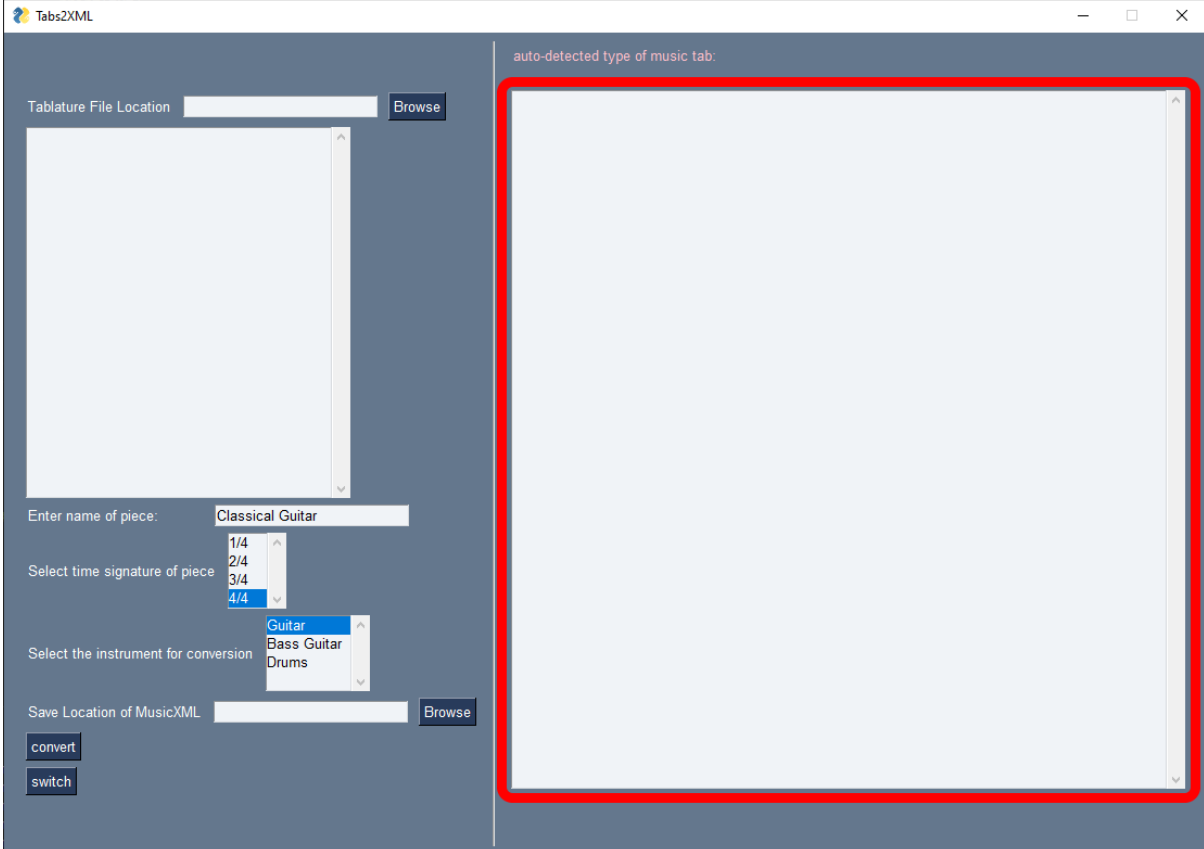
Displays the directory of the Tablature File being inputted. This is determined by the directory of the file selected when using the “Browse” button.

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



The screenshot shows the Tabs2XML web application interface. On the left side, there are several input fields and buttons: a "Tablature File Location" field with a "Browse" button, a large empty text area for the file content, an "Enter name of piece:" field with "Classical Guitar" entered, a "Select time signature of piece" dropdown menu with "4/4" selected, a "Select the instrument for conversion" dropdown menu with "Guitar" selected, a "Save Location of MusicXML" field with a "Browse" button, and "convert" and "switch" buttons. On the right side, there is a large text area labeled "auto-detected type of music tab:" which is currently empty. This text area is highlighted with a red border.

