

SOLO-PLAY

# GAME MUSIC COMPOSER

Interactive Music

**CREATIVE TRACK EMPHASIS**



D A Y : D N E

Background <=> Mechanics  
Adaptations  
Synthesis

## ONE DAY

GAME MUSIC COMPOSER

GAME MUSIC BACKGROUND 10-20 MINUTES

SHORT BREAK 10 MINUTES

CONCEPTS | FORM AND STRUCTURE 10-15 MINUTES

DEVELOPING SKILLS PRACTICE 50 MINUTES

SHORT BREAK 10 MINUTES

MEETING WITH DEVELOPER 15 MINUTES

PROJECT PLANNING MEETING WITH INSTRUCTOR 10-15 MINUTES

PRACTICE EXERCISE IN SKILLS WITH SLIGHT VARIATIONS 30  
MINUTES

REVIEW CONCEPTS | HOMEWORK 10-20 MINUTES

“Music is the universal language of mankind.”

—HENRY WADSWORTH LONGFELLOW  
AMERICAN LYRICAL POET

WHAT IS INTERACTIVE MUSIC?

HOW DOES THAT RELATE TO GAME MECHANICS?

[HTTPS://WWW.BARRYVAN.COM.AU/DEMOS/GENERATIVE.HTML](https://www.barryvan.com.au/demos/generative.html)

[HTTP://IANBEAN.COM/TONEWARP/INDEX.HTML](http://ianbean.com/tonewarp/index.html)

YOU ARE AN ARTIST

GOOD THEFT	BAD THEFT
HONOR	DEGRADE
STUDY	SKIM
STEAL FROM MANY	STEAL FROM ONE
CREDIT	PLAGIARIZE
TRANSFORM	IMITATE
REMIX	RIP OFF

STEAL LIKE AN ARTIST.

Know what you like  
and adapt things to who you are  
that it becomes your signature.

COLLABORATE WITH A GAME DEVELOPER

NEWS

LEARN

DOWNLOAD

EXAMPLES

COMMUNITY

PLUGINS



# Desktop and Mobile HTML5 game framework

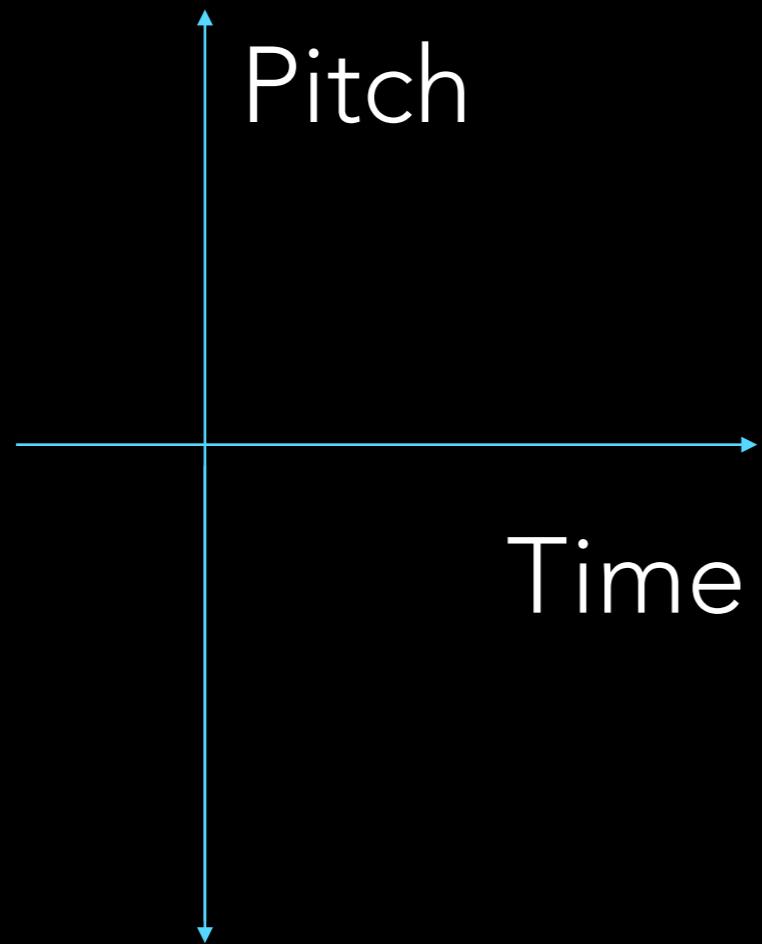
A fast, free and fun open source  
framework for Canvas and WebGL  
powered browser games.

