

Brandeis Laptop In C

These are the notes for a performance of Terry Riley's *_In_C_* to take place at Brandeis University as a part of the 2018 Festival of the Creative Arts. You can read more about the background of the composition (or the [composer](#)) using [wikipedia](#) or reading Taro Parviainen's enlightening [article](#) on some of the historical cultural and conceptual issues surrounding it.

The performance is scheduled for *Sunday 22 April 2018 12 noon* in the Rose Art Museum on the Brandeis Campus. There will be one or more rehearsals before that I will attempt to schedule beforehand.

The original idea was to use laptops to play a realization of the score, maybe along with a few other more quiet instruments like melodicas or recorders or maybe even an accordion or two. As the performance approaches, it seems more and more likely that there will be just laptops.

Tech

The laptops will use a modified version of the javascript [implementation](#) written by Tero Parviainen to generate audio. I have forked his code in order to make a few modifications for our performing needs.

First you will need to select a laptop to use for the performance. There will be electricity there, so battery power should not be a limitation. I would suggest you think about some auxillary speakers, but the plain laptop speakers have a certain charm of their own.

Then you will need to install some software.

- application code from my github [fork](#)
- [node.js](#) javascript environment
- [npm](#) javascript package manger (prolly comes with node.js)
- [yarn](#) dependency manager

I have installed the set successfully on linux, freebsd, and macOS. As with any software, the way you get it on your machine is up to you, but using pre-built packages is most likely the quickest and easiest way to get something running.

The final technical tweak before generating the audio is to set the ensemble that will be used for your laptop. There are 5 different options available, with more possible. Here are the steps to set it up.

1. cd to in-c/src from the repository cloned from github
2. select one of the pre-existing ensembles (ensemble.json.0 through ensemble.json.4)
3. create a soft link from the selected ensemble file to the name "ensemble.json" (nothing trailing)

Now you are ready to run the software. You can read the in-c/README.md file for more information on running it, but more simply, you'll need to run the following commands.

1. yarn
2. npm start

The terminal window will change and eventually you should see the screen split into several smaller text based boxes. The first time it runs, you will see various compilations and other software processes happening. After some time has passed, you will (hopefully) see the Status window in the upper right hand corner display "Success."

If not, make sure you have followed the steps outlined above. If you are still stumped, feel free to contact me.

Once the application is running, you should be able to bring up the (modern) web browser of your choice, and direct it to this URL:

- <http://localhost:8080/>

Once the page loads, you should see the opening screen of the application with a big *PLAY* button. I'm guessing you know what to do next ...

To close the application, bring the terminal window running the application to the forefront and enter a Control-C character to shut it down.

Score

The score is an appendix to this note. I would like all performers to have read it (both music and words) before we perform. Here are some of the instructions in the score that I think are worth remembering:

- players should listen to each other
- volume should vary throughout
- spend about a minute on each pattern
- pay attention to the ending procedures

The application is set to run at an eighth note equals 120 beats per minute. This means that you can use a plain old clock (on your computer or on your cell phone) to synchronize, as each quarter note equals 1 second.

For the performance, we are scheduled to start at noon. My plan is to use the minute between 12:00PM and 12:01PM to synchronize the eighth note pulse among

our computers. This is mostly a manner of pressing the *PLAY* button at the correct time. We will rehearse this.

Then, each of the 53 numbered sections will be sounded around and within the appropriate minute of time. For example, section 17 will be (mostly) played between 12:17PM and 12:18PM. As is mentioned in the score, the parts are not supposed to be rigorously synchronized. In fact, the serendipitous combination of parts unexpectedly is one of the primary points of musical interest.

The timing plan, then, allows for pretty easy synchronizations between the players as well as making it easy to "get back on track" if necessary by simply looking at a clock. The one part of this that players will need to manage on their own, is which of the 53 parts a particular voice is on. There is a small circle display that gets updated, but it is probably not possible to figure out if the part being played is number 22 or 23 by sight alone. I'd suggest a file or piece of paper to track it- but that's really up to each performer. Anyway, the important thing is to be able to manage this during the performance in a way that makes sense to you.

Other

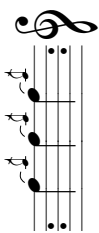
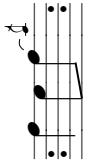



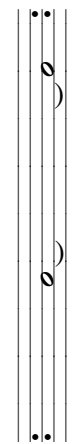

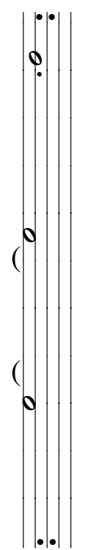
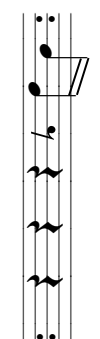
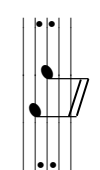
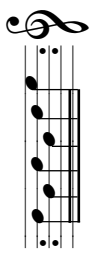
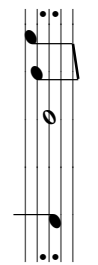
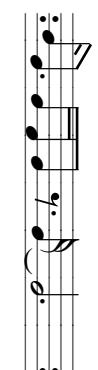
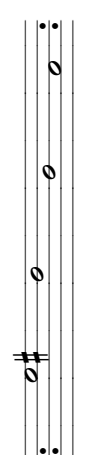
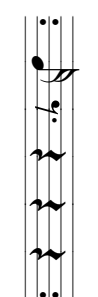

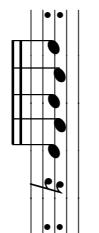
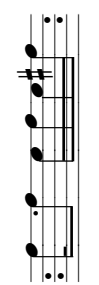

