



DroneMachine

<https://derelictcomputer.itch.io/dronemachine>

Overview

DroneMachine is a procedural ambient music creation tool for Unity3d based on the principles behind phase music. That's a fancy way of saying that it lets you quickly create endless, non-repeating music that responds to your game. Place synthesizer objects and key change triggers in a scene, and DroneMachine takes care of the rest.

Features

- Create endless, non-repeating, positional ambient music in minutes
- Modify individual synthesizer settings to find your game's signature sound
- Place key change/speed triggers to accentuate important events, locations, and characters
- Generate custom synthesizer tones to further dial in your sound

Phase Music

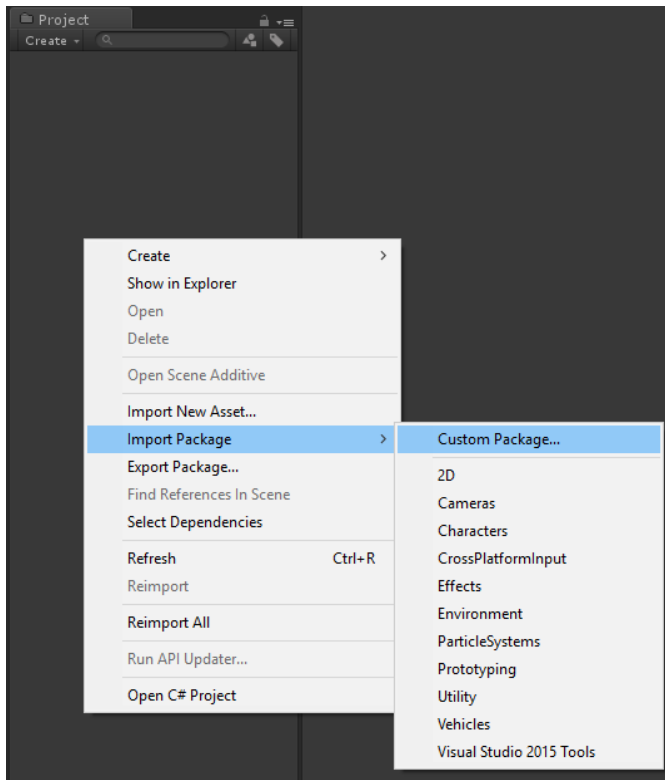
DroneMachine takes advantage of the music composition technique called “phasing”. Phasing, in its simplest form, involves two musicians playing an identical musical phrase repeatedly, with one musician gradually changing speed or shifting the phrase by a number of notes. This produces an evolving, textural effect with sustained tones, or a complex rhythmic pattern with percussive sounds. A classic example of the technique is Steve Reich's piece entitled “[Piano Phase](#)”.

DroneMachine consists of a collection of synthesizers each playing a single note that changes volume over time. If the length of time (“speed multiplier” in the DroneSynth settings) of two notes is different, they produce a pattern that can evolve over a long period of time.

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Installation

To install DroneMachine, create or open a Unity project and double click the Unity package you just downloaded. Alternatively, from within your Unity project, you can right-click in the project pane, select “Import Package”, then “Custom Package”, then find the unity package via the file open dialog.



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Getting Started

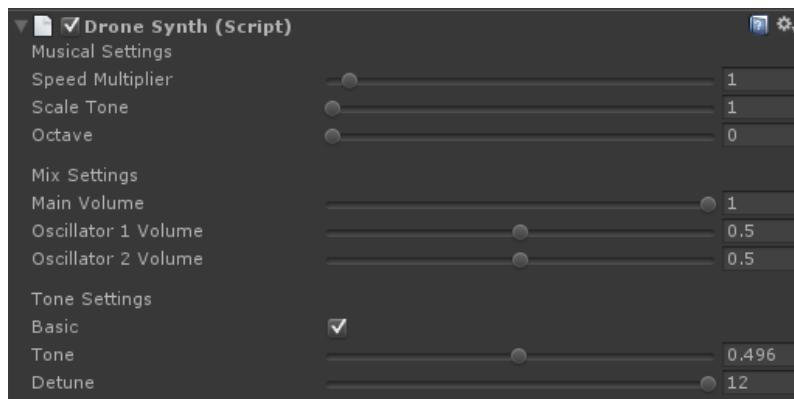
The fastest way to learn how DroneMachine works is to check out the example scene located in `Assets/DroneMachine/Examples/Scenes`.

DroneMachine consists of two main components--DroneSynth and KeyChanger. You'll need at least one of each in order for DroneMachine to make sound.

DroneSynth

A DroneSynth is a synthesizer that produces a single tone and changes volume over time. It has settings for the tone, pitch and volume of the synth, as well as what note it should play when active, and for how long it should play.

