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Bach Note Transition Frequency “Music”

2017-11-24 BY GENE

What are the note frequencies of music by Bach? That is, “How often does an F follow a C?” etc. What does it sound like if you “reconstruct” playable music from these frequencies?

Let’s see!

First, we find some Bach MIDI. I chose [Jesu Joy of Mans Desiring](#).

Next, we feed that to my [note-transition](#) program:

```
> perl note-transition /Users/gene/Downloads/bach_jesu_joy_with_piano.mid
```

This produces a file called “note-transition.dat” that is a collection of the MIDI note numbers and their proportional frequencies of one track. Here is part of Jesu:

```
67 => {  
    69 => 0.4,  
    71 => 0.6  
},
```

```

69 => {
    67 => 0.230769230769231,
    69 => 0.153846153846154,
    72 => 0.0769230769230769,
    71 => 0.538461538461538
},
71 => {
    69 => 0.476190476190476,
    72 => 0.523809523809524
},
72 => {
    71 => 0.444444444444444,
    74 => 0.444444444444444,
    72 => 0.111111111111111
},
74 => {
    72 => 0.307692307692308,
    74 => 0.230769230769231,
    71 => 0.307692307692308,
    76 => 0.153846153846154
},
76 => {
    77 => 0.333333333333333,
    76 => 0.333333333333333,
    74 => 0.333333333333333
},
77 => {
    74 => 1
}

```


Next we feed that result file to my [stat-walk](#) program, asking for 128 notes:


```
> perl stat-walk note-transition.dat 128
```

This program is very simple. Each note gets a quarter note value and there are no dynamics like velocity changes. Anyway, the above command produces a MIDI file called “[stat-walk.mid](#)” which you can hear with a handy program like timidity:


```
> timidity stat-walk.mid
```


But I took the liberty of enhancing it a bit with my [DAW](#) and came up with this:

 00:00


00:00 


Update: I made copies of the programs that honor multiple tracks. The output is spartan – a simultaneous quarter note for each track of notes. YMMV: [note-transition-sync](#) and [stat-walk-sync](#). Here is our Bach:

 00:00

00:00 

And here is a very different Beethoven Moonlight Sonata:

 00:00

00:00 

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