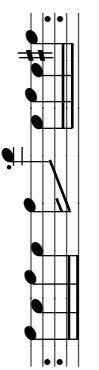
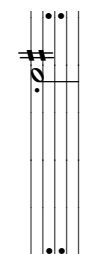
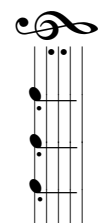
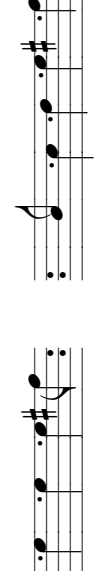
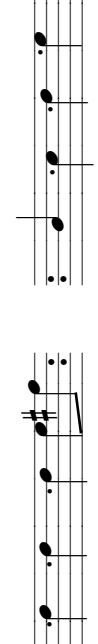
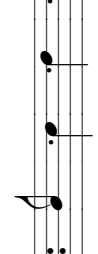

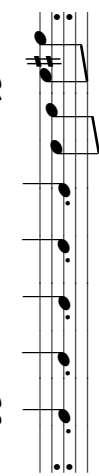

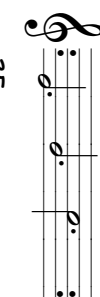
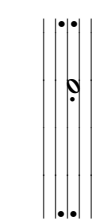



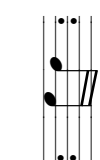
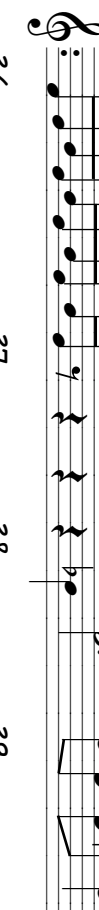
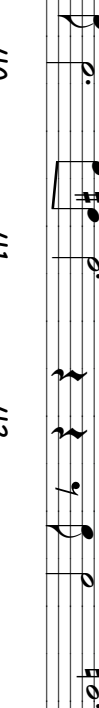





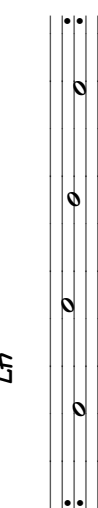





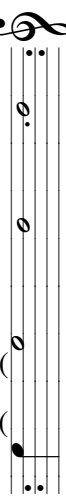

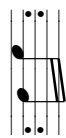



I will try to make a recording but there is no guarantee that it will be anything near a pristine recording environment. If the recording is successful, I would be happy to make it available to any who might be interested.

The performance will offer many opportunities to experience various interactions between musicians computers and programming of many types. I hope it will be spectacular!

Please feel free to contact me if needed:

- email: jsaylor@brandeis.edu
- phone: 781.736.4519

in C.

1.  2.  3.  4.  5.  6.  7.  8.  9.  10.  11.  12.  13.  14.  15.  16.  17.  18.  19.  20.  21.  22.  23.  24.  25.  26.  27.  28.  29.  30.  31.  32.  33.  34.  35.  36.  37.  38.  39.  40.  41.  42.  43.  44.  45.  46.  47.  48.  49.  50.  51.  52.  53. 

In C

Performing Directions

All performers play from the same page of 53 melodic patterns played in sequence.

Any number of any kind of instruments can play. A group of about 35 is desired if possible but smaller or larger groups will work. If vocalist(s) join in they can use any vowel and consonant sounds they like.

Patterns are to be played consecutively with each performer having the freedom to determine how many times he or she will repeat each pattern before moving on to the next. There is no fixed rule as to the number of repetitions a pattern may have, however, since performances normally average between 45 minutes and an hour and a half, it can be assumed that one would repeat each pattern from somewhere between 45 seconds and a minute and a half or longer.

It is very important that performers listen very carefully to one another and this means occasionally to drop out and listen. As an ensemble, it is very desirable to play very softly as well as very loudly and to try to diminuendo and crescendo together.

Each pattern can be played in unison or canonically in any alignment with itself or with its neighboring patterns. One of the joys of IN C is the interaction of the players in polyrhythmic combinations that spontaneously arise between patterns. Some quite fantastic shapes will arise and disintegrate as the group moves through the piece when it is properly played.

It is important not to hurry from pattern to pattern but to stay on a pattern long enough to interlock with other patterns being played. As the performance progresses, performers should stay within 2 or 3 patterns of each other. It is important not to race too far ahead or to lag too far behind.

The ensemble can be aided by the means of an eighth note pulse played on the high c's of the piano or on a mallet instrument. It is also possible to use improvised percussion in strict rhythm (drum set, cymbals, bells, etc.), if it is carefully done and doesn't overpower the ensemble. All performers must play strictly in rhythm and it is essential that everyone play each pattern carefully. It is advised to rehearse patterns in unison before attempting to play the piece, to determine that everyone is playing correctly.

The tempo is left to the discretion of the performers, obviously not too slow, but not faster than performers can comfortably play.

It is important to think of patterns periodically so that when you are resting you are conscious of the larger periodic composite accents that are sounding, and when you re-enter you are aware of what effect your entrance will have on the music's flow.

The group should aim to merge into a unison at least once or twice during the performance. At the same time, if the players seem to be consistently too much in the same alignment of a pattern, they should try shifting their alignment by an eighth note or quarter note with what's going on in the rest of the ensemble.

It is OK to transpose patterns by an octave, especially to transpose up. Transposing down by octaves works best on the patterns containing notes of long durations. Augmentation of rhythmic values can also be effective.

If for some reason a pattern can't be played, the performer should omit it and go on.

Instruments can be amplified if desired. Electronic keyboards are welcome also.

IN C is ended in this way: when each performer arrives at figure #53, he or she stays on it until the entire ensemble has arrived there. The group then makes a large crescendo and diminuendo a few times and each player drops out as he or she wishes.

TERRY RILEY