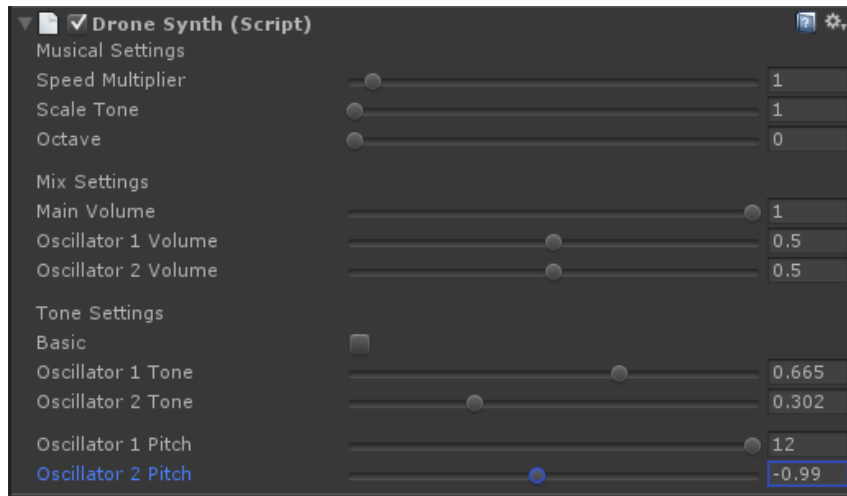
Basic DroneSynth Editing



- Speed Multiplier: controls how much faster or slower the synth's volume will change
- Scale Tone: sets which tone of the current scale the synth should play.
- Octave: sets which octave the synth should play in
- Main Volume: the overall volume knob for the synth
- Oscillator 1 & 2 Volume: the volume of each of the two audible oscillators
- Basic: toggles basic/advanced synth editing mode
- Tone: sets the timbre of the synth
- Detune: offsets one oscillator in semitones (12 means one octave up)

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Advanced DroneSynth Editing



Toggling off “Basic” gives you a few more parameters to play with in the synth.

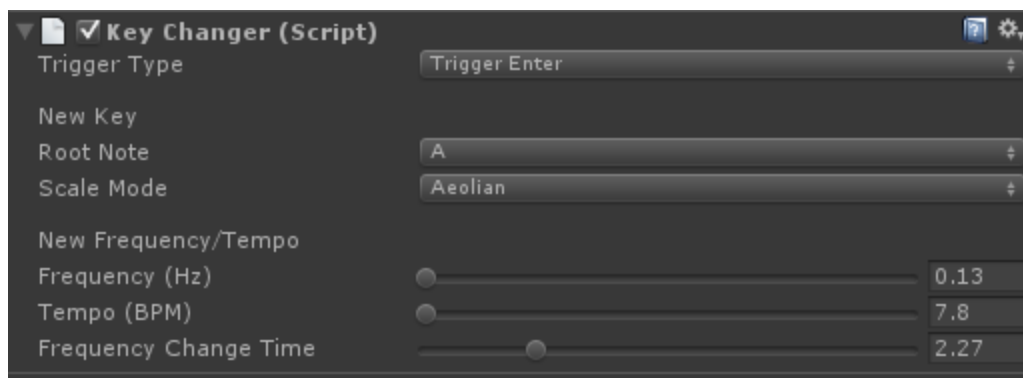
- Oscillator 1 & 2 Pitch: sets the pitch of each oscillator in semitones
- Oscillator 1 & 2 Tone: sets the timbre of each oscillator independently by selecting a blend of wavetables

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KeyChanger

A KeyChanger tells DroneMachine what key it should be in and how fast it should play. You can set them to trigger on start, or upon colliding with something in the scene (such as the player character).

KeyChanger Editing



- Trigger Type: specifies the event that should cause the KeyChanger to report back to the global DroneMachine
- Root Note: the musical note that will be used as the root of the scale
- Scale Mode: the mode of the scale that will be used (more info about modes [here](#))
- Frequency: the frequency of the main timer used by all DroneSynths
- Tempo: an alternate method of setting the frequency, based on musical tempo (BPM)
- Frequency Change Time: the amount of time that the frequency of the main timer should “slide” to the new setting

The background of the header features a dark green gradient with a bright white circular light source at the top center, creating a lens flare effect. Several dark, geometric shapes resembling drone rotors are scattered across the scene.

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Going Further

Custom Wavetables

Under the hood, a DroneSynth has two wavetable oscillators ([more info](#)). You can use the built-in wavetables that come with DroneSynth, or you can create your own using any audio editor. Add mono, single-cycle waveforms as audio files to your project, then select “Wavetables” -> “Make Wavetables” from the Unity menu. A dialog will appear to select the folder which contains your wavetable audio files.

NOTE: There is currently a bug where wavetable creation will fail on the first try after compiling scripts. It is being looked into. Luckily, all you have to do to work around it is run “Make Wavetables” a second time.

Getting Help

If you run into an issue not covered in this manual, have a feature request, or find a bug, please stop by the [forum](#) and leave a message.