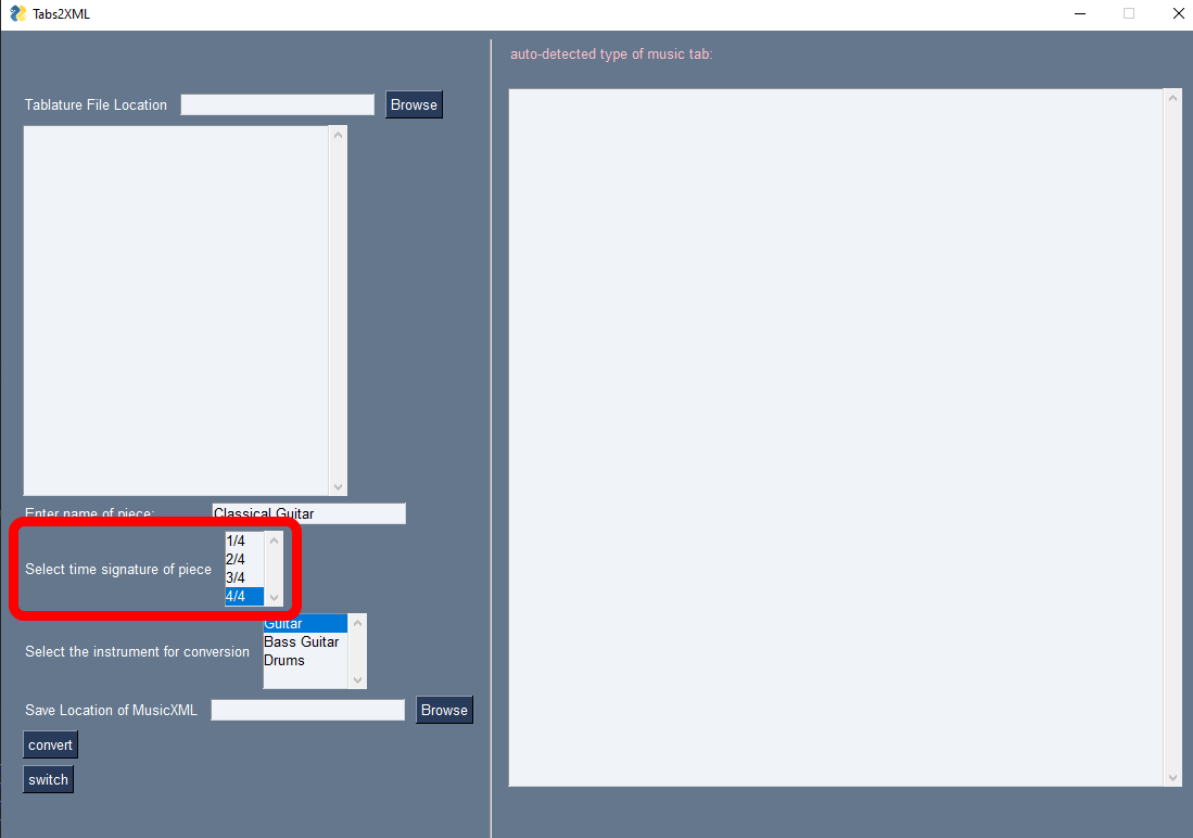
This text box displays the contents of the text file that is to be converted. When convert is clicked, the text box displays a preview of the MusicXML file that is saved onto the save directory.

7.5 Name of Piece

The screenshot shows the Tabs2XML application window. On the left, there are several input fields and buttons. The 'Enter name of piece:' text box is highlighted with a red rectangle and contains the text 'Classical Guitar'. Below it is a 'Select time signature of piece' dropdown menu with options 1/4, 2/4, 3/4, and 4/4. Below that is a 'Select the instrument for conversion' dropdown menu with options Guitar, Bass Guitar, and Drums. At the bottom left are 'convert' and 'switch' buttons. Above the 'convert' button is a 'Save Location of MusicXML' field with a 'Browse' button. At the top left is a 'Tablature File Location' field with a 'Browse' button. On the right side of the window, there is a label 'auto-detected type of music tab:' above a large empty text area.