**DOWNLOAD & GET STARTED**  
Download or Fork via Github



2.4.7

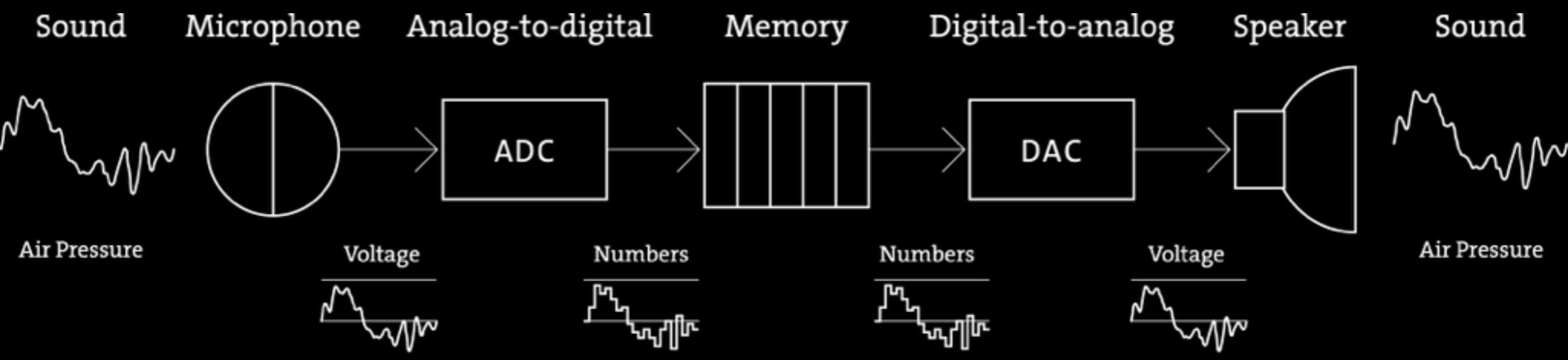
# AXES OF MELODY



## 12 PITCHES

