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# DD1301 & DD1337

# Managing Work with Github

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# Managing Project Work

# Which software can I use?

- Your file system
  - Most basic option, start a project thinking about the content and not the **structure or safety** of the work
- Cloud storage service
  - e.g. Dropbox, Google Drive
  - Better, at least the files are safe
  - Historical version may be accessible
  - Structure of work is still file system based

# Version Control System

- A more robust solution that
  - Keeps files safely off your machine
  - Allows others to access and collaborate
  - Keeps versions of your files as they change
  - **Records the rationale for changes**
  - **Issue tracker for lightweight project management**
    - Features, Milestones, Issues, etc
    - Discussions attached to Issues
  - **Manages experimentation via branching and merging**

# KTH Github

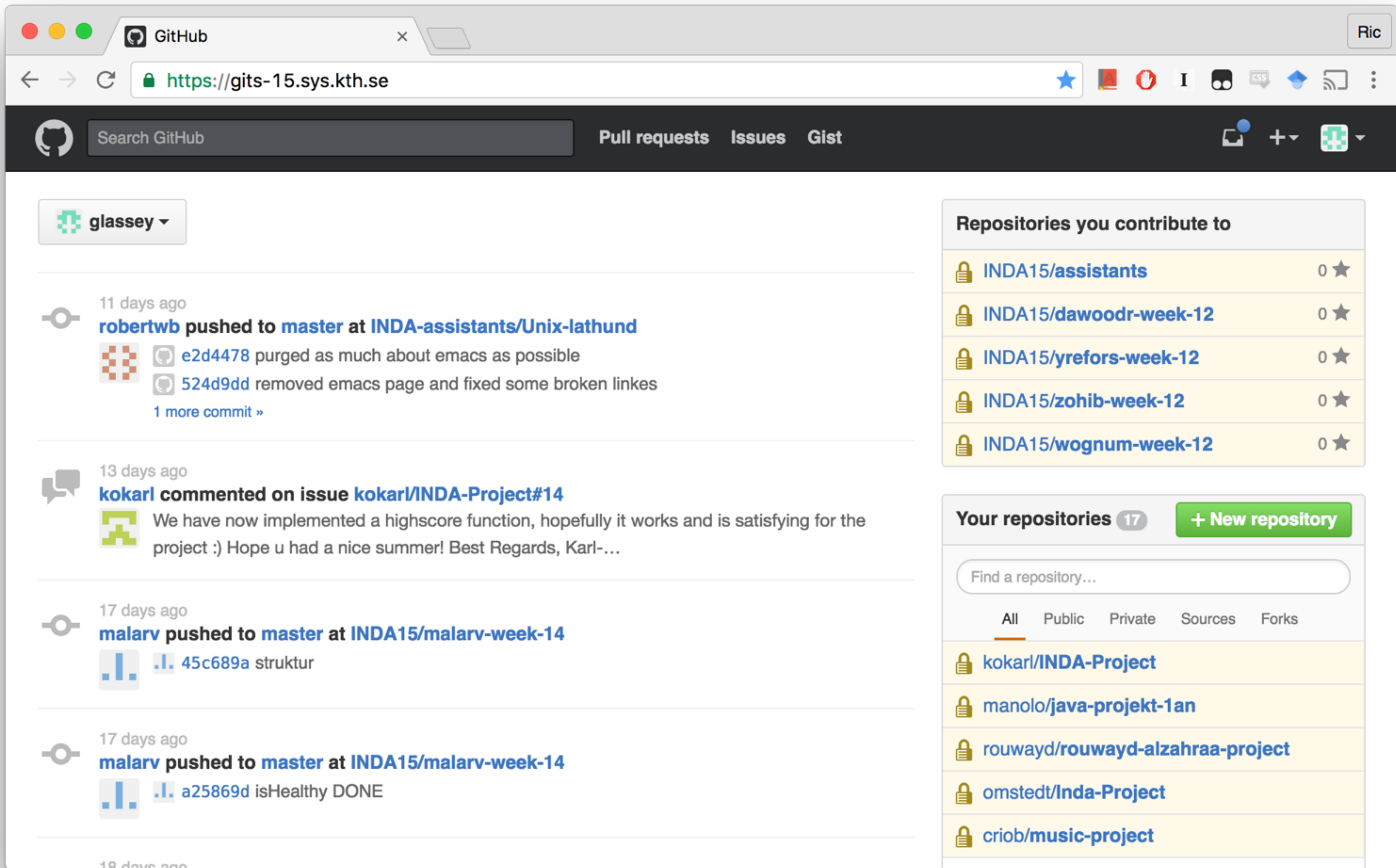
- You may have heard of [www.github.com](https://www.github.com)
  - One of the most dominant places to manage open source projects
  - Combines the Git version control software with a suite of useful tools via an online interface
  - Tools include the issues tracker, integrated wiki etc
- We have the enterprise edition running at KTH
  - You can experiment and learn before putting your work out there on the regular Github

