Melrōse

program and play music

ernest micklei, Golang Meetup, Utrecht, September 2021

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programming melodies

What is it?

A language to create music, as programs

A runtime environment to play programs

```
bpm(120)
s1 = sequence('.c5 8b_ a_ e_ c-- e_-- a_-- =')
s2 = sequence('.d_5 8c5 b_ f d_-- f-- b_-- =')
s3 = sequence('.b_ 8a_ g e_ b_3-- e_-- g-- =')
line = stretch(0.5,join(s1,s1,s2,s2,s3,s3,s1,s1))
loop(line)
```

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Language bits

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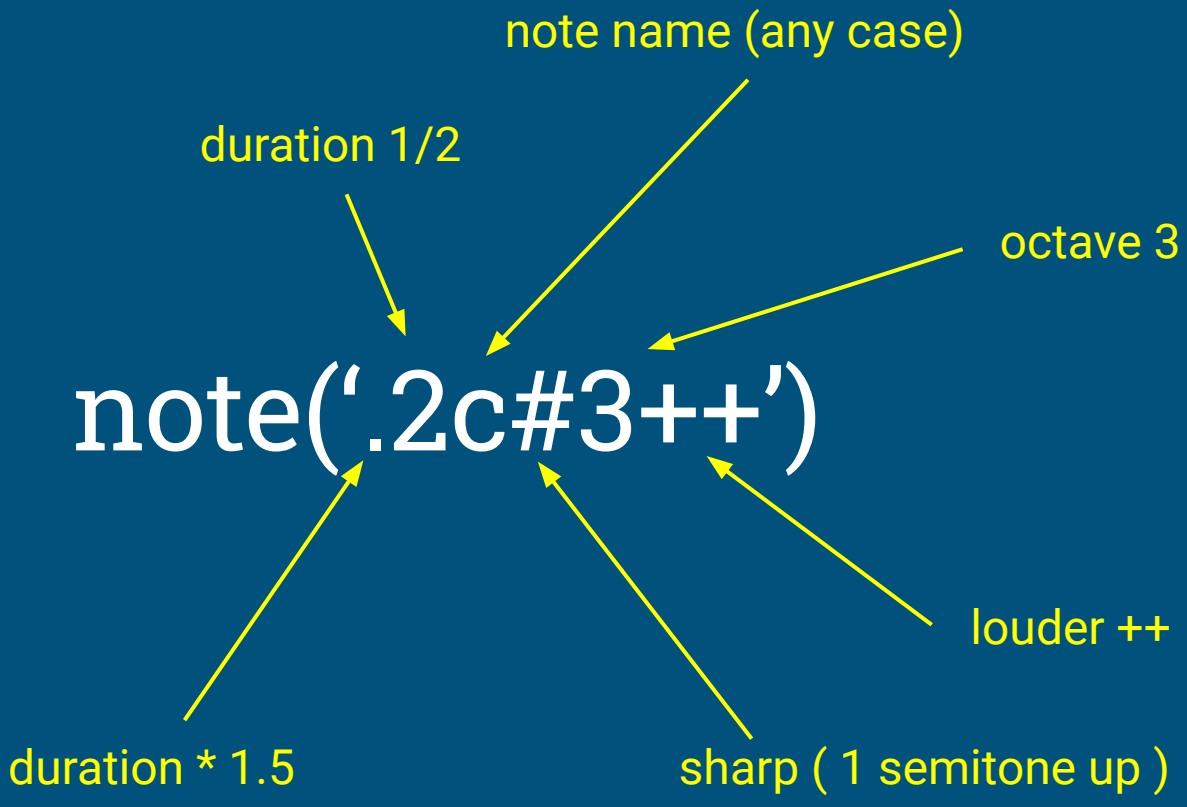

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Note examples

note(‘e’)

