Git, UNIX & Maven Study Guide

Git

**What is version Control?**

Version control is a system that records changes made to files and directories, and then creates a snapshot of those changes so that it can be tracked and managed. Creating different versions, or snapshots of our changes gives us a detailed view of what was edited, and it gives us the ability to rollback to a previous version of code.

**What is the difference between Git and Github?**

* Git is a version control system that allows you to manage and keep track of your codes history.
* Github is a cloud-based service that allows you to create and manage repositories.

**List the git commands you know and what they do?**

* **Git add .** – adds an entire directory to the staging area
  + staging is essentially a preview of what is to be committed
* **git status** – displays the state of the working directory and staging area
  + shows you which changes have been staged, and what is being currently tracked by Git.
* **Git commit -m “message” –** snapshot of changes made, used for version control
* **Git push** – sends changes that were committed to remote repository.

**How would you prevent a file from being tracked by git?**

You could create a .gitignore file which tell Git which files or folders to ignore.

**What is the git workflow for editing code and saving changes?**

When editing code you want to go ahead an use git add to add files or directories to a staging area. You can then use git status to view the status of the staging area. Once your satisfied with the changes made, then you can use git commit to commit the changes, thus creating a snapshot of the changes. Then you can finally use git push to send that code to a remote repository.

**What is a commit?**

A commit is essentially a way to capture the state of a project currently staged changes at a point in time. Every time you make a change to the state of the project you can commit your changes.

**What is a branch? What are some common branching strategies?**

A branch is a pointer to a snapshot of the main project or repository. This means that a developer could work on a branch or version of the main project, without actually editing the code from the main project. Then, once features are added or changes are made to within a branch, you can merge it with the main branch to implement the changed or added code.

**Unix commands**

**Where are the root and home directories located?**

* Home directory is located at **‘/c/Users/[user]’**
  + Can get to home directory by typing **‘cd ~’**
* Root directory is denoted by a forward slash **(/)**.
  + Can navigate to root directory by typing **‘cd /’**

**Commands to navigate file hierarchy using command line:**

* cd – change directory
* pwd- print the working directory
* cd .. – changes to one level above current directory
  + EX: we use cd .. in /c/Users/Preston this will change the directory to /c/Users/

**Commands to list files, hidden files, and edit a file:**

* **ls**: list files within a directory
* **ls -a**: list all files (hidden files) in a directory
* **Nano / Vim**: Text editors use to edit files
* **mv [filename] [directory path]**: moves file to another directory
* **rm [filename]**: removes file

Maven

**What is the POM and what is the pom.xml?**

POM – the file that describes a Maven project and its dependencies.

Dependencies – 3rd party software required by a project, for instance JDBC.

Maven – Project management tool that allows you to easily modify javas compiler version, quickly add/manage dependencies used for projects.