A JAVA PRODUCTION SYSTEM FOR MUSICALLY PLEASING SONIC EVENTS

Marc Conrad, Tim French, Marcia Gibson

Marc.Conrad@luton.ac.uk, Tim.French@luton.ac.uk, Marcia.Gibson@luton.ac.uk

The goal:

Construct an alphabet of sonic events with the following constraints:

- Distinguishable by the musically untrained ear.
- Recognisable through physical characteristics.
- Deterministically generated from seed values.
- Virtually infinite in number.

These constraints are implied by the envisaged application area:

Security and Authentication

Why?

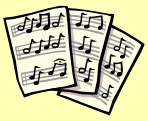
Recognition-based authentication schemes are a relatively new concept resulting from further consideration of the inherent drawbacks of existing security technologies. The media to be recognised is any that can be perceived and differentiated by the inexperienced user. Current research focuses on visual media, namely:

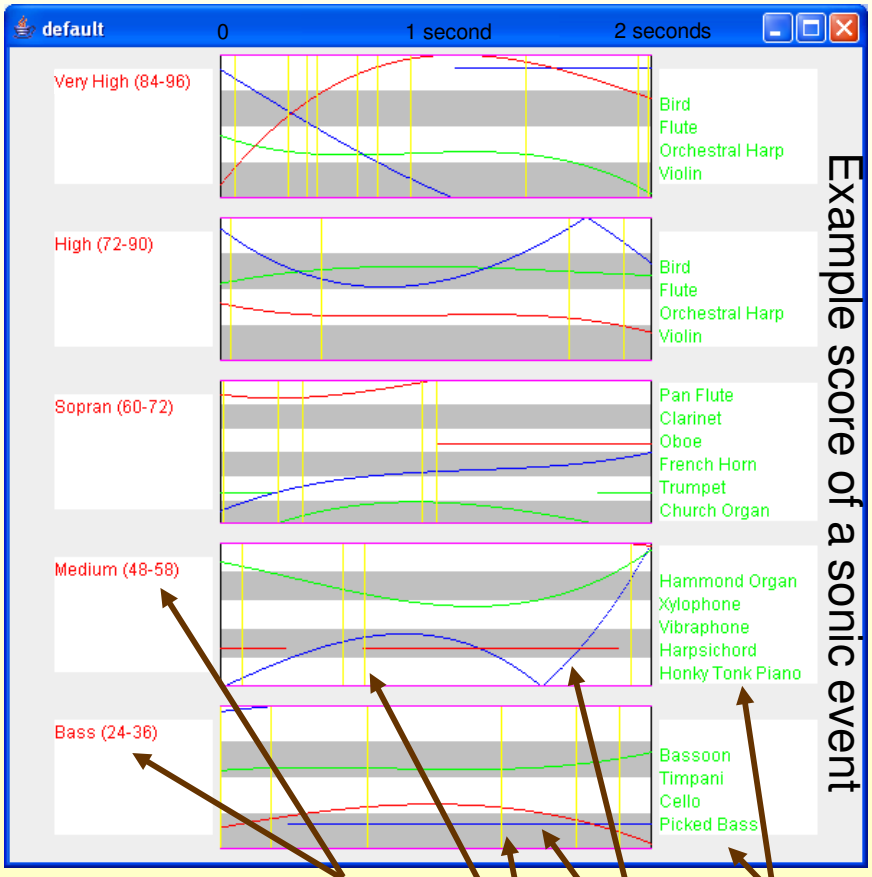
Image-based passwords do however have inherent drawbacks of their own. Think about accessibility to visually impaired or situations where it is not possible to use a screen such as when authentication is required over a telephone. For these situations we need a

better alternative, namely:

Sound

Or, to be more precise:

Sonic events 



Each voice is fully determined by three mathematical functions:

- ✓Pitch
- ✓Velocity
- ✓Timbre

Red function: Midi pitch levels (middle C = 60)

Every yellow line fires a midi event

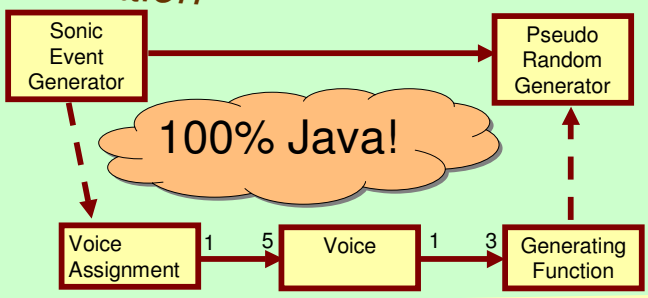
Blue function: Midi velocity

Green function: Midi instruments

Download sonic events on http://perisic.com/sonicevents

Implementation

The application area of our sonic event production system is authentication. It does not exist as an isolated "music producing hard- or software" but is likely to be embedded as part of a wider system that meets industrial standards Hence we use a modular, object-oriented code design that allows direct interaction with any other Java code.



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http://perisic.com/sonicevents

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