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Welcome to Sage Days 78

Introduction to Sage

SageMath is a free open source mathematics software

Mission: *Creating a viable free open source alternative to Magma, Maple, Mathematica and Matlab.*

SageMath is **Open Source**

- ▶ You can use it for free
- ▶ You can install it for free
- ▶ Nobody owns it
- ▶ You can see the source code
- ▶ You can share, modify, re-distribute, or even sell... But you cannot close it!

SageMath is a **mathematics** software

- ▶ Built on top of **many** other open source softwares: Atlas, GAP, GMP, Linbox, Maxima, MPFR, PARI/GP, NetworkX, NTL, Numpy/Scipy, Singular, Symmetrica,...
- ▶ But also, a **native library** in **python** and **cython**: combinatorics, number theory, graphs, discrete geometry, ...
- ▶ 750k lines of codes, 5344 classes, 54110 functions (2015)

How did it start?

It was initiated by William Stein in 2005.

Who writes Sage?

All of us! Sage is written **by users, for users**: 267 contributors in 181 places. Sage is a **community** and takes its decisions as such.

How can I use Sage?

- ▶ native install on Linux and Mac
- ▶ install through a virtual machine on Windows
- ▶ through a **Live USB key**
- ▶ online on **SageMathCloud**

What is SageMathCloud?

- ▶ a **web platform** to use Sage online
- ▶ it is **open source** offers **free** accounts
- ▶ although it is run by a **private company** (created by William Stein)

DEMO