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

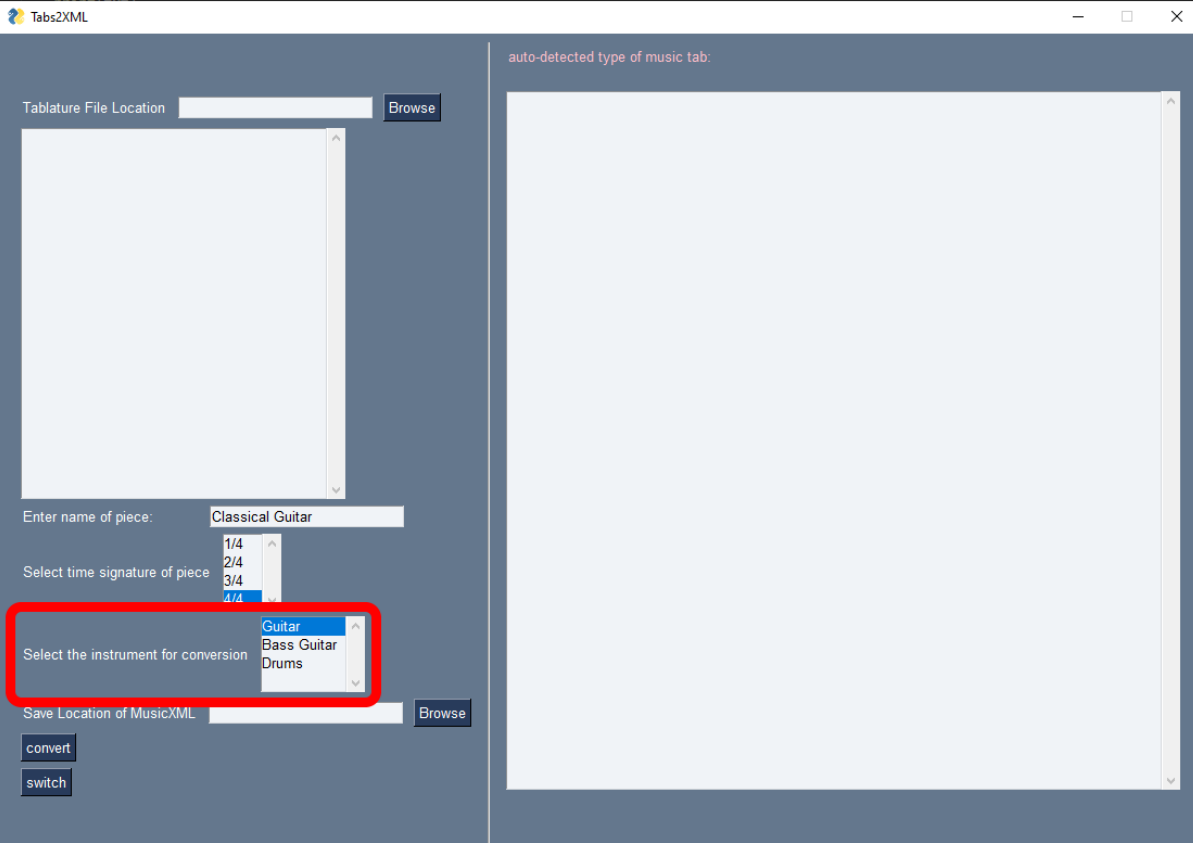
7.6 Time Signature



The screenshot shows the Tabs2XML web application interface. On the left side, there is a form with several input fields and buttons. The 'Tablature File Location' field has a 'Browse' button. Below it is a large empty text area. The 'Enter name of piece:' field contains 'Classical Guitar'. The 'Select time signature of piece' dropdown menu is open, showing options: 1/4, 2/4, 3/4, and 4/4. The 4/4 option is selected and highlighted. Below this is the 'Select the instrument for conversion' dropdown menu, which shows options: Guitar, Bass Guitar, and Drums. The 'Guitar' option is selected. At the bottom of the form, there is a 'Save Location of MusicXML' field with a 'Browse' button, and two buttons labeled 'convert' and 'switch'. On the right side of the interface, there is a large empty text area with the label 'auto-detected type of music tab:' above it.

