

**TAB2XML**

Design Document

**Group 6**

**Elmira Onagh**

**Irsa Nasir**

**Long Lin**

**Harjap Randhawa**

**Daniel Di Giovanni**



Winter 2022

**Table of Content**

[**1.** **Visualization of MusicXML** 2](#_Toc99480109)

[**1.1.** **Instrument: Guitar** 3](#_Toc99480110)

[**1.1.1** **Sequence Diagram** 3](#_Toc99480111)

[**1.1.2** **UML Class diagram** 6](#_Toc99480112)

[1.2. Instrument: Drum 7](#_Toc99480113)

[1.3. Instrument: Bass 9](#_Toc99480114)

[**2.** **Playing the tablature** 9](#_Toc99480115)

[2.1. Instrument: Guitar 9](#_Toc99480116)

[2.2. Instrument: Drum 10](#_Toc99480117)

[2.3. Instrument: Bass 13](#_Toc99480118)

[**3.** **Printing the Music sheet** 13](#_Toc99480119)

[**4.** **Go to measure** 14](#_Toc99480120)

# **Visualization of MusicXML**

Based on the instrument specified in the input tablature, three different objects are created: guitar, drum, and Bass. In the following section we look at different diagrams related to creation and relationships of these classes.

Diagram

Description automatically generated

Figure 1. Overall activity diagram of the visualizing a tablature as a music sheet.

### **Instrument: Guitar**

If the input tablature is a guitar tablature, then a Guitar class is instantiated. The creation and displaying the elements of the tablature in form of music sheet is done through the drawGuitar method.

In the section 1.1.1 the sequence diagrams depicting the sequence of events taken to visualize guitar notes can be found. The Diagrams are broken down in parts to both ease the understanding and visualization of the sequence of events.

In section 1.1.2, we will discuss a UML Class diagram of the Guitar class and its interactions with various classes.

#### **Sequence Diagram**

Diagram, text

Description automatically generated

Figure 2. Overall Sequence diagram of displaying guitar tablature.

Graphical user interface

Description automatically generated

Figure 3. Sequence diagram describing the events taken in drawGuitar method of Guitar class.

Diagram

Description automatically generated

Figure 4. part A dictates the events taken place inside a method that draws the notes inside a given Measure object. For each given Note object in the Measure, if note has a technical tag, then drawNoteWithTechnical method is used to draw/ display the note. Part B shows events taken place inside the previously mentioned method and indicates which methods are used based on whether the given note has Chord and/or grace tag respectively.

Diagram

Description automatically generated

Figure 5. The sequence diagram of the four self-calls depicted on figure 4. B in more details and their interaction with DrawNote class to display their respective notes on screen. Diagram A indicates the events that results in grace notes, Diagram B, the ones that results in regular notes, diagram C ones that results in grace chord and finally diagram D the ones that result in regular chords being displayed on the screen.

Graphical user interface

Description automatically generated

Figure 6. Detailed sequence diagram of draw Type self-call on Guitar class.

