Matroid computation in Sage

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Based on joint work with
Rudi Pendavingh, Gordon Royle, you?

Maastricht Workshop on Graphs and Matroids, July 30 - August 3, 2012
Sage

Sage is

• A computer algebra system similar to Maple, Mathematica
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- Open source
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- Well-supported:
  - bug tracking
  - sage-support@googlegroups.com
  - AskSage
Matroids in Sage

Goals:

- Easy interface
- Robust (fast!) implementation of basic functions
- Flexible

Hope: first version submitted to Sage within 2 months.
Matroids in Sage

Needed for this version:

- Inline documentation and tests
- Loading, saving, copying
Matroids in Sage

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Planned for second version:

- Tutorial documentation
- Automorphism group
- Connectivity
- Handling large sets and classes of matroids
Use it now!

(i) Get and install Sage:
http://www.sagemath.org/
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(ii) From a shell prompt, type

```
sage -hg clone \nhttps://bitbucket.org/matroid/sage_matroids
cd sage_matroids
sage setup.py install
```

(iii) Start Sage and the notebook, type at top of worksheet

```
from sage.matroids.all import *
```
Join us!

- Discuss: http://groups.google.com/group/sage-matroid
- Get and contribute code: https://bitbucket.org/matroid/sage_matroids/
- These slides (soon): http://www.math.princeton.edu/~svanzwam/

Sage and Matroids workshop: Friday, 1pm - 2:30pm