note(‘=’) // quarter rest

note(‘16b_5--’) // 16th duration, b flat, octave 5, softer

midi(8,36,72) // ⅛ duration, MIDI nr 36, velocity 72

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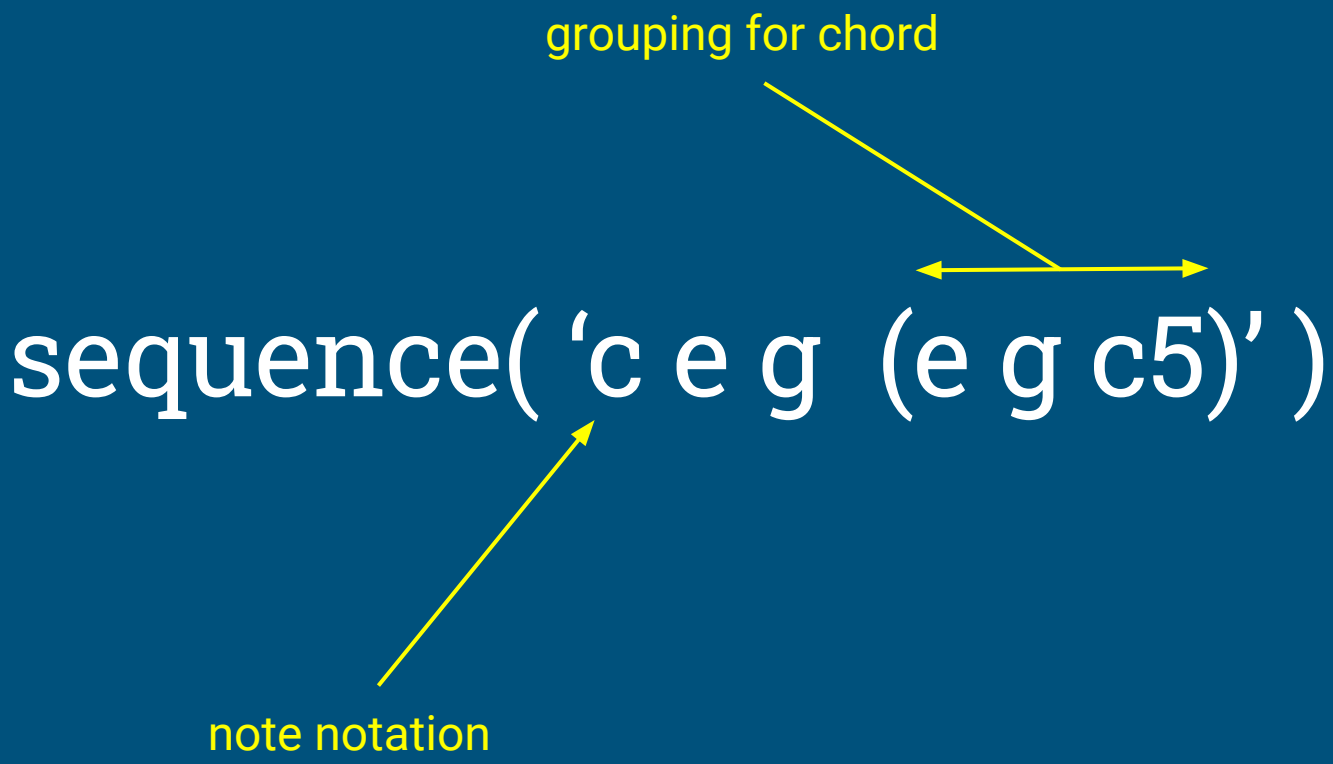

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Sequence example: Frère Jacques

```
f1 = sequence('C D E C')

f2 = sequence('E F 2G')

f3 = sequence('8G 8A 8G 8F E C')

f4 = sequence('2C 2G3 2C 2=')


v1 = join(f1,f1, f2,f2, f3,f3, f4)
```

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Other music primitives

chord(‘C#/m’) // c4 sharp minor

scale(3, '8G#2')

progression('c#3','I VI II V')

chordsequence('A3 B3 C#/m')

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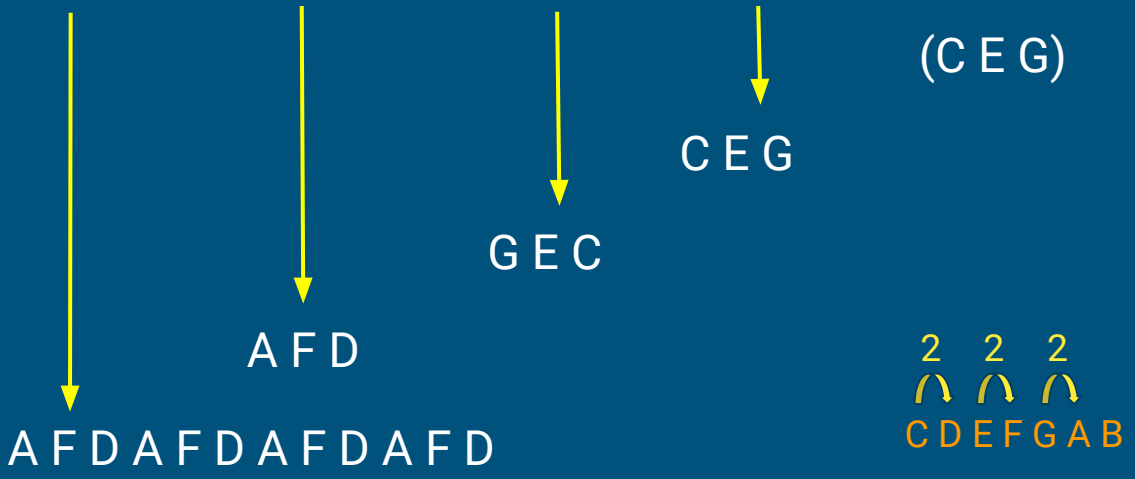
Composition

