Math109/Music109M Project

The project should consist of original musical work consisting of a single composition or several shorter pieces. The composition(s) should demonstrate or utilize concepts learned in this course. For example the composition might involve several of these features:

1. Melodic figures which represent transformations such as translation, transposition, or retrogression.

2. Repeating and contrasting sections which result in a satisfying symmetry in the overall form.

3. Tuplets, syncopations, or polyrhythms used creatively to form interesting rhythmic patterns.

4. Melodic or rhythmic figures illustrating \( m \) against \( n \) patterns, or in some other way using ideas from modular arithmetic.

5. Harmonizations (with analysis) using the harmonies discussed in the course.

6. Utilization of non-standard \( n \)-chromatic scale.

7. Utilization 12-tone row techniques, or \( n \)-tone rows for some positive integer \( n \). (Caution: Do not rely entirely on this feature.)

8. Utilization of non-standard scales such as the just intonation scale, the mean-tone scale, or the Pythagorean scale, exploiting the strength or exposing the weakness of the scale. Possible comparison of different scales using the same composition.

9. Real-time microtuning of harmony to create justly tuned chords, possibly involving classical harmony, or using \( p \)-limit tuning for some prime number \( p \) at least 7.

10. The use of sounds designed on the Kurzweil, using its supplied functions, filters, samples, and wave generators, perhaps having parameters that vary in real-time.

The project should be turned in as an mp3 sound file and submitted electronically with accompanying score(s) and documentation. The documentation should contain an essay explaining the features incorporated in the composition(s). Name your documents by your first initial and last name, as in dwright, followed by a suffix. The project is due on Monday, May 1st (the Monday after last day of class). Projects turned in late will receive half credit. Early projects are welcome.

REMEMBER THAT THE PROJECT COUNTS FOR ONE FOURTH OF THE FINAL GRADE.