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

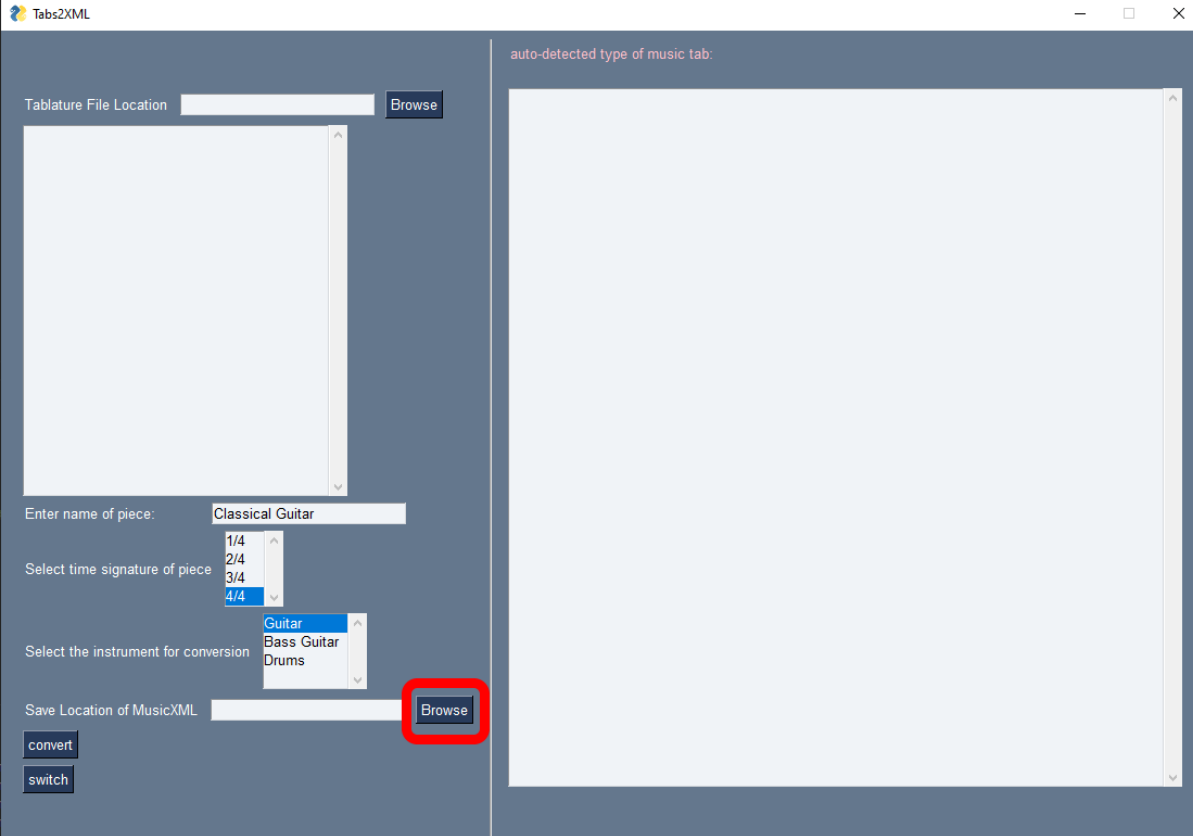
7.7 Instrument Type



The screenshot shows the Tabs2XML application window. On the left, there is a form with several fields and buttons. The 'Tablature File Location' field has a 'Browse' button. Below it is a large empty text area. The 'Enter name of piece:' field contains 'Classical Guitar'. The 'Select time signature of piece' dropdown shows options 1/4, 2/4, 3/4, and 4/4. The 'Select the instrument for conversion' dropdown is highlighted with a red rectangle and shows options: Guitar, Bass Guitar, and Drums. Below this is the 'Save Location of MusicXML' field with a 'Browse' button. At the bottom left are 'convert' and 'switch' buttons. On the right, a large area labeled 'auto-detected type of music tab:' is currently empty.