repeat(4, transpose(2, reverse(ungroup(chord('C'))))



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Composition 2

```
y = sequence('f#2 c#3 f#3 a3 c# f# = ')
p = resequence('3 4 2 5 1 6 2 5', y)
f = fraction(8, p)
jf = join(repeat(2,f),
        repeat(2,pitch(1,f)),
        repeat(2,pitch(-2,f)),
        repeat(2,pitch(3,f)))
```

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More composition

at, duration, dynamic, dynamicmap, export, fraction, fractionmap, group, if, import, index, interval, iterator, join, joinmap, listen, merge, midi_send, next, notemap

octave, octavemap, onbar, pitch, pitchmap, print, random, repeat, replace, resequence, reverse, stretch, track, transpose (pitch), transposemap (pitchmap), undynamic, ungroup, value, velocitymap

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Play bits

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No sound processing

The runtime produces MIDI which can be send to 16 channels, per device.

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Visual Studio Code

```
bpm(120)
mel = fraction(1,join(chordsequence('c/m f3/m/2 b_3 e_3/2 a_3
lp_mel = loop(mel)

bass = octave(-1,fraction(1,sequence('c5 f b_ e_ a_ d g c')))
lp_bass = loop(bass)
```

melrōse

Digital Audio Workstation

Hardware Synthesizer

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Go bits

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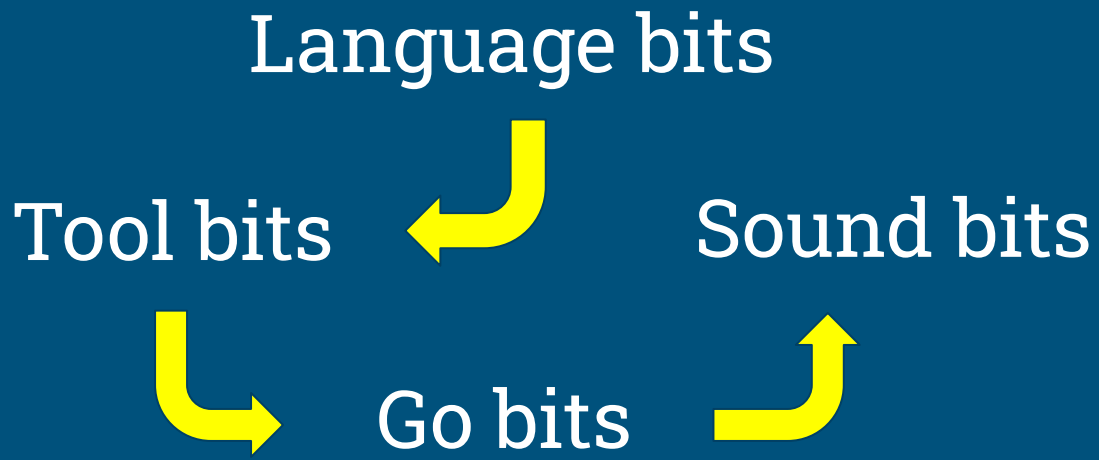

