CPSC 498 Proposal

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1 Abstract

Modern LaTeX distributions include a tool called `luatex` that allows users to dynamically produce content via use of Lua code. Unfortunately, the Lua standard libraries do not have as much functionality as other popular scripting languages, such as Ruby. The goal of this project is to incorporate Ruby into LaTeX in a manner similar to `luatex` , but with the power and simplicity of Ruby over Lua.

2 Specification

The current `luatex` specification allows users to use several environments for writing and running Lua scripts. In addition, `luatex` provides a built in library called `tex` that allows output to be printed straight to the LaTeX document. The library, called RbTeX, will provide similar functionality through a gem called `rbtex`. In addition, the entire Ruby standard library will be available for use; RbTeX documents that need to interact directly with the system will most likely need to be compiled using the `--shell-escape` flag.

To use the library, users will need to have a Ruby version in the path. The code will be pre-processed, and inserted directly into the TeX code before `pdflatex` is called on the document. In addition, users will be provided with several ways in which to interact with Ruby from the TeX environment:

1. `inrbtex{}`: This command will provide a way for a use to execute one line of Ruby code at a time, or call a predefined function.
2. `rbtex{}`: This command will provide a way to write multiple lines of Ruby code. Any functions defined in this section will be globally defined, so they can be called in the `inrbtex{}` environment and in other `rbtex{}` environments.

The library will come with a program called `rbtex` that complies the provided LaTeX document, much like the `luatex` command.