

Working with Open Source applications for electronic compositions:
audacity, pure data, csound

Summary / Weblinks

1. What does Open Source mean?

- history and GNU project. the Free Software Foundation
 - http://en.wikipedia.org/wiki/History_of_free_software
 - <http://www.fsf.org/>
- Open Source: open code, free to use and to develop for anyone
 - http://en.wikipedia.org/wiki/Open_Source
 - <http://www.opensource.org/>
- examples for Open Source software (main source: <http://sourceforge.net>):
 - Linux (various systems, see www.linux.org)
 - Mozilla Firefox, Open Office, LaTeX, PDFCreator
 - SuperCollider, Chuck, Ardour as other audio applications
- last but not least: the mailing list!

2. Audacity as a free audio editor

- <http://audacity.sourceforge.net/> (download beta version is recommended)
- example:
 - recording a live input
 - cutting, fading, mixing
 - some effects: reverse, time stretching, pitch shifting, filtering, reverb
 - exporting the result as a new sound file

3. PD as a graphical programming environment

- <http://puredata.info/> gives a good overview (download, documentation, lists)
- some fundamentals:
 - Audio and MIDI settings, testing
 - different windows, changing the mode (edit <-> run) in the patcher window
 - turning audio on
 - finding any help in Help -> Browser
- example: FM and MIDI (in: [audio.examples/A.09.frequency.mod.pd](#))
 - understanding FM
 - correcting the "index" parameter
 - introducing a "ratio" parameter
 - connecting MIDI (objects: ctlin, notein)

4. Csound as an audio programming language

- there is not such a good central **website** as in Audacity or pd:
 - <http://csound.sourceforge.net> gives a quite well download overview
 - <http://sourceforge.net/projects/csound> has the definitive downloads
 - <http://sourceforge.net/projects/qutecsound> is needed to download QuteCsound
 - <http://www.csounds.com> has some good hints, but some outdated
- **fundamental concept** of Csound: the "orchestra" (.orc) and the "score" (.sco)
 - defining a basic instrument and
 - running it on the commandline with this syntax:
 csound [options] orcfile scofile
 - changing some options (especially -o dac)
- usually you don't work in this way, but with a "frontend": **QuteCsound** is out now:
 - see the integrated .csd file format:

```
<CsoundSynthesizer>
<CsOptions>
    PUTTING YOUR OPTIONS HERE
</CsOptions>
<CsInstruments>
    PUTTING YOUR ORCHESTRA HERE
</CsInstruments>
<CsScore>
    PUTTING YOUR SCORE HERE
</CsScore>
</CsoundSynthesizer>
```

- see the Configure dialog
 - see the integrated help
 - repeating the example above, but now all in QuteCsound
- **Example: FM in (Qute)Csound**
 - transporting our pd example in Csound
 - creating a GUI with widgets
 - including MIDI
 - probably going "back" (or forth) to the non-widget level