

Contributing to Sage – A crash course

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Note to self: do you have internet access?

What about the font size?

Changing Sage's source code

- ▶ What kind of change?
 - ▶ Add a feature
 - ▶ Fix a bug
 - ▶ Make the doc easier to understand
- ▶ Everybody can do it
- ▶ Takes from 5 minutes to forever
- ▶ All changes are peer-reviewed

Reviewing a change

- ▶ What should you check?
 - ▶ That the code works as expected
 - ▶ That the doc is understandable
 - ▶ That all tests pass
- ▶ Everybody can do it
- ▶ The reviewer sees what the author forgets
- ▶ Takes from 30 seconds to hours

For example:

<http://trac.sagemath.org/ticket/17973>

- ▶ A changeset
- ▶ The status of a ticket
- ▶ Comments, modifications
- ▶ The final branch
- ▶ Closure and inclusion

Changing the code

on your own computer first

1. Edit the code
2. Compile and run
`sage -br`
3. Goto 1.

You can enter the loop anytime,
But you can never leave

GIT: a Version Control System

If you know CVS, Mercurial or SVN,
then Git is the same (but even better)

If you do not know any of them,
don't panick

Your first git commands

- ▶ Snapshots, Branches, Changesets
- ▶ `git checkout` # load a snapshot
- ▶ `git commit -a` # create a new snapshot
- ▶ `git merge` # Merge snapshots
- ▶ `tig --all` # Look at history

Share snapshots

- ▶ Send a snapshot

```
git push <repository> local_name:remote_name
```

- ▶ Download a snapshot

```
git fetch <repository> remote_name:local_name
```

- ▶ Download+Merge a snapshot

```
git pull <repository> remote_name:local_name
```


Example:

Example (1/2): download a branch

Faster palindromes function for the Words library

<http://trac.sagemath.org/ticket/16935>

```
user@host$ git checkout -b faster develop
user@host$ git pull <branch_name>
user@host$ sage -br
```

Example:

Example (2/2): upload a small branch

Sage should say “Hey” more often

```
user@host$ git checkout -b modif develop
user@host$ git commit -a
user@host$ git push trac HEAD:public/my_branch
```

Git: main commands

Author

Create a new branch:

```
git checkout -b <name> develop
```

Take a snapshot:

```
git commit -a
```

Send the modifications:

```
git push trac HEAD:branch_name
```

Reviewer

Create a new branch:

```
git checkout -b <name> develop
```

Load a remote branch:

```
git pull trac branch_name
```

Documentation and tests

- ▶ All examples are also tests

```
sage -t file.py
```

- ▶ From documentation to HTML

```
sage -docbuild reference html
```

Find the information

- ▶ Sage's developer manual
www.sagemath.org/doc/developer/
- ▶ The reviewer's checklist
www.sagemath.org/doc/developer/reviewer_checklist.html
- ▶ Ask us on Sage-devel
groups.google.com/forum/#!forum/sage-devel
- ▶ Read the code & copy/paste it
- ▶ Git: there are 1000+ tutorials

Our doc can be improved ...
Help us improve it.