



GIT – Version Control System

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October 16, 2017

Project Group: Data Extraction, Search, Analysis and Benchmarking

What is GIT ?

A version Control system

A version control system are a category of software tools that keep track of changes to the code in a special kind of database and help the software team manage changes to source code over time

- Keep track of changes to code
- Synchronizes code between different people
- Your code will always be available with you



GitHub & Creating a Repo

Join GitHub

The best way to design, build, and ship software.



Step 1:
Create personal account



Step 2:
Choose your plan



Step 3:
Tailor your experience

Create your personal account

Username

Mohitupb ✓

This will be your username — you can enter your organization's username next.

Email Address

mac24079@mail.uni-paderborn.de ✓

You will occasionally receive account related emails. We promise not to share your email with anyone.

Password

..... ✓

Use at least one lowercase letter, one numeral, and seven characters.

By clicking on "Create an account" below, you are agreeing to the [Terms of Service](#) and the [Privacy Policy](#).

Create an account

You'll love GitHub

Unlimited collaborators

Unlimited public repositories

- ✓ Great communication
- ✓ Frictionless development
- ✓ Open source community

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[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner

Mohitupb ✓

Repository name

Seminar ✓

Great repository names are short and memorable. Need inspiration? How about [effective-octo-giggle](#).

Description (optional)

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Public

Anyone 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

Add a license: None ⓘ

Create repository



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GIT Clone

The screenshot shows the GitHub repository page for 'Mohitupb / Seminar'. The repository has 1 commit, 1 branch, 0 releases, and 1 contributor. The 'Code' tab is selected, showing the 'Initial commit' with a 'README.md' file. A 'Clone or download' button is visible, which has triggered a dropdown menu. The dropdown menu offers two options: 'Clone with HTTPS' and 'Use SSH'. The HTTPS URL 'https://github.com/Mohitupb/Seminar.git' is displayed and highlighted, with a 'Copied!' notification. Below the URL are buttons for 'Open in Desktop' and 'Download ZIP'.

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1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request

Create new file Upload files Find file Clone or download

Mohitupb Initial commit

README.md Initial commit

README.md

Seminar

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The screenshot shows a Windows command prompt window. The user has navigated to the Desktop directory and listed the contents. The output shows a directory listing of the Desktop, including files and subdirectories. The user then runs the command 'git clone https://github.com/Mohitupb/Seminar.git', and the output shows the cloning process, including counting objects, compressing objects, and unpacking objects.

```
C:\WINDOWS\system32\cmd.exe

15-10-2017 11:14 <DIR> Downloads
12-10-2017 14:25 <DIR> eclipse
26-08-2017 20:57 <DIR> Java_workspace
12-10-2017 12:40 <DIR> Pictures
0 File(s) 0 bytes
11 Dir(s) 205,765,672,960 bytes free

C:\Users\mmahajan>cd Desktop

C:\Users\mmahajan\Desktop>dir
Volume in drive C is System
Volume Serial Number is F23F-508C

Directory of C:\Users\mmahajan\Desktop

15-10-2017 11:25 <DIR> .
15-10-2017 11:25 <DIR> ..
15-10-2017 11:24 <DIR> Desktop
15-10-2017 11:26 <DIR> git
0 File(s) 0 bytes
4 Dir(s) 205,765,935,104 bytes free

C:\Users\mmahajan\Desktop>git clone https://github.com/Mohitupb/Seminar.git
Cloning into 'Seminar'...
remote: Counting objects: 3, done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.

C:\Users\mmahajan\Desktop>
```



