

SchemeTeX

John D. Ramsdell

SchemeTeX provides simple support for literate programming in any dialect of Lisp. Originally created for use with Scheme, it defines a new source file format which may be used to produce L^AT_EX input or Lisp code.

SchemeTeX source lines are divided into text and code. Lines of code start with a line beginning with “(”, and continue until the line containing the matching “)”. The remaining lines are text lines, and they are treated as comments.

When producing a L^AT_EX document, both the text lines and the code lines are copied into the document source file, but the code lines are surrounded by a pair of formatting commands (`\begin{astyped}` and `\end{astyped}`). This L^AT_EX environment formats the code as written, in typewriter font. A Lisp comment within a code line is formatted in an `\mbox` in Roman font. A SchemeTeX style command should include the `astyped` style option, so that the `astyped` environment is available. An example:

```
\documentstyle[astyped]{article}
```

SchemeTeX was designed under the constraint that code lines must be unmodified Lisp code, and text lines must be unmodified L^AT_EX code. Text editors with support for Lisp and L^AT_EX, such as Emacs, may be used for SchemeTeX code much as they are used for Lisp code and L^AT_EX code.

Some users prefer not modifying the `LOAD` function in their Lisp system. To support those users, the rule that text lines must be unmodified L^AT_EX code has been relaxed. Text lines that begin with “;” are copied without the initial “;”.

```
.SUFFIXES:      .dvi .tex .st

.st.dvi:
    make $*.tex && make $*.dvi

.st.tex:
    st $*

.tex.dvi:
    latex $*
```

Figure 1: A SchemeTeX Makefile

Usage under Unix

The extension for SchemeTeX files is “.st”. For T, the file `st.t` contains two programs used to obtain code from an “.st” file. The T expression

```
(LOAD-ST filespec environment)
```

loads a SchemeTeX file by creating a T source file if no T source file exists which is younger than the SchemeTeX file. The T source file is then loaded using the usual `LOAD` procedure. `COMPILE-ST` is like `LOAD-ST` except it compiles the file instead of loading it.

A L^AT_EX file is produced from a file with the “.st” extension using the Unix shell command

```
st file-name
```

It will produce a file with the “.tex” extension. The obvious make file is in Figure 1.