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

7.8 Browse Button (Output)



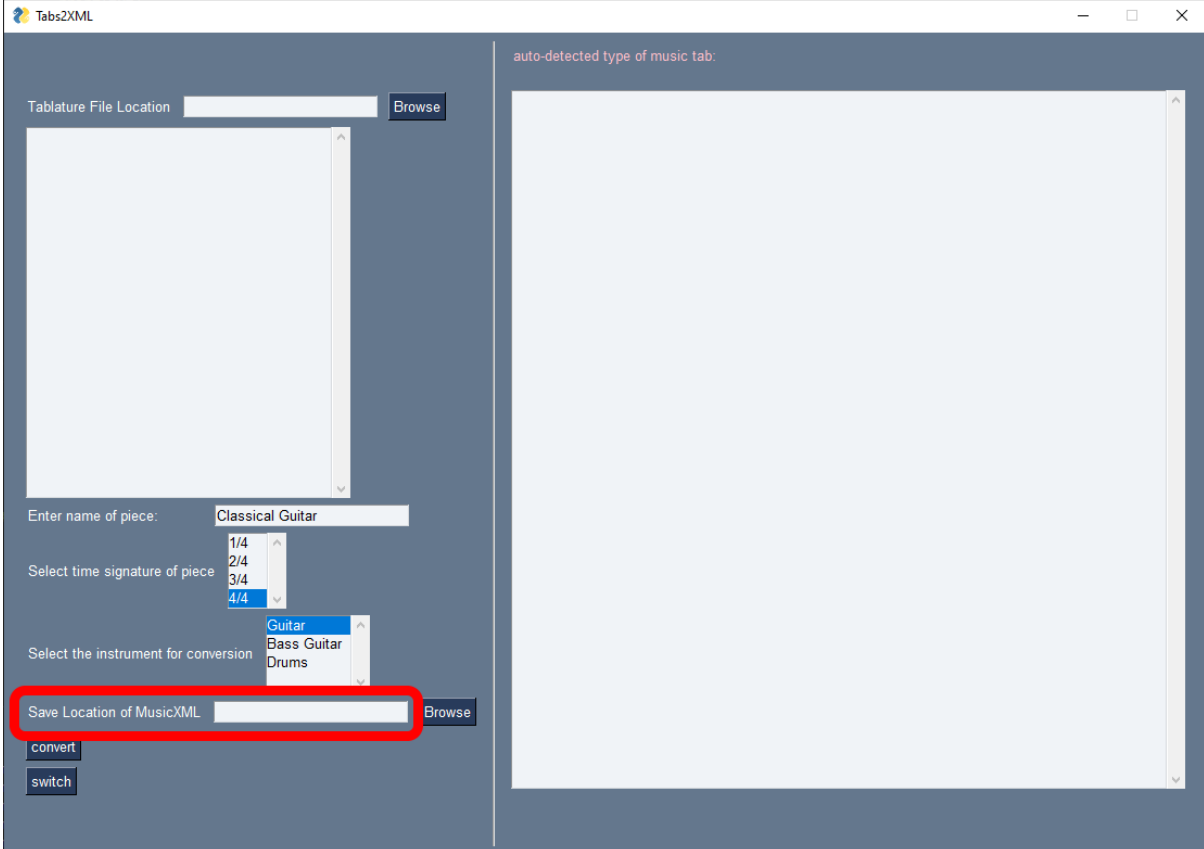
The screenshot shows the Tabs2XML application window. On the left, there is a form with the following elements:

- Tablature File Location:** A text input field with a "Browse" button next to it.
- Enter name of piece:** A text input field containing "Classical Guitar".
- Select time signature of piece:** A dropdown menu with options 1/4, 2/4, 3/4, and 4/4. The 4/4 option is selected.
- Select the instrument for conversion:** A dropdown menu with options Guitar, Bass Guitar, and Drums. The Guitar option is selected.
- Save Location of MusicXML:** A text input field with a "Browse" button next to it. This button is highlighted with a red rectangle.
- convert** and **switch** buttons are located at the bottom left.