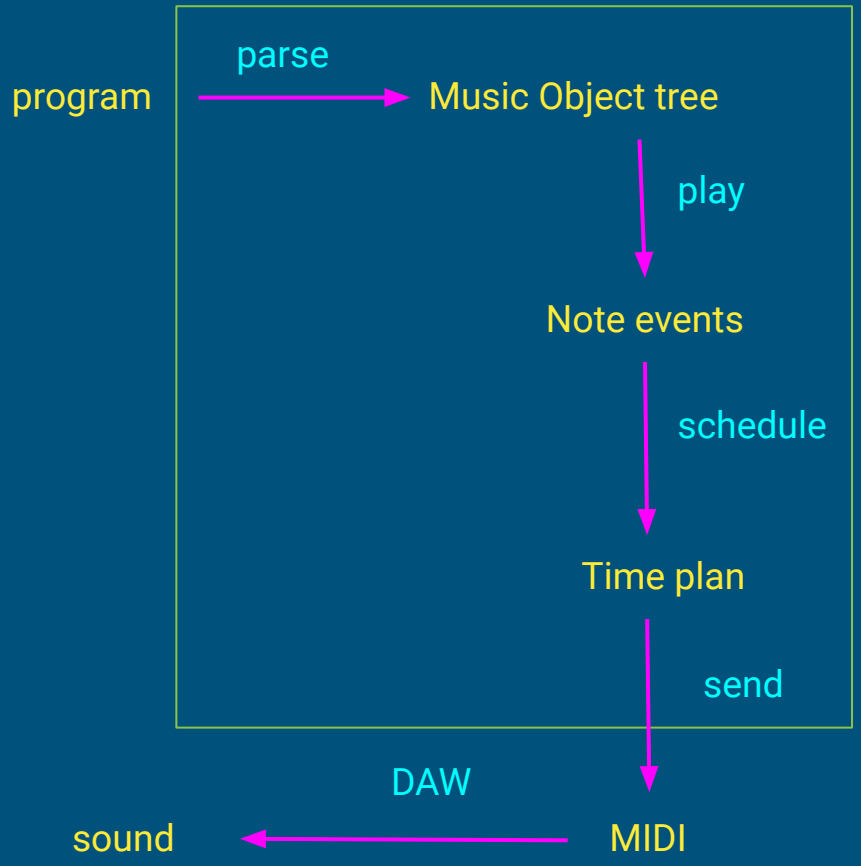

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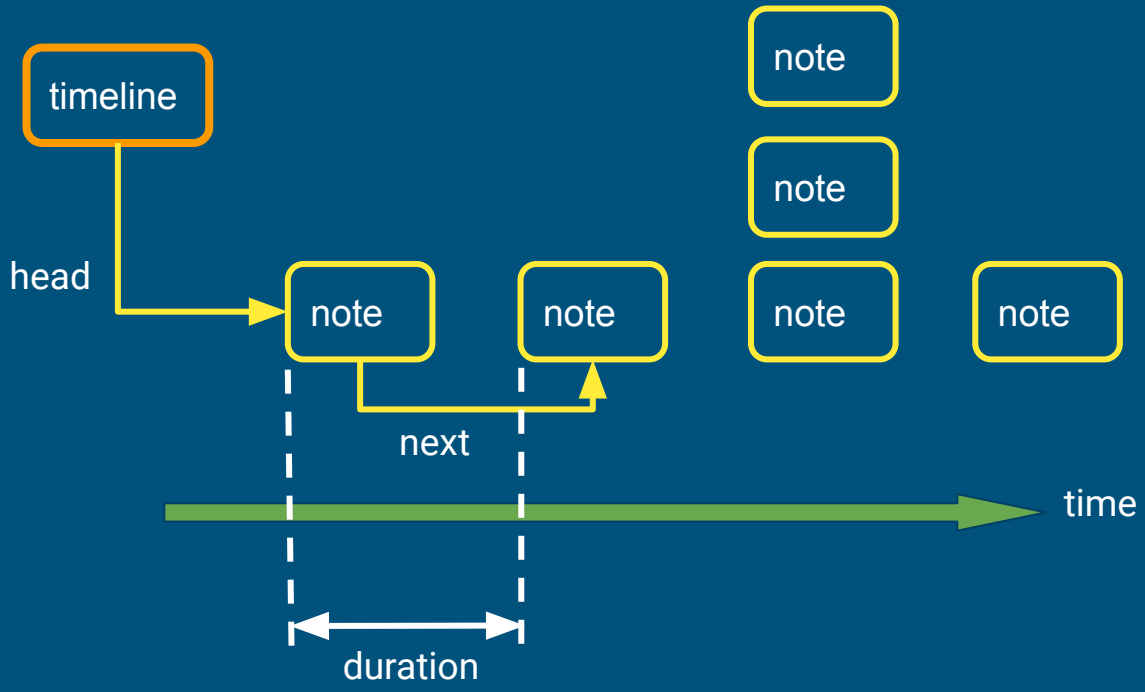
timeline
head
note
note
note
note
note
note
next
time
duration

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Thanks

Open Source. MIT License.

https://github.com/emicklei/melrose

https://melrōse.org

https://play.melrōse.org

Music contributions wanted