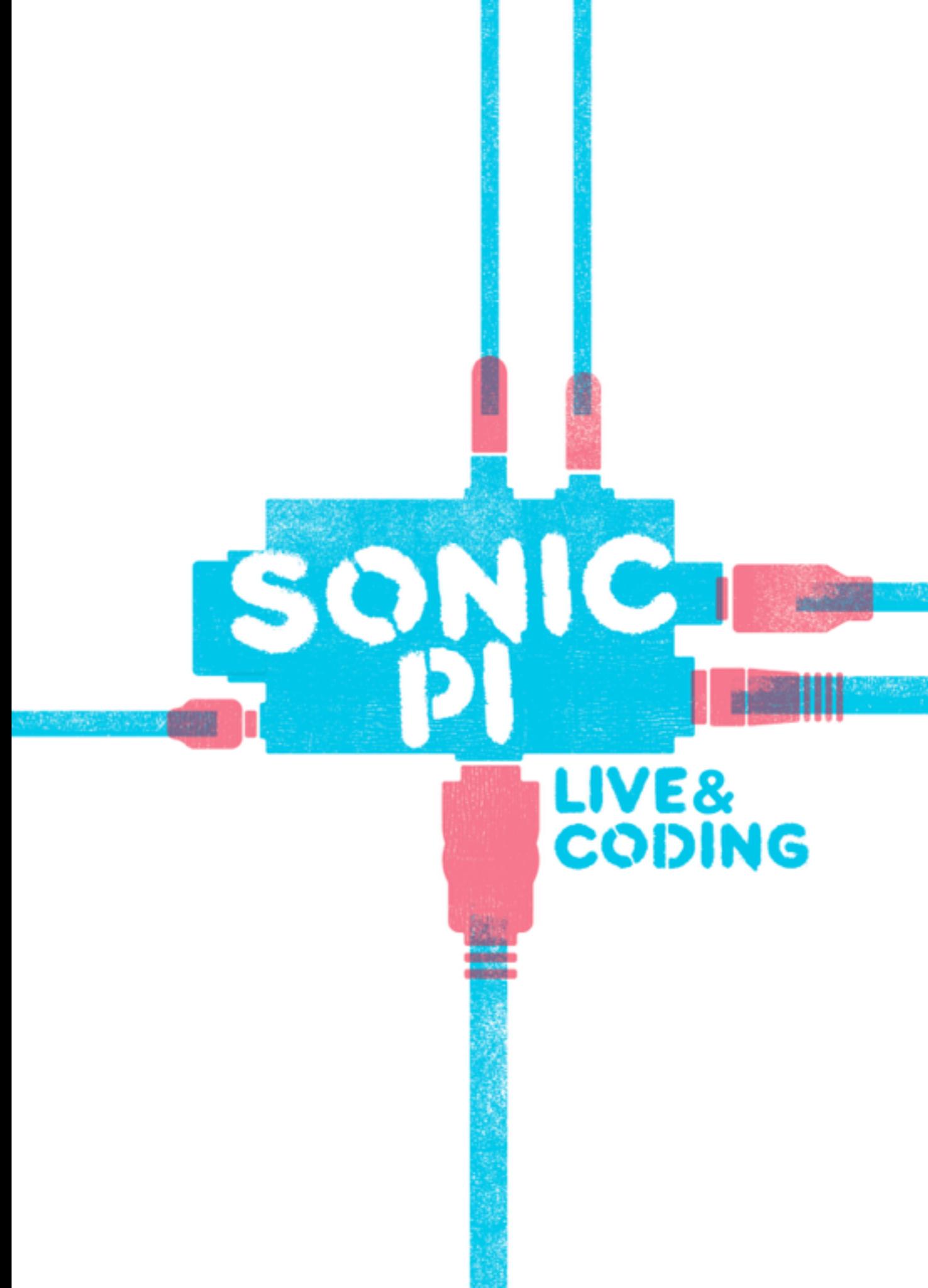


# SOUND TRANSLATION



CHALLENGE  
SONIC-PI

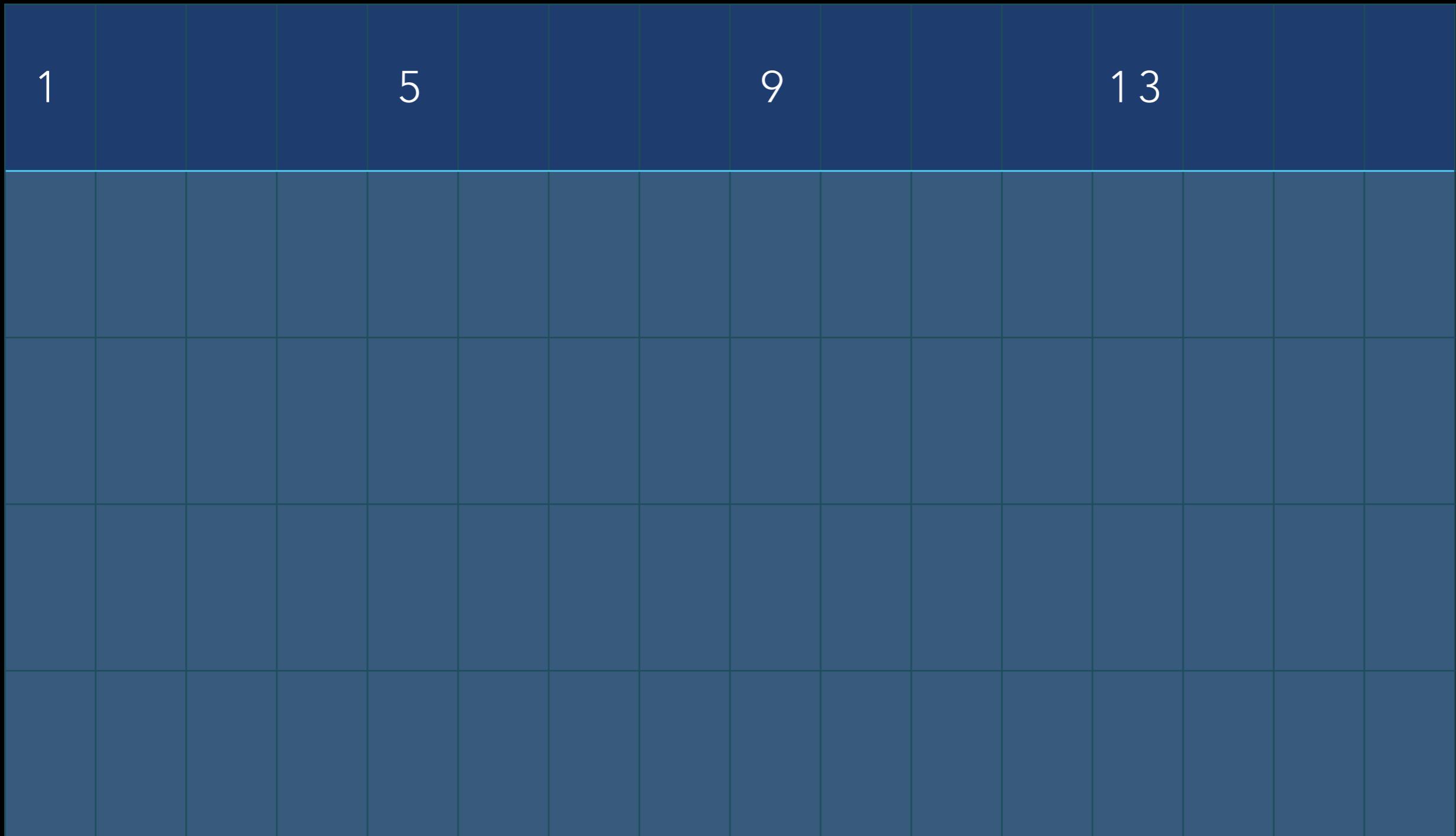
[HTTP://SONIC-PI.NET/](http://sonic-pi.net/)