On the right side of the window, there is a large empty area with the text "auto-detected type of music tab:" at the top.

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.

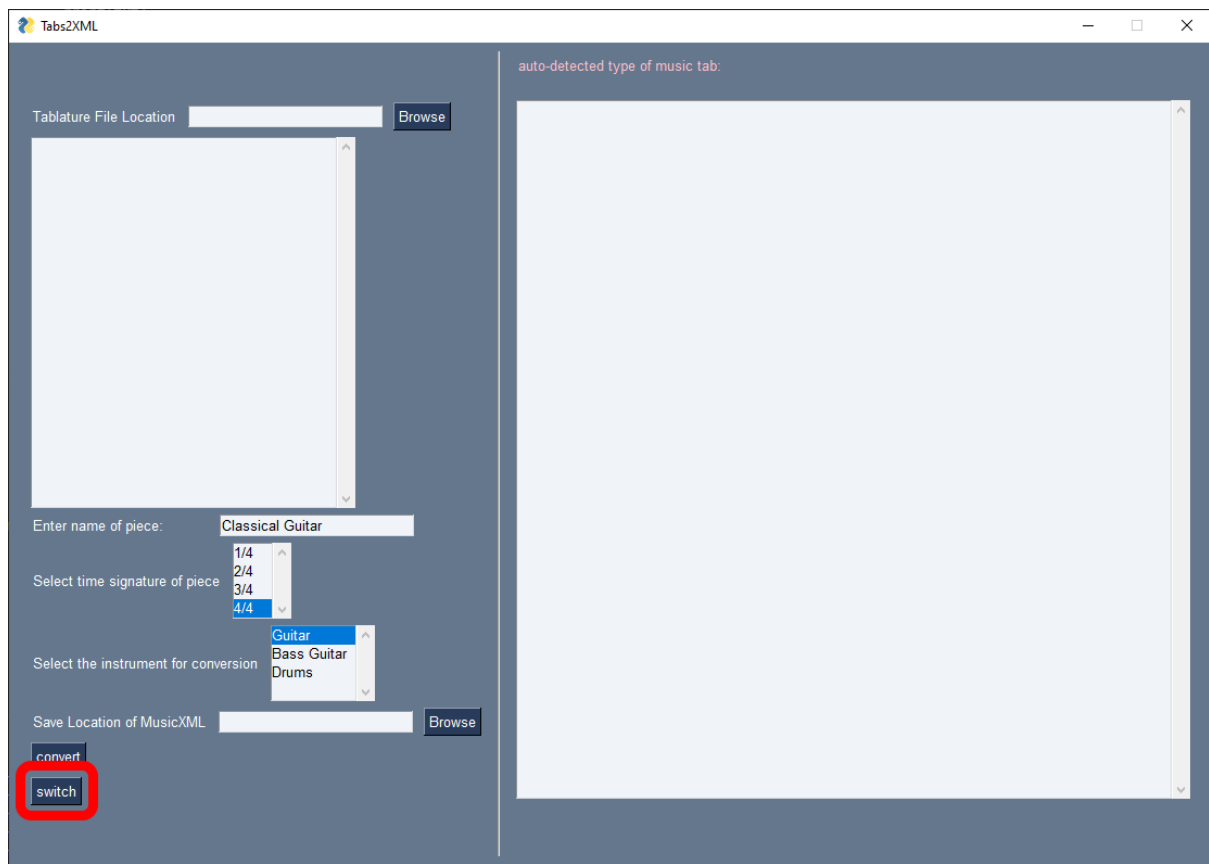
7.9 Save Location of MusicXML



The screenshot shows the Tabs2XML web application interface. On the left side, there are several input fields and buttons. At the top, there is a "Tablature File Location" text box with a "Browse" button next to it. Below this is a large, empty text area. Further down, there is a text box labeled "Enter name of piece:" containing the text "Classical Guitar". Below that is a dropdown menu for "Select time signature of piece" with options 1/4, 2/4, 3/4, and 4/4. Below that is another dropdown menu for "Select the instrument for conversion" with options Guitar, Bass Guitar, and Drums. At the bottom of the left panel, there is a text box labeled "Save Location of MusicXML" which is highlighted with a red rectangle, and a "Browse" button next to it. Below this are three buttons: "convert", "switch", and "switch". On the right side of the interface, there is a large, empty text area with the label "auto-detected type of music tab:" at the top.

