

**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](#_Toc99570870)

[**1.1.** **Instrument: *Guitar*** 3](#_Toc99570871)

[**1.1.1** **Sequence Diagram** 3](#_Toc99570872)

[**1.1.2** **UML Class diagram** 4](#_Toc99570873)

[**1.2.** **Instrument: *Drum*** 5](#_Toc99570874)

[**1.3.** **Instrument: *Bass*** 6](#_Toc99570875)

[**2.** **Playing the tablature** 7](#_Toc99570876)

[**2.1.** **Activity Diagram** 7](#_Toc99570877)

[**3.1.** **UML class diagram: *Guitar*** 8](#_Toc99570878)

[**4.1.** **UML class diagram: *Drum*** 8](#_Toc99570879)

[**6.** **Printing the Music sheet** 9](#_Toc99570880)

[**6.1.** **Sequence Diagram** 9](#_Toc99570881)

[**6.2.** **Activity Diagram** 10](#_Toc99570882)

[**7.** **Go to measure** 11](#_Toc99570883)

[**7.1.** **[Name] Diagram** 11](#_Toc99570884)

# **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 the 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 of the elements of the tablature in form of a music sheet are done through the *drawGuitar* method.

In 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 into parts to ease the understanding and visualization.

In section 1.1.2 UML Class diagram is included to show the interactions between the *Guitar* class and other classes that result in displaying the musical elements on the screen.