# EXERCISE

- Translate the 12 pitches (Piano keys) into a sequencer.
- Pick a few octaves and convert them to MIDI note numbers.

# Sequences



<http://gametabs.net>

<http://www.free-midi.org/>

SONIC-PI

\*MUST NAME THIS\*

Run ▶ Stop ■ Save ❤ Rec ○

```
1 live_loop :CEG do
2   play :C
3   sleep 0.5
4   play :E
5   sleep 1
6   play :G
7   sleep 0.5
8 end
```

code

BLOCK

Remember the colors

```

1 #Buzzy pluck 1 105bpm LOOPX2
2 # 8@13
3 E3 0.25
4 G3 0.25
5 E3 0.25
6 G3 0.25
7 # 9@14
8 G3 0.25
9 B3 0.25
10 G3 0.25
11 B3 0.25
12 # 10@15
13 E3 0.25
14 A3 0.25
15 E3 0.25
16 A3 0.25
17 # 11@16
18 E3 0.25
19 G3 0.25
20 E3 0.25
21 G3 0.25
22 # 12@17
23 E3 0.25
24 G3 0.25
25 E3 0.25
26 G3 0.25
27 # 27-30
28 E3 0.25
29 G3 0.25
30 E3 0.25
31 G3 0.25

```

```

1 #guitars aka buzzypluck1-3
2 use_bpm 65
3 ##| live_loop :guitars do
4 in_thread(name: :guitar1) do
5   loop do
6     use_synth :dtri
7     #start at measure 8
8     riffw1 = (ring :r)
9     8.times do
10      play riffw1.tick
11      sleep 1
12    end
13    riff = (ring :e3, :g3, :e3, :g3, :g3, :b3, :g3, :b3, :e3, :a3, :e3, :a3)
14    play riff.tick, release: 0.5, cutoff: 80
15    sleep 0.25
16    riff1 = (ring :e3, :g3, :e3, :g3)
17    play riff1.tick, release: 0.25, cutoff: 80
18    sleep 0.25
19    riff2 = (ring :r)
20    10.times do
21      play riff2.tick
22      sleep 1
23    end
24    8.times do
25      play_pattern_timed [52,55], [0.25], cutoff: 80
26    end
27  end
28 end
29 end
30 end
31 end

