Git

Tags

Action	Command
Create a tag (**a**nnotated)	`git tag -a -m 'MESSAGE' TAGNAME [COMMIT]`
List tags (and NUM lines of annotation)	`git tag -l -nNUM`
Delete tag	`git tag -d TAGNAME`

Branch and merge

Extract a subproject with Git Subtree

You have a project app where one of the modules, `widget`, would better be kept in a separate Git repository. We'll assume widget now resides in a directory immediately under the project root ~/projects/app/widget/. The app project is on Github, at `git@github.com:user/app.git`.

The goal is to have widget as a separate project ~/projects/widget/, with its own Github repository `git@github.com:user/widget.git`. We'll assume this repository has been created and is still empty.

1. Go to project root:

   ```
   $ cd ~/projects/app/
   ```

2. Create a branch that contains only commits for files in `widget`:

   ```
   $ git subtree split --prefix=widget/ --branch=subtree/widget
   ```

3. Push this new branch to its own repository:

   ```
   $ git push git@github.com:user/widget.git subtree/widget:master
   ```

4. Create `widget` project directory:

   ```
   $ mkdir ~/projects/widget/; cd ~/projects/widget/
   ```

5. Pull the `widget` project from Github into its own directory:

   ```
   $ git clone git@github.com:user/widget.git
   ```

6. Maybe do some more development, and release the first version:

   ```
   $ git tag -a -m 'First stable release' v1.0.0
   $ git push --tags
   ```

At this time, you have two separate repositories. However, app/widget/ is still part of the original repository. However, now it should be maintained in its own repository, and changes should be pulled into app from `widget`:

1. Remove the widget directory from the app project:

```
$ cd ~/projects/app/
$ git rm -rf widget/
$ rm -rf widget/  # delete ignored files that were left behind
```

2. Fetch the widget release from Github (—squash "summarizes" all changes as single commit):

```
$ git subtree add --prefix=widget/ --squash github.com:user/widget.git tags/v1.0.0
```

References

- http://ariya.ofilabs.com/2014/07/extracting-parts-of-git-repository-and-keeping-the-history.html
- https://git.kernel.org/cgit/git/git.git/tree/contrib/subtree/git-subtree.txt