Providing Music Notation Services over Internet

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State of the Art

- Notation editors (GUI)

- Score sharing software

- JIT compilation services

Problem

- Lack of low-latency alternative to create musical notation.

- Lack of an API that allows for web application building.

Solution

- Provide a service that quickly compiles music notation representations into several encoded forms (PNG, SVG, DSL).

- Provide a web API via a server-client architecture.

GUIDO Engine

- Compiles Guido Music Notation (GMN) markup language.

- Interprets this into an abstract representation.

- Translates abstract representation into a graphical representation.

- Draws representation onto a device.

REST architectural style

- client-server model

- stateless (almost…)

- client-side caching

- uniform interface (GET, POST, etc.)

- layering of multiple servers

- code-on-demand

REST design practices

- Transferring metadata along with data

- Human readable, hierarchical URIs

- URI points to idea, not necessarily to permanent object

GUIDO HTTPD server

- Uses GNU libmicrohttpd to handle POST, GET, and DELETE requests (uniform interface)

- *almost* stateless - use of SHA1 key as resource identifiers prevent too-long URIs

- example

Guido Web Api

- Function as URI segment

- Arguments to functions and options as key-value pairs

- Return values as standard MIME images or JSON

guidoeditor.grame.fr

- Example uses server-side layout calculations and client side drawing to avoid lengthy transfers.

- Also possible to do server-side drawing.

- Potential for creating fast embedded scores as well as simple editing applications.

Other GUIDO projects

- Mozilla license

- iOS and Android applications

- inSCORE

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GUIDO <3 Linux!

- GUIDO is currently not included in major Linux distributions.

- GUIDO has the potential to be the open-source alternative for fast music representation and could be useful for many of the applications used today.

sourceforge.net/p/guidolib
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