## Guitar Tuner Documentation

Introduction

Guitar Tuner, is a set of C# scripts, as well as a core library, that uses the Microphone class from the UnityEngine API, as well as signal processing algorithm, to detect what note is played by a string instrument.

This document is a Quick Start guide to make use of Guitar Tuner. The code within is documented and should be easy to understand.

FrequencyAnalyser

The FrequencyAnalyser.cs script is the one handling the Microphone inputs & analyse of it's signals.
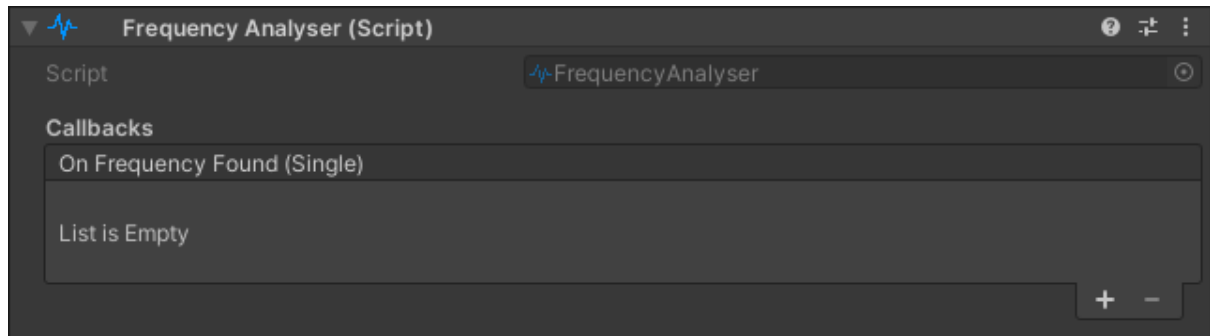
It's main methods are:

Init(float minFreq, float maxFreq**):**

     it initialises the FrequencyAnalyser, with min and max frequencies

GetClipFrequency(AudioClip clip, int offsetSamples (optional)**)**

     it returns the peak frequency for an AudioClip

GetClipPeakFrequencies(AudioClip clip, int offsetSamples (optional)**)**

     it returns an array of Peak frequencies for an AudioClip

AnalyseClip(AudioClip clip, int offsetSamples (optional)**)**

     it returns an Analyse object, containing peaks and volume infos

GetClipVolume(AudioClip clip, int offsetSamples (optional)**)**

     it will define which microphone to use during an analyse

SetMicrophoneIndex(int micIndex**)**

     it will define which microphone to use during an analyse

StartMicrophoneAnalyser(int samplePerSeconds (optional)**)**

     it will start recording sound from the microphone and analysing at a defined rate

StopMicrophoneAnalyser()

     it will stop the recording and the analyse

onSampleAnalysed

     it's an action to subscribe to, to get notified when an Analyse has been produced

     from the Microphone's input

# Demo Scenes

Frequency Display

Within the FrequencyDisplay scene, you can see how to easily interface with Frequency Analyser, for realtime peak frequency detection, with a microphone.

Frequency from AudioClip

Within the FrequencyFromAudioClip scene, you can see how to get the peak frequency of an audio file (AudioClip) without the use of the microphone.

Tuners

If you just want to use a Guitar/Ukulele/Bass tuner into your project, you can find examples inside *AntoineCherel/InstrumentTools/GuitarTuner/Demo*.
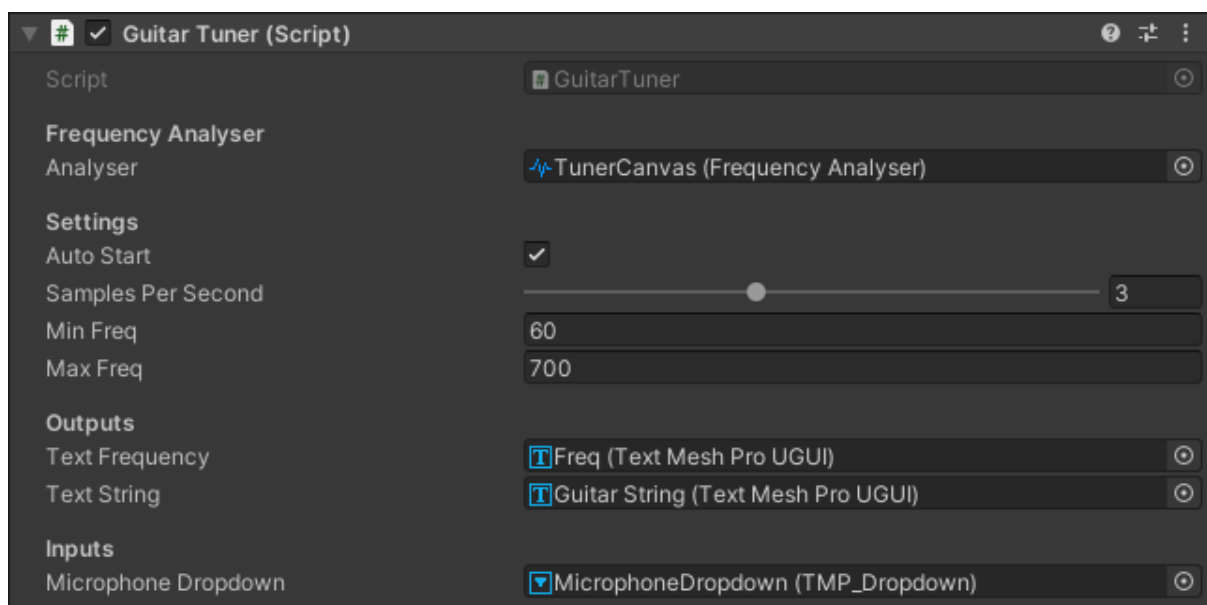
You will find examples for standard tunings.

By checking *GuitarTuner.cs*, *UkuleleTuner.cs*, *BassTuner.cs* & *Tuner.cs*, you will find examples of how to interface with the FrequencyAnalyser, in a more complex way, by smoothing the Analyser's result and displaying it to the user.

Debugging

You can find a Debugging window, under *Window/Antoine Cherel/Guitar Tuner Tool.*

Guitar Tuner Tool

This editor window will allow you, in Play Mode, to see what frequencies and volume were found by the FrequencyAnalyser currently active.

Thanks

Thank you for purchasing this asset. If you find it useful, please leave a review on the Asset Store.

For any question, ask contact@antoinecherel.dev.