```

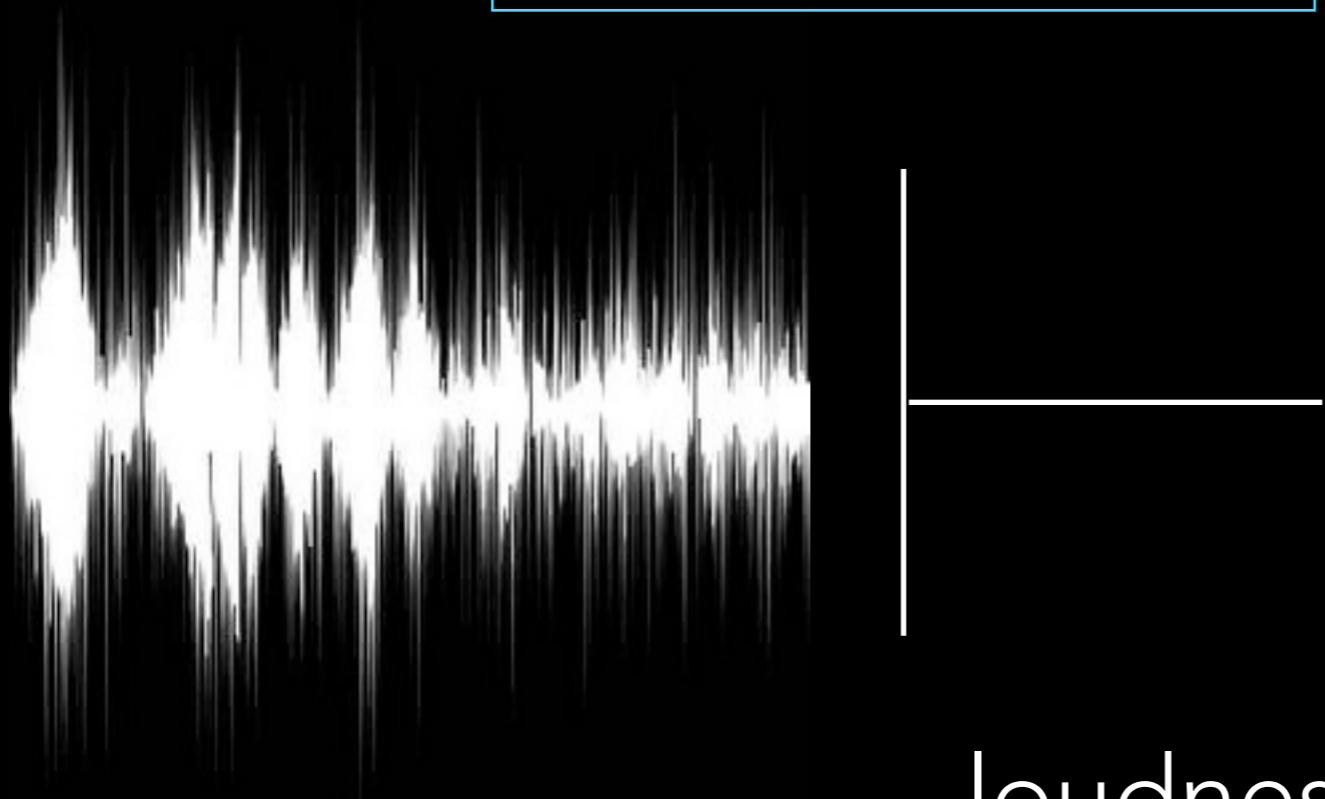
SHORTER →

THE COMPUTER SEES THE COMPLETE DIGITAL SOUND TO THE TYPE OF ROOM YOU ARE IN.



Attack, Decay, Sustain, Release  
ADSR

**AMPLITUDE : "AMP"**



loudness of a sound

In Sonic-Pi    "amp: 0.5"

0-1 but best 0-0.5 to avoid compression

# Software Developer Community: Share codes



<https://github.com/asis/GameProductionProgram>

METER  
METRIC CYCLES  
TIME SIGNATURES  
COMPOUND TIME SIGNATURES  
DEVELOPING AND COMPOSING RHYTHMS  
RHYTHMIC MOTIVES  
TRIPLETS  
RHYTHMIC MOTIVES  
TRIPLETS  
SHUFFLE RHYTHM  
CROSS RHYTHM (=HEMIOLA)



THE METRONOME IS  
YOUR BEST FRIEND

# Major Scales

C Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

D<sub>7</sub> Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 3 1 2 3 4 1 2 1 4 3 2 1 3.

D Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

E<sub>7</sub> Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 1 2 3 4 1 2 3 2 1 4 3 2 1.

E Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

F Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 4 1 2 3 4 3 2 1 4 3 2.

F<sub>7</sub> Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 3 4 1 2 3 1 2 1 3 2 1 4 3.

G Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

A<sub>7</sub> Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 3 1 2 3 1 2 3 2 1 3 2 1 3.

A Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

B<sub>7</sub> Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 1 2 3 4 1 2 3 2 1 3 2 1.

B Major



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

# Harmonic Minor Scales

A Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

B Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

C<sub>7</sub> Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 3 1 2 3 1 2 3 2 1 3.

D Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

E Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 1 2 3 4 1 2 3 2 1 3 2 1.

F<sub>7</sub> Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 4 1 2 3 4 3 2 1 4 3 2.

G Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 1 2 3 1 2 3 4 5 4 3 2 1 3 2.

A<sub>7</sub> Harmonic Minor



A musical staff in G clef with note heads and stems. Below it is a numbered finger guide: 2 3 1 2 3 1 2 3 2 1 3 2 1 2.

## Triads in the Chromatic Scale (Harmonic Form: Key of C)

A musical staff in G clef showing twelve triads in harmonic form. The notes are: C, Cm, D♭, D♭+, Do, Dm, D, E♭, E♭+, Em, Fm, F, F♯. The chords are: C (C-E-G), Cm (C-E-B♭), D♭ (D♭-F-A♭), D♭+ (D♭-F-B♭), Do (D-E-G), Dm (D-E-B), D (D-F-A), E♭ (E♭-G-B♭), E♭+ (E♭-G-C), Em (E♭-G-C), Fm (F-A-C), F (F-A-D), F♯ (F-A-C♯).