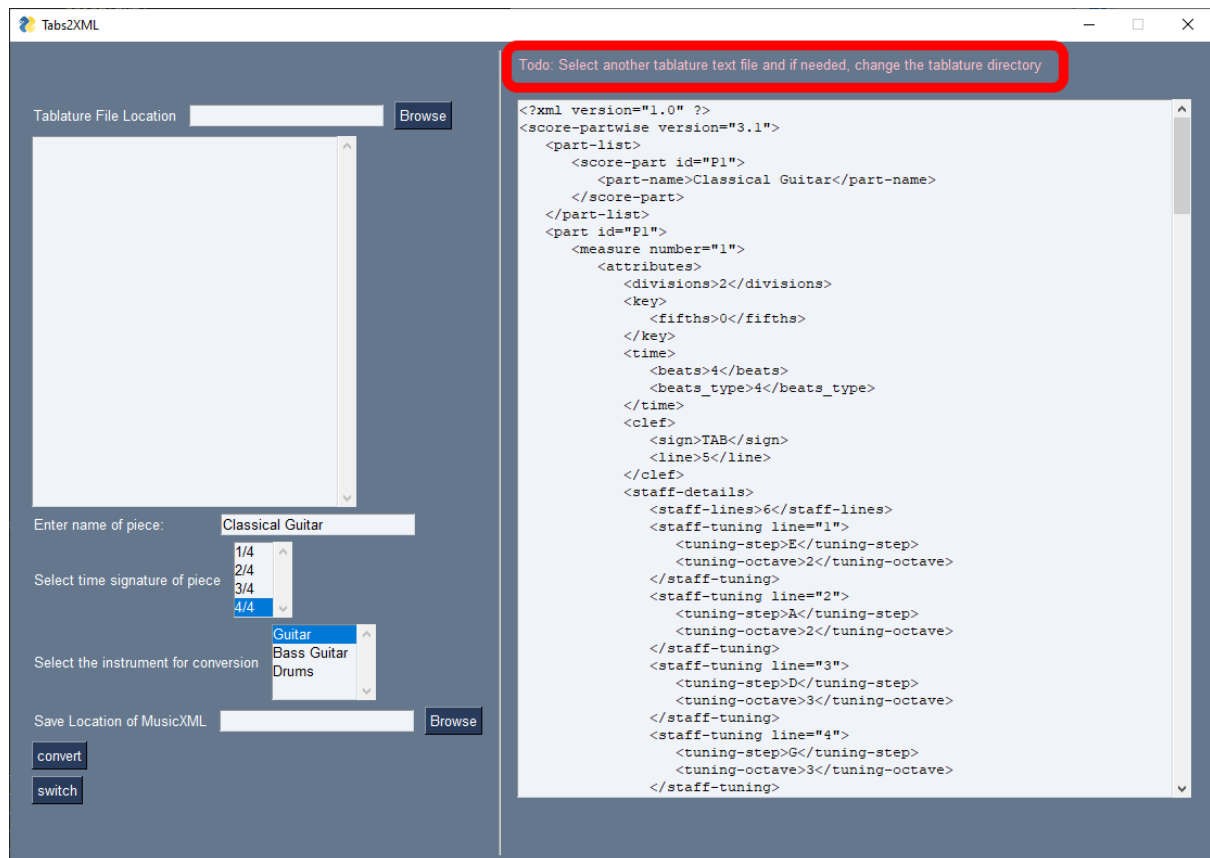
Displays the directory of the MusicXML file being outputted. This is determined by the directory of the file selected when using the “**Browse**” button (see above).

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.”