## Embedding Sage computations inside LATEX

```
1  \begin{sagesilent}
2  i = 997
3  \end{sagesilent}
4
5  $\sage{i}$ has $\sage{number_of_partitions(i)}$
6  integer partitions. You don't need to compute
7  the number yourself!
8
9  \begin{sageblock}
10     f(x) = exp(x) * sin(2*x)
11  \end{sageblock}
12
13  The second derivative of $f$ is
14  $\sage{diff(f, x, 2)(x)}$
15  and a plot from $-3$ to $3$:
16
17  \begin{center}
18  \sageplot[scale=.25]{plot(f, -3, 3, fontsize=26,
19      transparent=True, color="white", thickness=4)}
20  \end{center}
```

997 has 21366628562913781584556907794729 integer partitions. You don't need to compute the number yourself!

$$f(x) = exp(x) * sin(2*x)$$

The second derivative of f is $4\cos(2x)e^x - 3e^x\sin(2x)$ and a plot from -3 to 3:
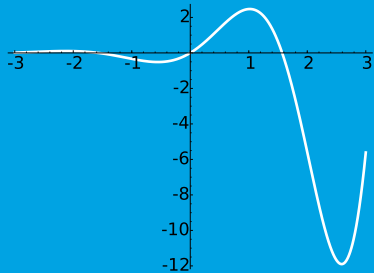
Website: https://cloud.sagemath.com

Open Source: https://github.com/sagemath/cloud/

Contact: William Stein <wstein@uw.edu>

Credits

SageMathCloud makes available, is built upon, and powered by: GNU/Linux, Node.js, Coffeescript, Python, IPython, Sage, LATEX, Octave, R, Julia, GCC, Fortran, Lisp, Haskel, Codemirror, Bootstrap, term.js, diff-patch-merge, Markdown, pandoc, rst2html, ImageMagic, rsync, ssh, Nginx, Cassandra, ZFS, Bup, Java, stunnel, tinc, HAproxy, and much, much more.

Financial support

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This flyer was created entirely inside SageMathCloud.

(See http://goo.gl/zFVe8w)

SageMathCloud is an extremely powerful environment for collaboratively authoring technical documents with realtime synchronization.

