

S C H E M E

Scheme <<http://schemers.org/>> is a dialect of Lisp

- Write once, run everywhere, without being Java
- Portable Assembler, without being C
- Extensible Markup Language, without being XML

Featured topics

- **Embeddable Scheme Virtual Machine**
The Scheme language itself (R5RS) is the VM bytecode. When embedded in a host platform, the host data become Scheme data, and vice versa.
- **Converting Domain Specific Languages to Scheme**
One can apply AOP, optimization and transformation techniques to the automatically generated Scheme code.
- **Compiling Scheme**
Targets are executables or programming languages or platforms.

Projects

- **Generative XML**
Reusing the same XML processing code in different environments.
- **sT_EXme**
Converting T_EX and METAFONT source code to Scheme.
- **XSieve**
Interweaving of XSLT and Scheme, an alternative to XSLT 2.0. XSieve is one of the 'Google Summer of Code' projects.

Generative XPath

One XPath engine for different environments:

- any programming language
- any tree-like structure

Technology:

- written in Scheme
- uses the SXML format, an XML representation using S-expressions
- based on the DDO-SXPath library from the SXML tools
- Scheme VM plus SXML results in XML Virtual Machine

First results.

- Python AST as XML <<http://pysch.sourceforge.net/ast.html>>
A custom Scheme implementation is written, the SXML tools have got an XML view of the Python syntax trees.
- GNU utility `find` with XPath support <<http://uucode.com/texts/xfind/>>

```
$ ./find -xpath '/bin/*[@size > /bin/bash/@size]'  
/bin/ipv6calc  
/bin/rpm
```

Contacts

Oleg Paraschenko, Saint-Petersburg State University, Russia

E-mail: olpa@uucode.com, olepar@gmail.com, blog: <http://uucode.com/blog/>

At the school I'm wearing the T-shirt with words 'Generative XPath', 'Scheme', 'L_AT_EX'.