#### **Sequence Diagram**

A screenshot of a computer

Description automatically generated with medium confidence

**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.

#### **UML Class diagram**

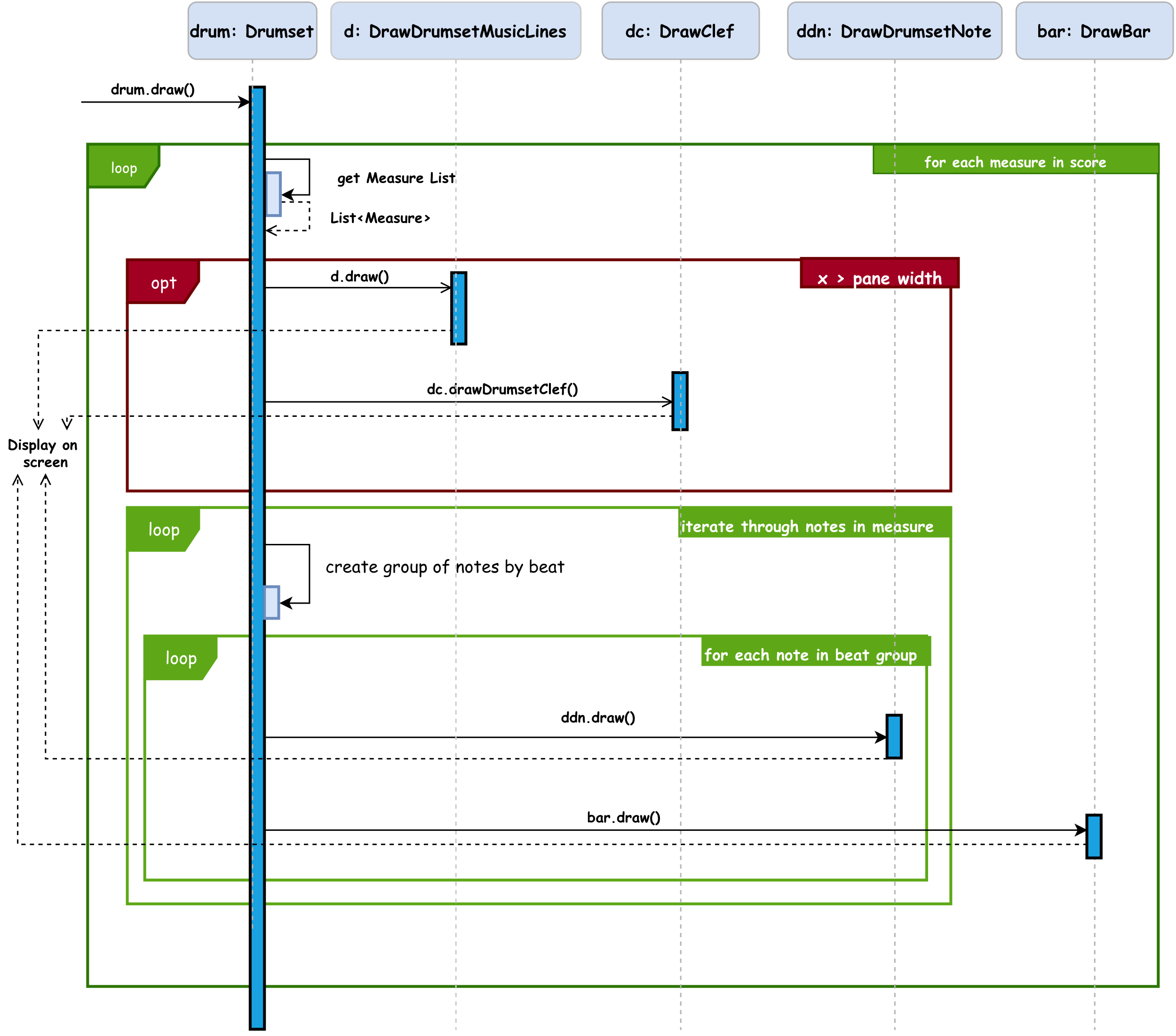
A screenshot of a computer

Description automatically generated with medium confidence

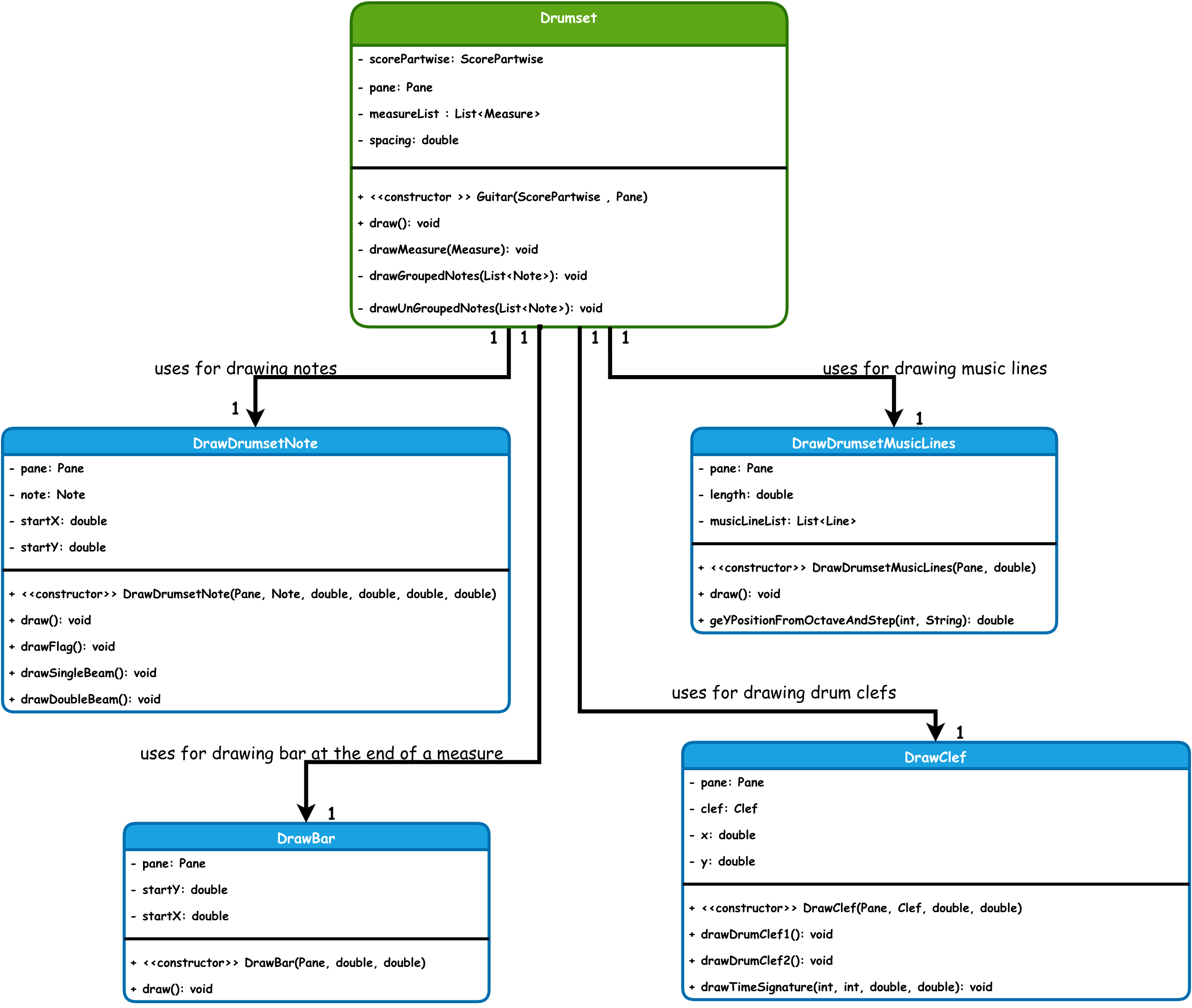
**Figure 4.** Class diagram of the *Guitar* class and its interactions. The green coloured *Guitar* class belongs to the *instrument* package while the blue classes belong to the *GUI.draw* package. The public, private, protected attributes and operations are denoted by “+”, “-”, and “#” respectively.