# Github Demo

# Enabling Your Account

- Visit: <https://gits-15.sys.kth.se/>
  - An account is automatically created
  - Log in with your KTH details







# Inside a Repo

The screenshot shows a web browser window displaying the GitHub repository page for **kokarl/INDA-Project**. The browser's address bar shows the URL `https://gits-15.sys.kth.se/kokarl/INDA-Project`. The repository is marked as **PRIVATE** and has 3 watchers, 0 stars, and 0 forks. It is described as a "Repository for group consisting of Karl-Oskar Karlsson and Alexander Hellefur". The repository statistics show 26 commits, 2 branches, 0 releases, and 2 contributors. The current branch is **master**. A recent commit by **kokarl** is shown, titled "Update progressTimer.java", with the latest commit hash `c4b67209b2`. The commit history table lists three entries: "Resources" (#9 Transparent background, 3 months ago), "src/clickergame" (Update progressTimer.java, 3 months ago), and "README.md" (Update README.md, 4 months ago). The right sidebar contains links to **Code**, **Issues** (2), **Pull requests** (1), **Wiki**, **Pulse**, and **Graphs**. At the bottom right, the SSH clone URL is provided as `git@gits-15.sys.kt`, and a button "Clone in Desktop" is visible.

kokarl/INDA-Project PRIVATE

Unwatch 3 Star 0 Fork 0

Repository for group consisting of Karl-Oskar Karlsson and Alexander Hellefur

26 commits 2 branches 0 releases 2 contributors

branch: master INDA-Project / +

Update progressTimer.java

kokarl authored on May 25 latest commit c4b67209b2

Resources	#9 Transparent background	3 months ago
src/clickergame	Update progressTimer.java	3 months ago
README.md	Update README.md	4 months ago

README.md

**INDA-Project**

SSH clone URL

git@gits-15.sys.kt

You can clone with [HTTPS](#), [SSH](#), or [Subversion](#).

Clone in Desktop

# Inside a Repo

- Typically contains:
  - A collection of files
  - A readme.md file that describes the repo/project
    - displayed beneath files automatically
  - The Issue tracker, wiki page and other tools
    - via the navigation links

# Create a Repo

Create a New Repository

https://gits-15.sys.kth.se/new

Search GitHub

Pull requests Issues Gist

Owner Repository name

glassey / dd1301-2016-test ✓

Great repository names are short and memorable. Need inspiration? How about **mustached-octo-meme**.

Description (optional)

☒ **Public**  
Any logged in user can see this repository. You choose who can commit.

☐ **Private**  
You choose who can see and commit to this repository.

☒ **Initialize this repository with a README**  
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None**

Create repository

# Fresh Repo

The screenshot shows a web browser window with the address bar displaying `https://gits-15.sys.kth.se/glassey/dd1301-2016-test`. The page title is "glassey / dd1301-2016-test". The repository has 1 commit, 1 branch, 0 releases, and 1 contributor. The "Code" tab is selected, showing the initial commit. The repository name "dd1301-2016-test" is displayed in a large font. The right sidebar contains links for Issues (0), Pull requests (0), Wiki, Pulse, Graphs, and Settings. The SSH clone URL is `git@gits-15.sys.kt`.

