# Git Hub

## Getting Started

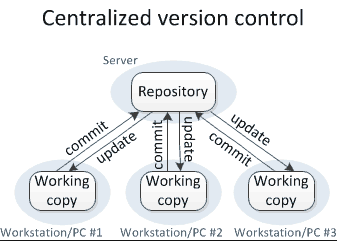
**Version Control:** It is a system that records changes to a file or set of files over time so that we can recall specific versions later.

**Local Version Control Systems:** It is a simple database which keeps all the changes of the files in the disk in a special format.

(RCS ∷ Revision Control System)

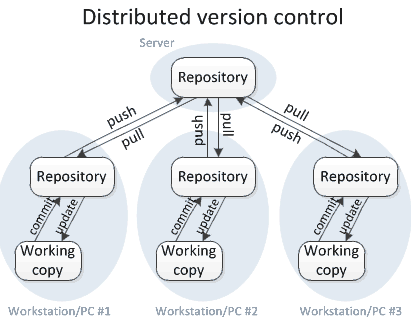
**Centralized Version Control Systems:** It’s downside is when the server goes down, no one can collaborate and it becomes devastating when the hard disk corrupts.

(SVN ∷ Apache Subversion)



**Distributed Version Control Systems:** It saves the snapshot of the file as well as the mirror repository (Versions Database)

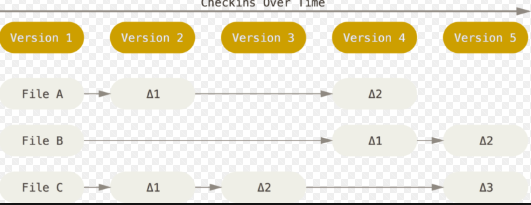
(Github)



## Git Basics

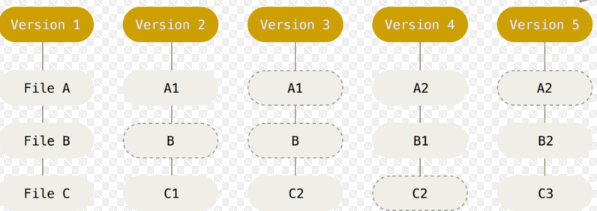
### How Subversion works

It stores changes



### How GitHub works

It stores data as snapshots of the project over time. It stores links to previous files



### Git Has Integrity

It uses hash to address the database. It uses SHA-1 which is 40 characters long

### The Three States

**Committed** ∷ It safely stored the data in local database

**Modified** ∷ The file has been changed but not saved in local database

**Staging** :: It is marked as modified file in its current version which will go to next snapshot

### Understanding Directories

**Git Directory ::** It stores the metadata and object based database for our project

**Working Directory** ∷ It uses a single check out from Git directory to our disk

**Staging Area ::** It is a simple file, generally contained in our Git directory, that stores information about what will go into our next commit.

## Setting Up GitHub

**Global Username**

git config –global user.name “Photon Khan”

**Global Email**

git config –global user.email [khan.photon@gmail.com](mailto:khan.photon@gmail.com)

**Global Editor**

git config –global core.editor code –wait

**Global Configuration List**

git config –list

**GitHub Help**

git help, git help [config], git [config] help

## Getting a Git Repository

### Initializing a Repository in an Existing Directory (Not in GitHub yet)

**Initializing Git Directory**

git init

**Create a Commands Text File**

dir > commands.txt

**Create a Readme File**

dir > README

**Creates a Folder**

mkdir > hello

### Cloning an Existing Repository (Exists in GitHub)

**Cloning a github file**

git clone git∷//github.com/mp5maker/notes