## Seventh Chords in the Chromatic Scale (Harmonic Form: Key of C)

A musical staff in G clef showing twelve seventh chords in harmonic form. The notes are: F♯, Go, Gm, G, A♭, Ao, A♭+, A, B♭m, B♭, Bo, Bm. The chords are: F♯ (F♯-A-C♯), Go (G-B-D), Gm (G-B-D), G (G-B-E), A♭ (A♭-C-E♭), Ao (A♭-C-E), A♭+ (A♭-C-E), A (A-C-E), B♭m (B♭-D-F), B♭ (B♭-D-F), Bo (B♭-D-F), Bm (B-D-F).

A second musical staff in G clef showing twelve seventh chords in harmonic form. The notes are: C7, Cmaj7, Cm7, Cm/maj7, D♭maj7, D♭+maj7, Do7, Dm7, D7, E♭7, E♭maj7, E♭+dim7, E♭+maj7. The chords are: C7 (C-E-G), Cmaj7 (C-E-G), Cm7 (C-E-G), Cm/maj7 (C-E-G), D♭maj7 (D♭-F-A♭), D♭+maj7 (D♭-F-B♭), Do7 (D-E-G), Dm7 (D-E-B), D7 (D-F-A), E♭7 (E♭-G-B♭), E♭maj7 (E♭-G-B), E♭+dim7 (E♭-G-B), E♭+maj7 (E♭-G-B).

A third musical staff in G clef showing twelve seventh chords in harmonic form. The notes are: Eodim7, Eo7, Em/dim7, Em7, Fm7, Fm/maj7, F7, Fmaj7, F♯/o/dim7, F♯/o7, Go7, Gm7, Gm/maj7, G7. The chords are: Eodim7 (E♭-G-B), Eo7 (E♭-G-B), Em/dim7 (E♭-G-B), Em7 (E♭-G-B), Fm7 (F-A-C), Fm/maj7 (F-A-C), F7 (F-A-C), Fmaj7 (F-A-C), F♯/o/dim7 (F♯-A-C), F♯/o7 (F♯-A-C), Go7 (G-B-D), Gm7 (G-B-D), Gm/maj7 (G-B-D), G7 (G-B-D).

A fourth musical staff in G clef showing twelve seventh chords in harmonic form. The notes are: Gmaj7, A♭maj7, A♭+maj7, Ao7, Am7, B♭m7, B♭m/maj7, B7, B7, Bo7, Bm/dim7, Bm7. The chords are: Gmaj7 (G-B-D), A♭maj7 (A♭-C-E♭), A♭+maj7 (A♭-C-E), Ao7 (A♭-C-E), Am7 (A♭-C-E), B♭m7 (B♭-D-F), B♭m/maj7 (B♭-D-F), B7 (B-D-F), B7 (B-D-F), Bo7 (B-D-F), Bm/dim7 (B-D-F), Bm7 (B-D-F).

# Quick Review

MIDI (Musical Instrument Digital Interface) -MIDI carries event messages that specify notation, pitch and velocity, control signals for parameters such as volume, vibrato, audio panning, cues, and clock signals that set and synchronize tempo between multiple devices.

It's a digital file that carries all the tonal arrangement in sequence to play your musical composition with the file format ".mid".

<https://en.wikipedia.org/wiki/MIDI>

# sharps - notated as "s" after the note  
"Fs" or "fs"

b flats - notated as "b" after the note  
"Gb" or "gb"

I LOVE IT WHEN YOU GOT QUESTIONS, IT TELLS ME YOUR THINKING ABOUT THIS!

[asis@devleague.com](mailto:asis@devleague.com)



Search GitHub



**Aisis**  
asis



HIFashionTech



Honolulu, HI

<https://github.com/asis>

Your Sonic PI files  
“Flight”  
measure 1.rb  
measure 2.rb  
measure 3.rb  
measure 4.rb  
will be uploaded  
send me a request  
so I can add you