#### **UML Class diagram**

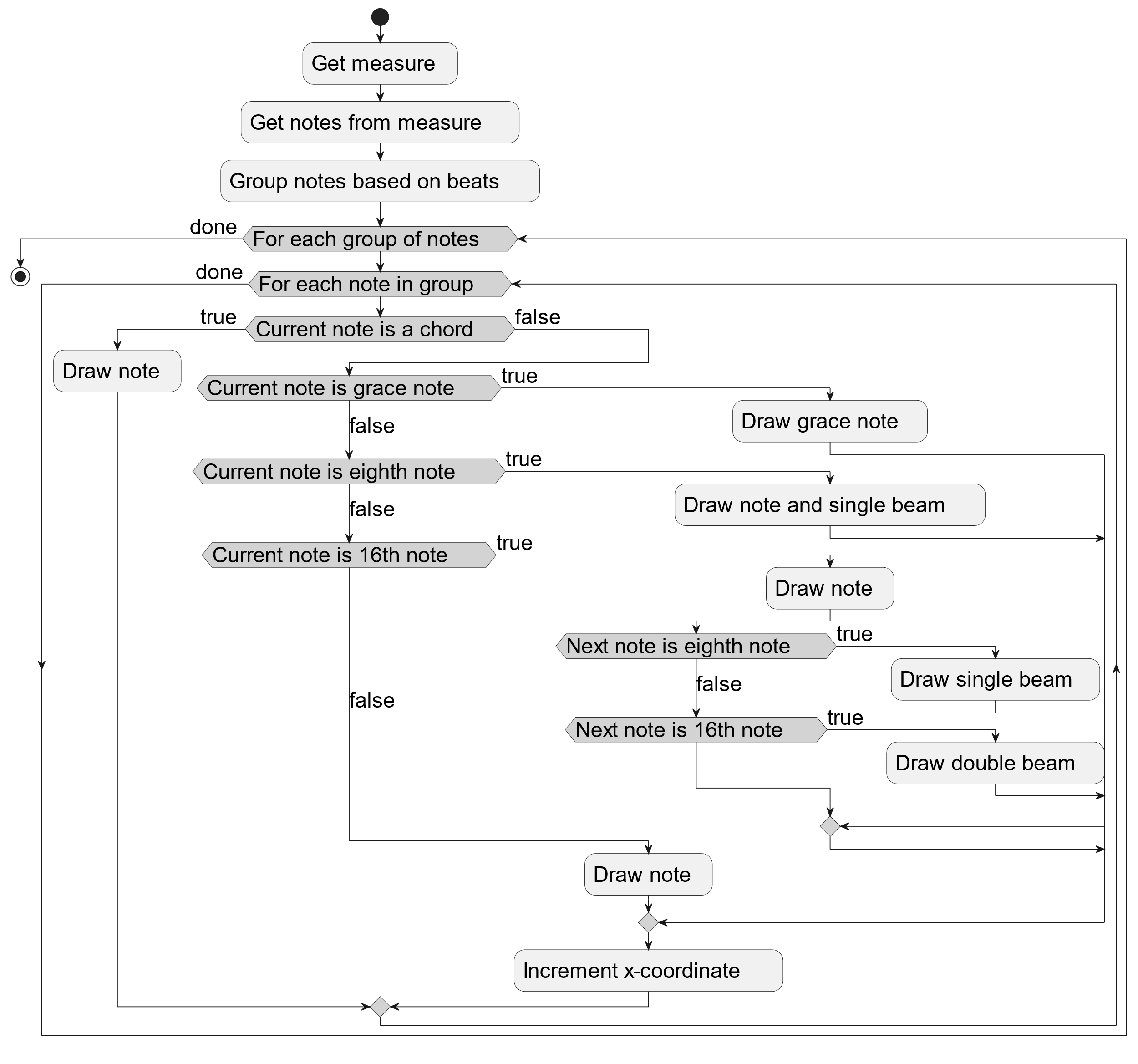
Graphical user interface, application

Description automatically generated

Figure 2. Class diagram of the Guitar class and it interactions.

### Instrument: Drum







### Instrument: Bass

# **Playing the tablature**

### Instrument: Guitar

2.1.1 UML class diagram

Graphical user interface, application

Description automatically generated

### Instrument: Drum

2.2.1 UML class diagram

Graphical user interface, application

Description automatically generated

2.1-2.2 Activity diagramA screenshot of a computer screen

Description automatically generated with low confidence

### Instrument: Bass

# **Printing the Music sheet**

Printer Sequence Diagram

A picture containing diagram

Description automatically generated

Printer Activity Diagram

Diagram

Description automatically generated

# **Go to measure**

**Group 6**

**Elmira Onagh**

**Irsa Nasir**

**Long Lin**

**Harjap Randhawa**

**Daniel Di Giovanni**