Csound5: The Design, The Outcome, The Experience

Electric Sounds ’05

John ffitch
Introduction

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A large (?) and growing, diverse, user community, supported by a small, changing group of programmers. Note that the developers are composers, performers and musicians, are want to use the system themselves.
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- So, assuming creating music is research, download sites were in effect a monopoly, and actually granted to just three of us. CDP asked early; Rick Boulanger and myself were the others.

- Conflicts with other innovations, and isolated the Csound software from other developments. We were getting left behind.
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end
Towards The Big Freeze

Csound was written in K&R C, and converted to ANSI in the 1990s. The code style is 1970’s, with *ad hoc* parsing processes and few comments. Eventually MIT’s lawyers agreed to a licence change to LGPL, and all authors agreed to the new licence.
Architecture of Csound4

- Orchestra Reader
- Musmon
- Opcodes
The Big Freeze

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- A small plugin system was made available for Csound for users to create new operations if they must.

end
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- Software bus for communication to interfaces.
- Cross platform and ALL OLD PIECES MUST RUN UNCHANGED
Implementation
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  4. Graphics (FLTK)
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- A Static and Global hunt ensued, but most now encapsulated in a single struct that maintains the instances’ state.
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• And still no parser.....
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Extended to allow plugin-based utilities
Internal Developments

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• Better error reporting and recovery

• Re-entrance and reuse considered

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- PortMIDI is OK, but does not do as much as hoped.
Experience II

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- We have a JACK interface, and this is possibly an important way to develop.
- I am considering how to use additional features, such as libaubio which is good at beat extraction.

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But I cannot! There are a small number of things I would like to address before that can be the case.
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- We need simple binary installation system(s).
- We need to decide on WHAT to distribute (how many utilities, which language wrappers, which manual(s), which libraries)
- What mechanism for distribution should we use (zip, tar, rpm, custom installer, apt,...)
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- The FrontEnd/BackEnd separation is still not as clean as I would like.
Conclusions

This was an exercise in evolution not revolution. We are close to release, and already have users. We must have a proper binary release of a simple to install system this year.

I also wish to acknowledge the significant efforts of the community in saying what they want; and in particular Michael Gogins for the API, and Windows development. The influence of Richard Boulanger is always with me to encourage when things go badly.

I would also like to acknowledge the parts played by Victor Lazzarini, and of Istvan Varga, who has done so much in the last year, especially while I was disabled with RSI and teaching.