- Collaborative online web-service
- Real-time synchronization of all documents
- Easy downloading and publishing of files
- LATEX document editor
- Live-preview for Markdown, reStructuredText and HTML
- Powerful toolbar support
- Snapshots with continuous backup of all data
- Support for automation: Bash, Python, Makefile, ...
- Integrated chat-box for each document
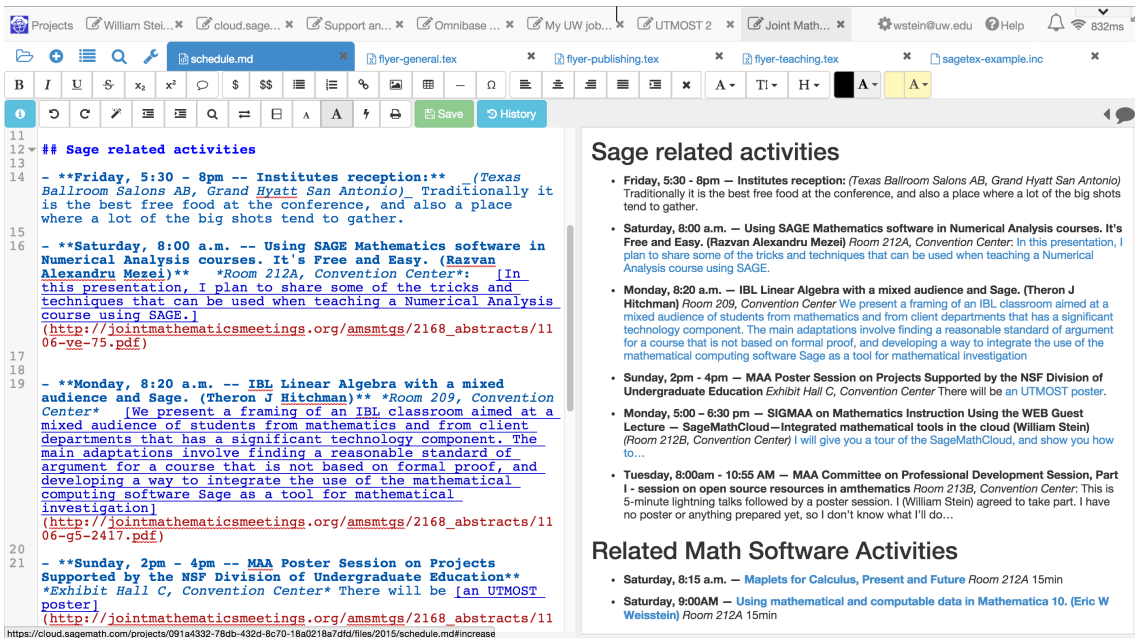
Markdown Document with toolbar support.
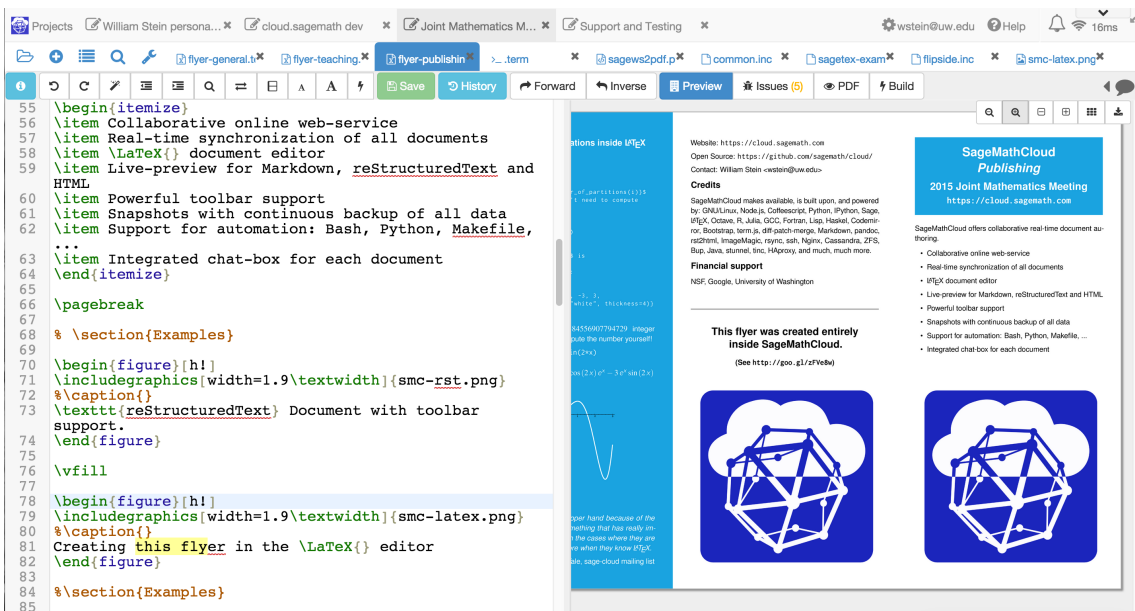
Creating this flyer in the LaTeX editor.

SageMathCloud for Publishing

Much scientific work involves authoring and publishing discoveries and results. SageMathCloud not only acknowledges, but fully embraces this by providing a fully integrated web-based environment for collaboratively authoring LaTeX, Markdown, reStructuredText and HTML documents.

Real-time Collaboration

Write any text-based documents with colleagues, synchronized in real-time, with all files continuously backed up, and use the integrated chat box to discuss the content.

LaTeX

SageMathCloud fully integrates a new editor for creating LaTeX documents collaboratively online. It conveniently displays error messages, provides forward and inverse search, and SageTeX: $\lim_{x \to 0+} \frac{1 + \cos(x)}{\sin(x)} = \infty$.

Structured-text Documents

If you want to edit Markdown, reStructuredText, MediaWiki or HTML documents, SageMathCloud's editor offers *live preview* and inserts formatting tokens by clicking on formatting icons in the *powerful toolbar*.

Public Access

Many file types can be converted to HTML and made publicly available. This includes Sage Worksheets, IPython notebooks, Markdown/rst/MediaWiki files and – of course – HTML documents.

Automation

Leverage the underlying GNU/Linux-based software stack for fully automated document creation. You have a database of results and want to create a large report containing hundreds graphics? No problem. You want to embed computations in a LaTeX document? Use SageTeX! Need R's Sweave via a custom Makefile? Do it!

Your work will always be safe thanks to SageMathCloud's continuous backup.