KEEP COMMUNICATING VIA GITHUB

LIVECODE IS  
THE NEW THING  
UNDERGROUND MUSIC

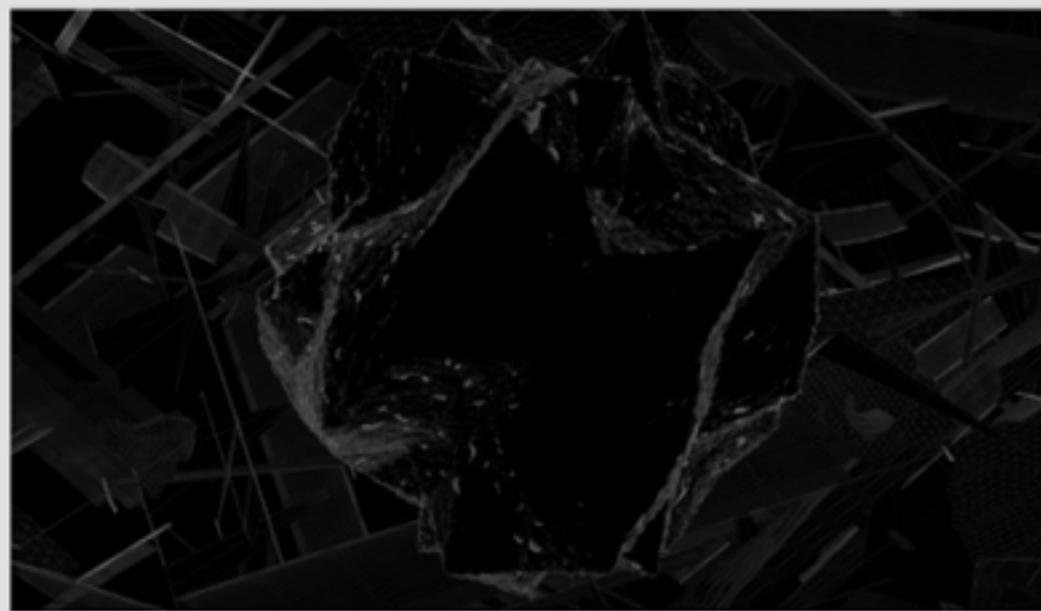
“Hacking meets clubbing...”

