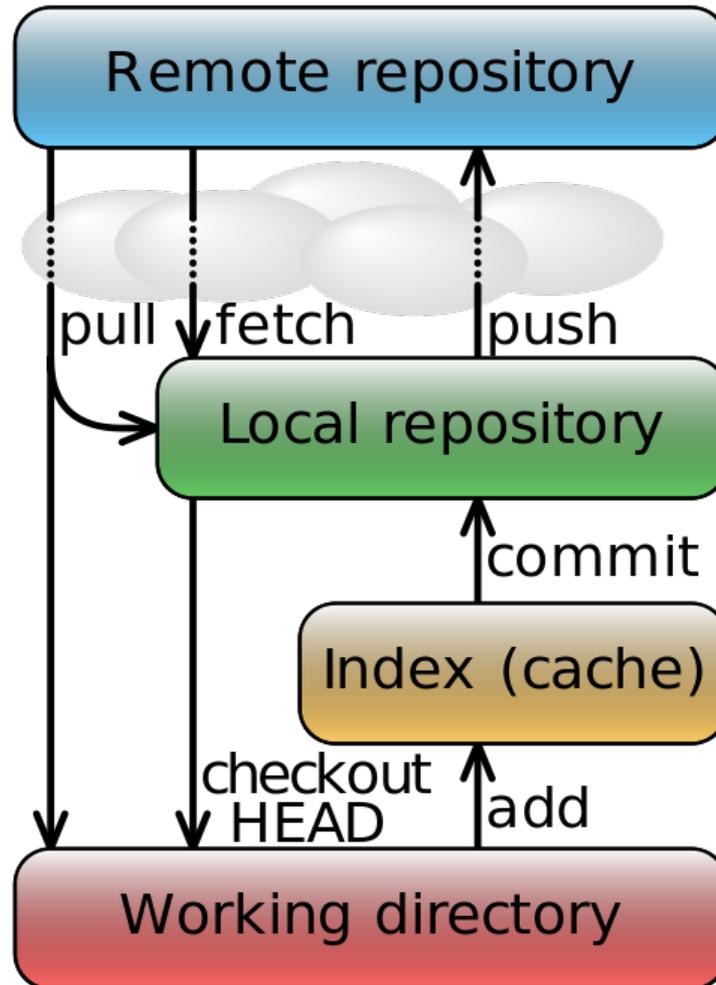# Git & GitHub

Przemek (Pshemek) Lach
SEng 371
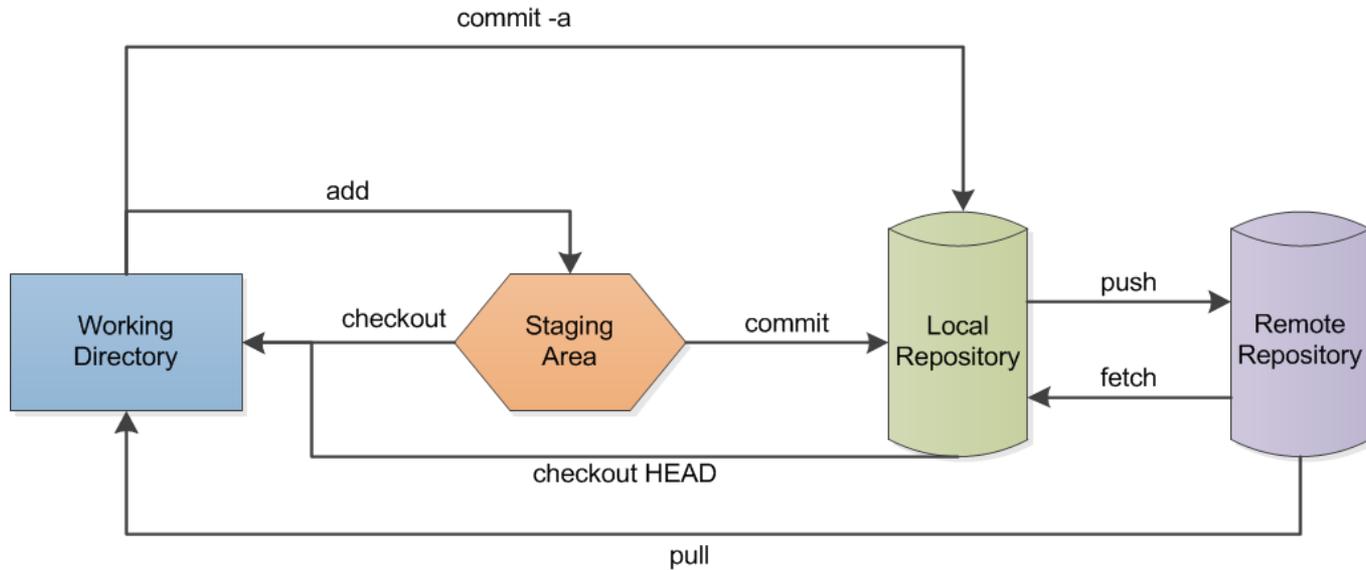
What are we doing?

- Sign-up & quick tour of GitHub.
- Create local project & connect to GitHub
  - Bash
  - GUI (A better GUI client)

Git Workflow

Git Workflow

commit -a: Directly commit modified and deleted files into the local repository (*no new files!*)
add: Add a file to the staging area.
checkout: Get a file from the staging area.
checkout HEAD: Get a file from the local repository
commit: Commit files from the staging area to the local repository
push: Send files to the remote repository
fetch: Get files from the remote repository
pull: Get files from the remote repository and put a copy in the working directory

Create Account (https://github.com/)

- Remote repository
- Free if you don't mind sharing your code.

Lets Create an Account!

GitHub & Git Bash
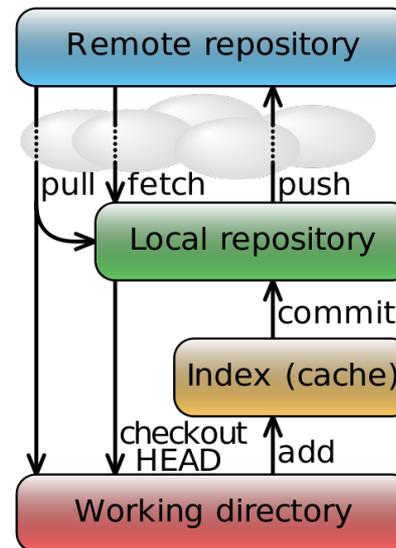
- In order to push/pull to/from GitHub we need to create a SSH key: RSA public/private cryptography.
- Upload the public key to GitHub.
- ssh-keygen -t rsa -C "<e-mail address>"
  - -t allows us to specify the type of key we want to create.
  - -C allows us to specify a comment.
  - **NOTE:** backup your local .ssh folder if you have one since creating this new key may mess things up.

GitHub & Git Bash

- git init
- git add .
- git commit -m "A comment."
- **git remote add origin <remote_name>**
- **git push origin master**
- **git pull origin master**

Lets Create Project & Upload to GitHub

GitHub & Git Gui Client

- The idea is the same except the Gui client hides some of the work we had to do using Git Bash
  - SSH keys are auto-generated and uploaded to GitHub
  - The process of 'staging' is invisible.
  - Nicer UI for seeing diff.
  - and much more..!
- We're going to have to install this tool since it's not on your computers.

Lets Install Git GUI Client

GitHub and Branching

- You can push/pull to other branches in addition to 'master'.
    - git push origin develop
        - This will create a new branch called 'develop' on GitHub or simply add to it if it already exists.