Logo, company name

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**Topic 18**

**Basic git operations**

**Learning Outcomes**

* Work with a remote git repository, creating and merging branches and managing conflicts.
* Create, switch between and merge .
* Create and manage the files in a local git repository.

**1. Basic Git Operations**

***Installing Git***

* Go to “Git”, click at “Download for Mac” or “Download for Windows”
  + <https://git-scm.com/>

***Setting up Git Credentials***

* git --version
  + *# show the git version*
* git config --global user.name “Handsome Koh”
* git config --global user.email “chkoh005@mymail.sim.edu.sg”

***Setting up Git Repository***

* cd ~/directory/gitKOH/
  + *# change to gitKOH directory*
* git init
  + *# initialise empty Git repository in gitKOH*
  + *# ~/directory/gitKOH/.git/ created*

***Basic Git Commands***

* git status
  + *# check repository current status*
  + *# branching; committing; staging*
* git add example.py
  + *# git add <filename>*
  + *# stage / adding example.py to repository for version control*
* git rm --cached <filename>
  + *# un-stage / removing file from repository*
* git commit -m “Handsome Version 1”
  + *# captures a snapshot or milestone along the timeline of a Git project*
  + *# commits are created to capture the project’s currently staged changes*
  + *# confirm a staged files*
* git commit --amend
  + *# un-commit / edit previous commit*
* git log
  + *# show complete log of all changes*
  + *# list the commits done so far*
* git branch
  + *# checking the branch currently at*
  + *# a pointer to a snapshot of changes*
  + *# git stores a branch as a reference to a commit, instead of copying files from directory to directory.*
* git branch first-branch
  + *# create a new branch name first-branch*
* git checkout first-branch
  + *# switch to branch first-branch*
* git checkout master
  + *# switch to master branch*
* git merge first-branch
  + *# merge first-branch into master*
* git reset

***Interact with Remote Repository***

* git clone <url>
  + *# clone from a repository*
* git push
  + *# push to the repository*
* git pull
* git fetch
* Branch and Fix (some codes)
  + git checkout -b my\_fix
* Commit and Merge (the changes)
  + git commit -a -m “commit for my\_fix”
  + git checkout master
  + git merge my\_fix

Diagram

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[Source: *https://medium.com/@sahoosunilkumar/how-does-git-works-5cc8444ea383*]

**2. Lab: Basic Git Operations**

* “T5\_git\_lab\_20201207.pdf”

**3. Exercises**

***Topic 18 Practice Quiz***

* Work on *Practice Quiz 18* posted on Canvas.

**Useful Resources**

* + [http://](http://f)