### **Instrument: *Drum***

The following two diagrams are sequence and class diagrams for the Drumset class, showing its workflow and the other classes it uses/interacts with.



**Figure 5**. Sequence diagram of the Drumset class and its interactions with the classes DrawDrumsetMusicLines, DrawClef, DrawDrumsetNote, and DrawBar.



**Figure 6.** Class Diagram of the Drumset class and the classes it uses.

### **Instrument: *Bass***

**A picture containing text

Description automatically generated**

# **Playing the tablature**

In this section, we will cover the design diagrams related to the Play functionality of the system. In section 2.1 an Activity diagram describing the overall events taken to play the notes is included. In the following sections, UML class diagrams depicting the specific methods of *MusicPlayer* class used for each instrument can be found.

### **Activity Diagram**

1. A screenshot of a cell phone

   Description automatically generated with medium confidence

**Figure 7**. Activity diagram of play music note function for guitar and drum

### **UML class diagram: *Guitar***

1. A screenshot of a computer

   Description automatically generated with low confidence

**Figure 8**. The public, private, protected attributes and operations are denoted by “+”, “-”, and “~” respectively.

### **UML class diagram: *Drum***

1. A screenshot of a computer

   Description automatically generated with low confidence

**Figure 9**. The public, private, protected attributes and operations are denoted by “+”, “-”, and “~” respectively.

# **Printing the Music sheet**

Some description…

### **Sequence Diagram**

Diagram

Description automatically generated

**Figure 10**. Sequence diagram for print function.

### **Activity Diagram**

Diagram

Description automatically generated

**Figure 11.** Activity diagram for print function.

# **Go to measure**

### **Activity Diagram**

A picture containing diagram

Description automatically generated

Figure: Activity Diagram showing the events that result in selecting the Measure.

**Group 6**

**Elmira Onagh**

**Irsa Nasir**

**Long Lin**

**Harjap Randhawa**

**Daniel Di Giovanni**