glassey / dd1301-2016-test

Unwatch 1 Star 0 Fork 0

Description Website

Short description of this repository Website for this repository (optional) Save or Cancel

1 commit 1 branch 0 releases 1 contributor

branch: master dd1301-2016-test / +

Initial commit

glassey authored 18 seconds ago latest commit a297bb9aae

README.md Initial commit just now

README.md

dd1301-2016-test

Code

Issues 0

Pull requests 0

Wiki

Pulse

Graphs

Settings

SSH clone URL

git@gits-15.sys.kt

You can clone with HTTPS, SSH,

# Using the Repo

- Investigate the:
  - Commit History
  - Issue Tracker
  - Readme.md file
- You can create and edit some parts of the repo via the web interface, but it is more normal to work locally
- We need to clone the repo to our local machine



```
dd1301 — -bash — 104x14
Last login: Sat Aug 27 18:41:09 on ttys001
[Ric:~ ric$ cd dev/
[Ric:dev ric$ mkdir dd1301
[Ric:dev ric$ cd dd1301
[Ric:dd1301 ric$ git clone git@gits-15.sys.kth.se:glassey/dd1301-2016-test.git
Cloning into 'dd1301-2016-test'...
remote: Counting objects: 3, done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
Checking connectivity... done.
[Ric:dd1301 ric$ ls
dd1301-2016-test
Ric:dd1301 ric$
```

# Making changes

- Git will watch how you change this repo
  - **\$ git status**
- We can change the README.md file using any editor
  - **\$ atom README.md**
- Existing files are watched, but new files/folders
  - **\$ touch newfile.txt**
  - **\$ git add newfile.txt**



# Staging Changes

- We need to stage a new version and describe it so others know what we have done to the repo
- **\$ git commit -a**

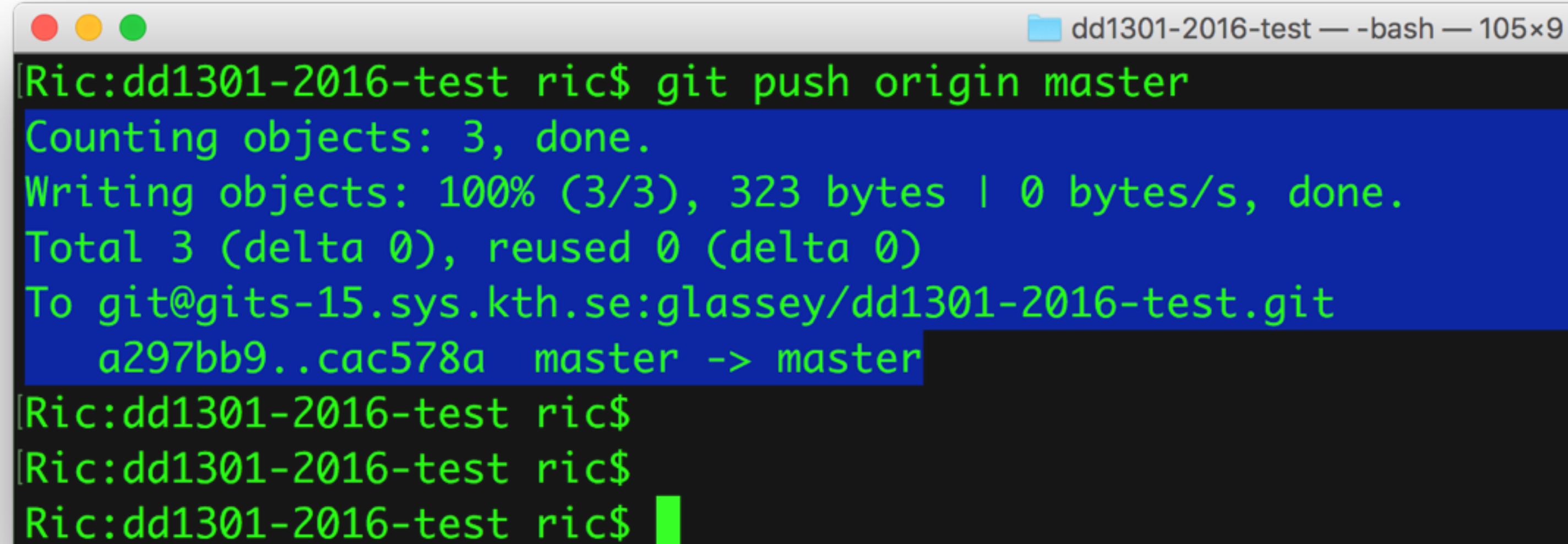
```
dd1301-2016-test — -bash — 104x14
[Ric:dd1301-2016-test ric$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   README.md

no changes added to commit (use "git add" and/or "git commit -a")
[Ric:dd1301-2016-test ric$ git commit -a
[master cac578a] Modified the README.md as a demonstration of a simple edit and push
1 file changed, 2 insertions(+)
Ric:dd1301-2016-test ric$
```

