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Terry Riley's "In C" (in Perl)

2018-01-28 BY GENE



The composer [Terry Riley](#) was experimenting with generative forms of music and came up with an interesting technique: Give fragments of musical phrases (motifs) to musicians to play in order, but looping however many times they desire. This results in a sort of “free-form round” – like “Row Your Boat”, only schizophrenic with phrases appearing and reappearing

at varying offsets.

His composition is called, “In C.” Here is a great [write-up on it](#), including the motifs he uses. And here is his [original recording](#).

Naturally, my mind immediately said, “Program!” and I set to work...

[The code](#) took a bit of head scratching but is very simple in the end.

Basically, it proceeds over a long set of phrases (53 to be exact) that each have a built-in loop-randomizer (repeating 1-4 times). The number of voices can be up to 16 (limited by MIDI channels), and each independently plays the list of

phrases.

Here is the meat of the code:

```
#!/usr/bin/env perl
use strict;
use warnings;

##
# This is a Perl orchestration of Terry Riley's venerable composition, "In
##

use MIDIUtil;

my @patches = @ARGV ? @ARGV : qw( 0 8 42 69 );
die 'No more than 16 patches allowed'
    if @patches > 16;

my $channel = 0;

my $score = MIDIUtil::setup_midi( bpm => 120 );

my @phrases;
push @phrases, \&loop
    for 1 .. @patches;

$score->synch(@phrases);

$score->write_score("$0.mid");

sub rand4 {
    return 1 + int rand 4;
}

sub loop {
    MIDIUtil::set_chan_patch( $score, $channel++, shift(@patches) );

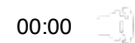
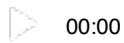
    # 1
    for ( 1 .. rand4() ) {
        $score->n( 'qn', 'E4' ) for 1 .. 3;
    }
}
```

```
# 2
for ( 1 .. rand4() ) {
    $score->n( 'en', 'E4' );
    $score->n( 'en', 'F4' );
    $score->n( 'qn', 'E4' );
}

# ... to 53 phrases
```

([MIDIUtil](#) is a little module of mine that performs basic setup. Check it out at github.)

This results in a similar but dynamic computer composition. Here is the MIDI file, [in-c](#), with 4 voices. And here it is re-orchestrated with my [DAW](#):



([On YouTube](#))

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Here is the followup version of the program I made, that randomizes and limits the number of motifs used: [in-c-randomized](#).

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Epistemologist-at-large