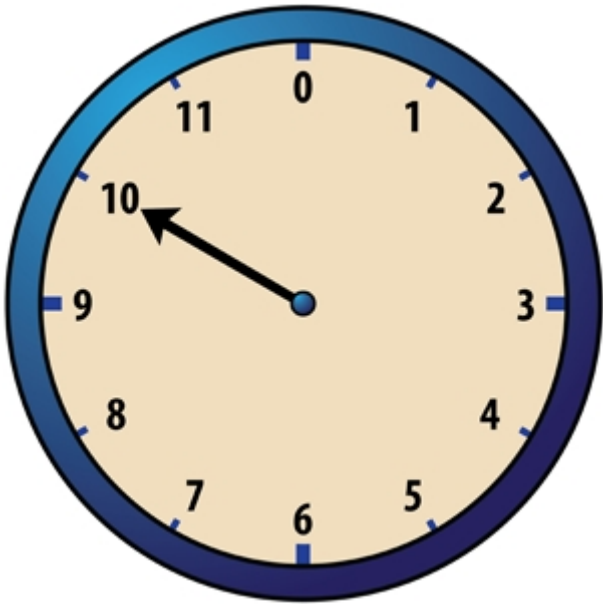
HOW TO GENERATE MELODY NOTES FROM ANY SET OF NUMBERS

by Ian Myers © 2012

Here is a method for turning any set of numbers into musical pitches. The following table associates a number to each note of a chromatic scale.

C	C#/Db	D	D#/Eb	E	F	F#/Gb	G	G#/Ab	A	A#/Bb	B
0	1	2	3	4	5	6	7	8	9	10	11

Any sequence of numbers can be converted to a number between zero and eleven simply by converting the numbers using clock arithmetic. In particular clock arithmetic to base (or modulo 12). The way this works



is to imagine a clock face like the one in the above diagram. Now taking the number 16 as example we count around the clock starting at zero and keep going around until we have counted sixteen. The number you reach on the clock face is then 16_{mod12}. In this case $16_{mod12} = 4$. Whilst the clock face is useful in seeing what is going on with clock arithmetic it would not be useful for calculating large numbers.

The way to calculate a given number in modulo twelve is to divide that number by twelve and to then write down the remainder. For example divided by 12 is 453 remainder 1. Hence $5437_{mod12} = 1$ corresponding to the pitch C#/Db in the above table. In this way a sequence of random numbers could become a source of musical melody.

We could restrict our manifold to fewer notes and still use clock arithmetic to produce a melody from random numbers. For example here is a table for a five-unit scale.

C	D	F	G	A
0	1	2	3	4

In this case we would use modulo 5 arithmetic to find our melody notes from any given number series. For example the number 49. 49 divided by 5 goes 9 times remainder 4 hence $49_{mod5} = 4$ which is the pitch A.

This method combined with the method for generating music from any given text gives a great way of generating random sequences.

I know its easier these days to generate random sequences within the Digital Audio Workstation of your choice. The method outlined here is more in tune with the Schillinger method long before DAWs were available.