<https://en.wikipedia.org/wiki/Algorave>



HOME / EVENTS / ARTISTS / FORUM / INFO /

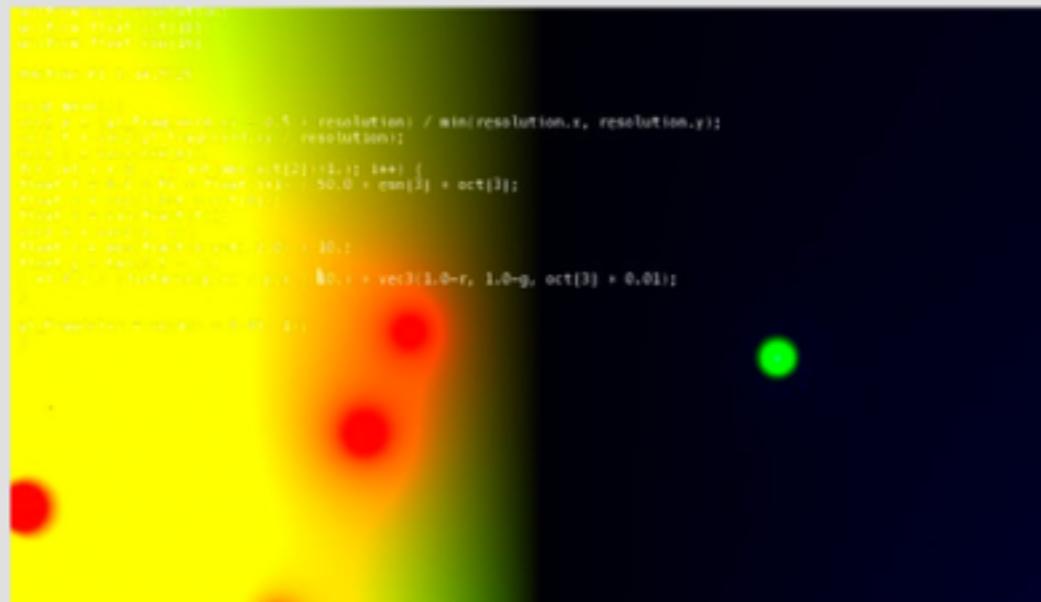
# GALLERY



## EXPLORING THE SUBTERRANEAN

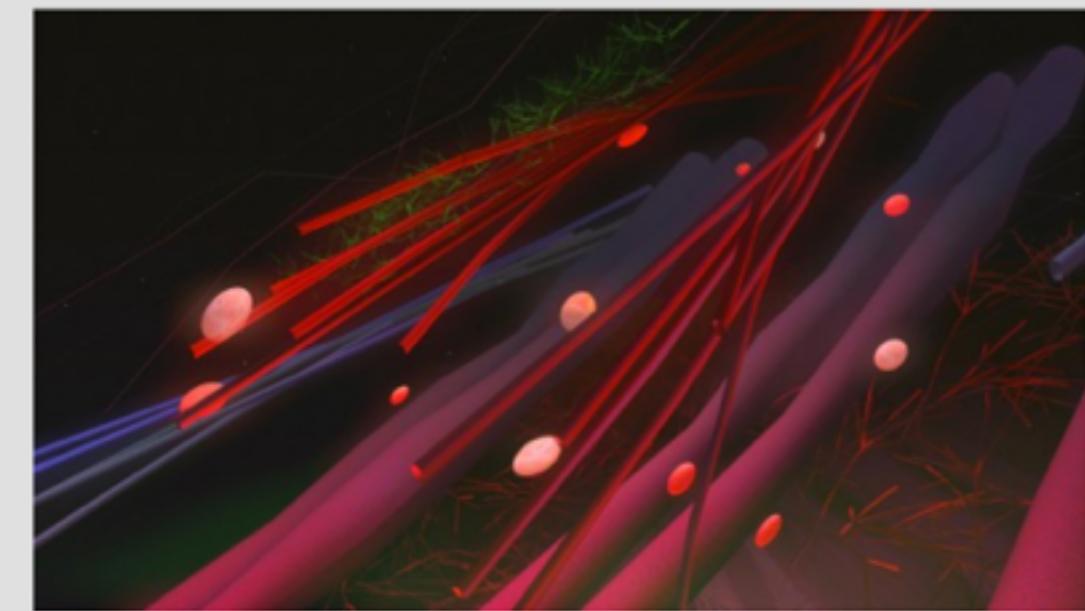
Studio Naam

The design of the visual identity of Coded Matter(s) 8 and the FIBER Festival was created by our amazing partners ...



## ALGORAVE

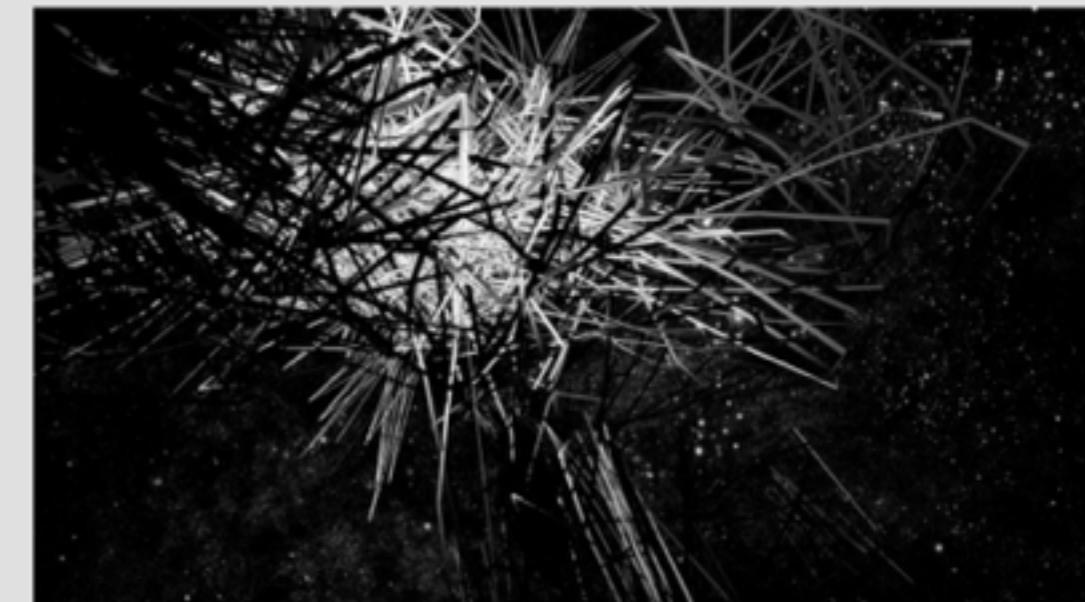
Chris Kiefer



## EXTENDED SENSES

Josué Ibáñez

For the seventh edition of Coded Matter(s) we collaborated with Mexican interaction designer Josué Ibáñez. We're honoured to present the ...



## CODING THE CLUB

Simon Geilfus

# DAY 1 HOMEWORK

- Listen to more of the game music midi.
- What are your favourite melodic sequence, rhythm and tempo?
- Transcribe them onto Sonic-PI then upload onto Github.
  - <https://github.com/junior-devleague/GameProductionProgram>
  - <http://junior-devleague.github.io/GameProductionProgram/>
- Look at your peers' codes.
- Explain to your parent(s) how music can be coded.
  - Code a tune for your parent.

# NEXT WEEK

- Review //Game Music
- SonicPI Programming Mechanics
- Phaser Game Mechanics
- Meet with your Game Developer
- Bring your instrument
- Notebook



I had so much fun instructing and sharing with you.

See you next week!