Lab 0 Description

Learning Objective

The objective of this lab is to help you have an opportunity to get acquainted with the workflow for submitting lab assignments. It requires that you set up a **Version Control Systems (VCS)** for the semester. What it boils down to is namely:

1. Create an account (skip if you already have an account)
2. Create a new repository (reusing an existing repository is fine)
3. Attach files to the repository
4. Copy/paste the link to that repo to the submission form

Requirements:
- The repository should either be set to *public* or you can add me as a collaborator (@katychuang) so that I can see your files
- It's up to you how to store your files in your repository, as long as I can find relevant files easily for grading. Common string structure to paste in the box looks like this https://github.com/username/repo

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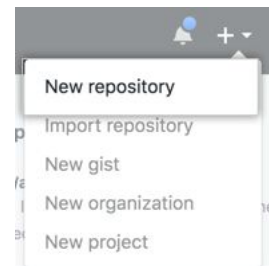Extra (not required, but good professional practice):
- Include a sample project to the repository, whatever you like, in any language. "Hello world" is fine (see above section for specific steps that are required)
- Include a README file (https://www.makeareadme.com/) to describe the contents of the repository
- Include a CHANGELOG file to log revisions (https://keepachangelog.com/en/1.0.0/)
- Include a TODO file to track tasks (https://github.blog/2014-04-28-task-lists-in-all-markdown-documents/)
- Use the issue tracker feature that comes with your repository to create todo items
- Tag the issue using commit messages
- Whatever other features you would like to explore from https://git-scm.com or https://docs.github.com/en/github/managing-your-work-on-github

Basic Concepts

- git is a version control system that lets you manage and keep track of your source code history. It is a tool installed on your computer (local machine).
  - git is a command-line tool by itself, there are gui's to work with it too
- $github$ is a cloud-based hosting service. It is a product. It is owned by Microsoft.
- ssh is a secure protocol used for authentication and file transfers. That's the tunnel between your machine and Github's servers.

Steps to set up for the first time

1. Go to github.com and create an account
2. (only for Windows users) - install git to your machine with either options
   1. GitHub Desktop https://desktop.github.com/
   2. Git for Windows https://gitforwindows.org/
3. Authentication between your local machine and GitHub
   1. Check if you have existing SSH Keys (Instructions)
      i. If not, on your machine, create a public key (Instructions)
   2. Github: Under *settings > ssh keys* add your ssh key. The menu item can be found under your avatar icon > Settings (Instructions)
4. Create a new repository on Github
   Go to the top right of your screen and click the '+' icon (Instructions)

5. Clone your github repo locally (Instructions)
6. Add files (Instructions)
7. Commit changes (Instructions)
8. Push changes (Instructions)
9. Submit your link to the google form

References

- Read Chapters 1-2 of the git book: https://git-scm.com/book/en/v2
- Creating a new repository on GitHub https://help.github.com/en/github/creating-cloning-and-archiving-repositories/creating-a-new-repository
- Git Book https://git-scm.com/book/en/v2
- Tutorial https://guides.github.com/activities/hello-world/