GIT Clone

Creates a copy of repository and stores into your computer

`git clone <url>`

GIT Add

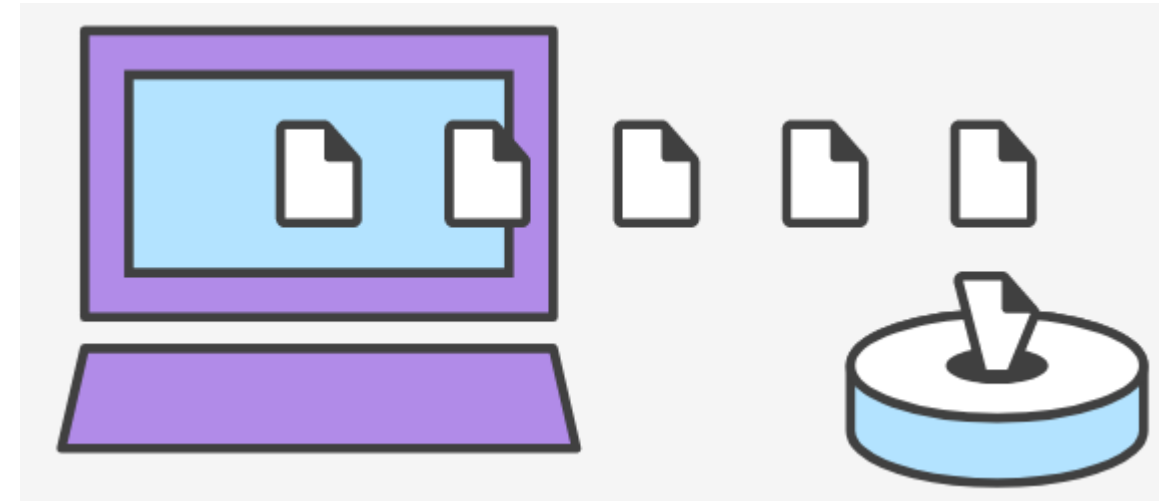
Add files to the staging area

`git add <filename>`

Git Commit

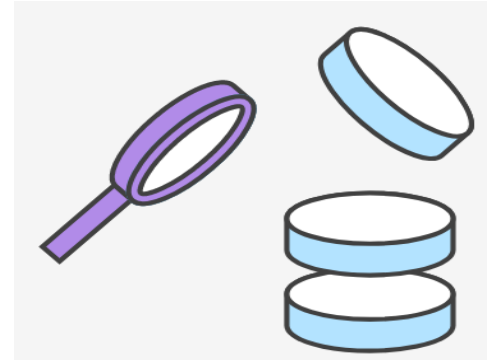
Save changes to repository as a new version

`git commit -m "message"`



GIT Status

Shows the current status of the repository
`git status`



GIT Push

Allows to send changes to the repository
`git push origin master`



Git Pull

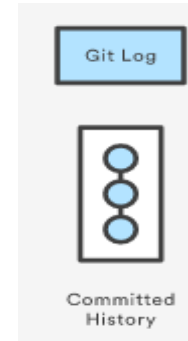
Retreives changes from the remote repository to obtain a recent version of code/files
`git pull origin master`



GIT Log

Shows a history of commits and messages

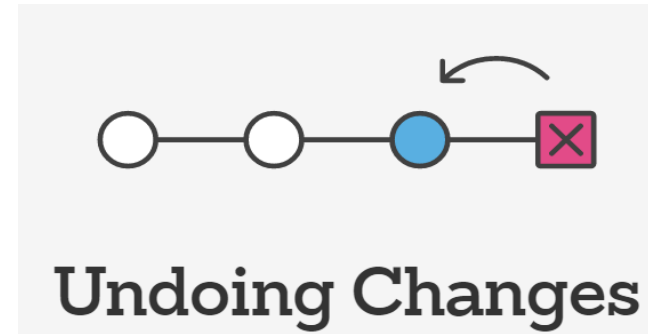
`git log`



GIT Reset

Allows to undo the code back to a previous commit

`git reset --hard <commit>`



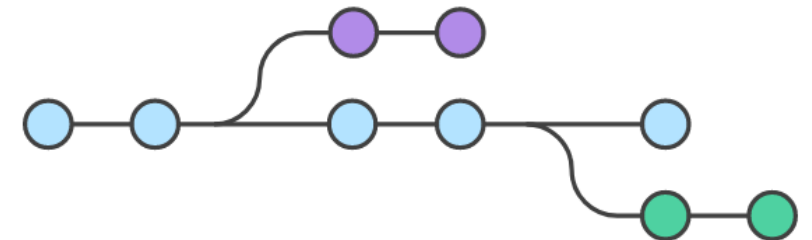
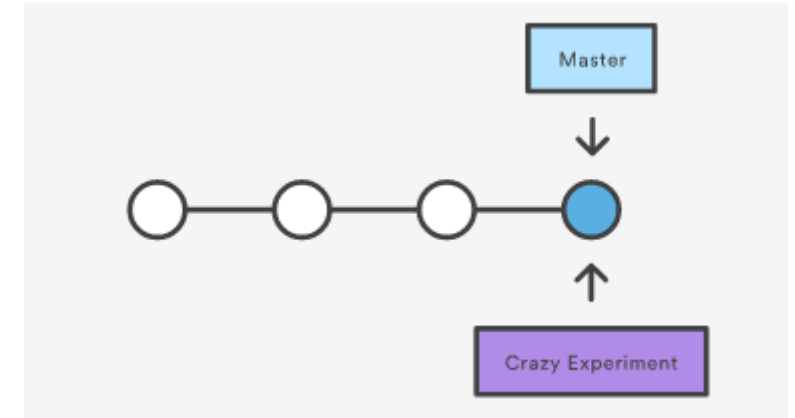
Fork A Repo

Allows you to freely experiment with changes without affecting the original project by creating a copy of project



Branching

- Branch is a version of the repository
- Every branch has its own commit history
- The branch is totally independent of the master branch
- When working with branches you are relaxed from messing up the master branch
- Once sure that the branch is ready you can merge that to the master branch



Reference Links

Install GIT

<https://www.atlassian.com/git/tutorials/install-git>

Learn GIT

<https://www.atlassian.com/git/tutorials/learn-git-with-bitbucket-cloud>

GIT Commands

<https://www.atlassian.com/git/tutorials/atlassian-git-cheatsheet>