# Pushing a new Version

- Finally, the commit is just local, so we need to update the remote repository, so all can see the new version
- **\$ git push origin master**



```
dd1301-2016-test — -bash — 105x9
[Ric:dd1301-2016-test ric$ git push origin master
Counting objects: 3, done.
Writing objects: 100% (3/3), 323 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To git@gits-15.sys.kth.se:glassey/dd1301-2016-test.git
   a297bb9..cac578a  master -> master
[Ric:dd1301-2016-test ric$
[Ric:dd1301-2016-test ric$
[Ric:dd1301-2016-test ric$
```

# Check the Remote Repo

The screenshot shows a web browser window with the address bar displaying `https://gits-15.sys.kth.se/glassey/dd1301-2016-test`. The page title is "glassey / dd1301-2016-test". The repository has 1 watch, 0 stars, and 0 forks. The description field is empty, and the website field is also empty. The repository statistics show 2 commits, 1 branch, 0 releases, and 1 contributor. The latest commit is by "glassey" 5 minutes ago, with the message "Modified the README.md as a demonstration of a simple edit and push". The commit hash is "cac578a18e". The README.md file is listed with the same message and time. The README content is "dd1301-2016-test" followed by "just a little change." The right sidebar contains links for Code, Issues (0), Pull requests (0), Wiki, Pulse, Graphs, and Settings. The SSH clone URL is "git@gits-15.sys.kt" and there is a "Clone in Desktop" button.

glassey / dd1301-2016-test

Unwatch 1 Star 0 Fork 0

Description Website

Short description of this repository Website for this repository (optional) Save or Cancel

2 commits 1 branch 0 releases 1 contributor

branch: master dd1301-2016-test / +

Modified the README.md as a demonstration of a simple edit and push

glassey authored 5 minutes ago latest commit cac578a18e

README.md Modified the README.md as a demonstration of a simple edit and push 5 minutes ago

README.md

dd1301-2016-test

just a little change.

Code

Issues 0

Pull requests 0

Wiki

Pulse

Graphs

Settings

SSH clone URL

git@gits-15.sys.kt

You can clone with HTTPS, SSH, or Subversion.

Clone in Desktop



# Check the Commit Log

The screenshot shows a web browser window displaying the commit log for the repository 'glassey/dd1301-2016-test' on the 'master' branch. The browser's address bar shows the URL 'https://gits-15.sys.kth.se/glassey/dd1301-2016-test/commits/master'. The repository page header includes the repository name, a search bar, and navigation links for 'Pull requests', 'Issues', and 'Gist'. The commit log shows two commits on August 29, 2016:

- Modified the README.md as a demonstration of a simple edit and push**  
glassey authored 5 minutes ago  
Commit hash: cac578a
- Initial commit**  
glassey authored 14 minutes ago  
Commit hash: a297bb9

Each commit entry includes a green square icon with a white 'X' and a button to view the commit details. The right sidebar contains icons for code, issues, pull requests, and other repository features.

# \* Review \*

- Github is a great way to manage project work
  - Change management
  - Collaboration
  - Project management
- It can be confusing at first, but you will get practice at KTH
  - D students will use it every week in DD1337
  - F students will use it in their Python work
- Still the **most desirable skill** that software companies want in new hires (alongside basic intelligence ^\_\_^)