Notes from LinkedIn Courses

Course 1: Git Essential Training: The Basics

# Install Git

## Install Git on Windows

* <https://git-scm.com>
* SCM – Source Code Manager
* Git settings while installing
  + Most default options
  + Edit: You can set to use Notepad++
* Go to Windows Command Prompt or Git Bash
  + Git –version (To check that a version is installed)

## Basic Git configuration

* User directory: C:\Users\sanka
* Configuration in three places
  + System: git config --system
  + User: git config –global
  + Project: git config
* git config --global user.name "Sankarappan Gopalsamy"
* git config --global user.email [sankarappan.gopalsamy@gmail.com](mailto:sankarappan.gopalsamy@gmail.com)
* git config –list

## Git Help

* git help
* git help log - It will bring the manual pages

# Getting Started

## Initialize a Repository

* Create a project directory
* Go to that directory in the command prompt
* git init
* It will create .git directory
  + ls -la .git
* This directory is the git tracking.

## Where Git files are stored

* Create a new file file using a text editor
* git add .
* git commit -m "Initial commit"

## Your first Commit

* Make changes
* Add the changes
* Commit changes to the repository with a message

## Write Commit Messages

* A single line summary
* Optionally followed by a blank line and a more complete description
* Keep each line less than 72 chars
* Write in the present tense

View the Commit log

* git log : gives list of all commits
* git log -n 5 : logs latest 5 commits
* git log –grep=”key” : search for commits containing key

# Git Concepts and Architecture

## The three trees

* Repository, Staging index, Working

## Git Workflows

* Add from working to staging index;
* Commit from staging index to repository.

## Hash Values (SHA-1)

* Git labels and refers its commits using hash values
* Git generates a checksum for each change set
* Checksum algorithms convert data into a simple unique number – checksum
* Same data always equals the same checksum.
* Git uses SHA-1 algorithm to create checksums
* 40-character hexadecimal string

## The HEAD pointer

* Pointer to tip of current branch in repository.

## Add Files

* git status
  + To know the current status including current branch and anything to commit or untracked.

Course 2: Git: Branches, Merges, and Remotes

# Set Up a Remote

## Set up a GitHub account

* <https://github.com>
* Most popular Git host
* Free and inexpensive hosting plans
* Create your personal account
* Create a new repository
* Quick setup gives the new GitHub repository address (URL)
  + https://github.com/gopalss/Student-Management.git

## Add a remote repository

* Go to your local Git repository
* Command to add a remote repository:

git remote add origin https://github.com/gopalss/Student-Management.git

## Create a remote branch

* git push -u origin main

# Collaborate with a remote

## Push changes to a remote repository