**GIT INTRODUCTION**

**What is git?**

Git is a version control system. That lets you manage and keep track of your source code history.

**What is Git Hub?**

**Git hub is a** cloud-based hosting service that lets you manage git repositories. If you have open source projects that use git, then GitHub is designed to help you better manage them…

**Why git?**

Git is a distributed version control system for tracking changes in source code during software development it is designed for coordinating work among the programmers.

But it can be used to track changes in any set of files.

**How we use git?**

**Git is VCS (version control system) tool...**

**Scm/vcs**

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Scm-->source code management

VCS-->version control system

To maintain a multiple versions of a file or directory...

Website

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index.html -->24-08-2017 v1

About home contact us

index.html -->30-08-2017 v2

About home contact we login signup

After some days

index.html v3

About home contact we (modified) login signup

VCS tools

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svn/p4/clear case/git/bit keeper

Free paid

svn/git stash/p4/clear case/bit keeper

**Why VCS?**

To track different versions of a file or directory...

**Who use this?**

All programmers, developers, system admins, deveops engineers, etc...

**Use in which files?**

All text based files...

Like .java, .html, .php, .etc...

**Where it cannot be used?**

It cannot help to track images, videos & sound files...

**History**

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VCS started in yr. 1972...

1972 scm (to track only one file)

Rcs (track multiple files but not track directories... and allow one user only)

Cvs (track multiple files and directories... and allow one user only)

2000 svn (track multiple files and directories... and allow multiple users)

2005 git (by Linus Torvalds)

**Svn**   **git**

-----------------------------------------------------------------

-> server-client based every project is independent

-> You always need net connection no need of continuous net connection

-> eat more disk space more burden less disk space and less burden

-> Centralized version control distributed version control

-> Backup need take on server backup can be taken by any client

* **Which platform it supports?**

Windows, Linux, Solaris, mac

**How to install git?**

**Linux os**

Yum -y install git

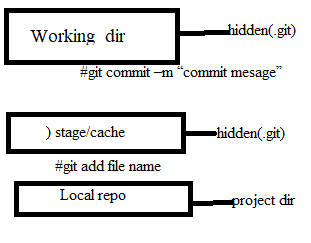
**How to work with git?**

Mkdir <project dir.>

cd <project dir.>

Git init -->it will initialize git and create empty structure under .git folder

**3 phases in git**



**Configure your git to work correctly?**

3 types of configuration:

**1) System**

/etc/gitconfig

git config --system

**2) User**

~/.gitconfig (or) /home/ramu/.gitconfig

git config --global

**3) Project**

.git/config

git config

**User level configuration**

git config --global user.name "ramu"

git config --global user.email "ramu@mycompany.com"

git config --global core.editor "vim"

git config --global color.ui true

**To see config list**

- git config --list

**Git basic commands:**

vi index.html

How can i check the status of a file?

git status

Red color: this color will us these are untraceable files

How to add a file to staging area?

git add <filename>

git add index.html

Greenclor: this color will tell us the files are in staging area

How to add a file to local repo area?

git commit -m "commit message"

How can i see commit messages?

git log

Commit: 97ee0928a45967554354136c142e95b104267c96

author:

date :

"commit messgage"

**What is sha1 number?**

It is a random and unique 40 character hexa decimal value (0-9, a-f)

How can we see the content of a commit?

git show <97ee0928a45967554354136c142e95b104267c96>

How can we see difference between 2 commits?

gitdiff <97ee0928a45967554354136c142e95b104267c96>..<b98ef0c23c439eb4cea83637abfc17c410727a74>

Commit 1 commit 2 commit 3

--------------------------------------------------------------------

97ee092 b98ef0c2 25f6abc

index.html index.html+f1 index.html+f1+extra/f2

(Difference is f1 file content) (Difference is extra/f2 file content)

git init

git config --global

git add <filename>

git commit -m "commit message"

git status

git log

git diff <commit1 sha1>..<commit2 sha1>

git show

git log --oneline

git log --since=2017-12-01

git log --until=2017-08-30

git log --author="ramu"

git log --grep="pattern name"

gitlog --oneline --author="ramu" --grep="f1"

**Branches**

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Master feature1 feature2 (another

Project)

index.html+extra index.html+extra+additional +java ,php

**What is branch?**

It is a series of commits along with the files/dir.

Master--->feature1

**What is the command it will use with branch?**

#git branch

It shows all the current branches in alphabetical order

\* Master

NOTE: (\*) represents you’re currently in that branch

**How to create a branch?**

git branch <new br name>

# git branch feature

**How to jump to other branch?**

git checkout <exiciting branch name>

#git checkout feature

**Create and checkout branch in one line?**

# git checkout –b <nem br name> it will create and switch to new branch

How can we see difference between two branches?

master feature

git diff <branch1>..<branch2>

ex:git diff master..feature

Master feature

(index.html+t1+f1+f2+f3+f4) (index.html+f1+f2+f3+f4+login+signup)

* **What is merging?**

Mixing of two branches is called merging.

We need to have two branches for merging

Master (target) <-----feature (source)

Git merge feature

How to delete a branch?

git branch -d <branch name>

Ex: git branch -d feature

Ex: git branch -D feature

Note: you’re not in the feature branch to delete the feature branch

**Merge conflict**

We face the merge conflict when we merge the 2 branches. If automatic merge fails conflict id generated so manually see the conflict file and resolve it

To write content while merge conflict use

-> git commit -a

git branch

git branch <new br name>

git checkout <br name>

git checkout -b <new br name>

git diff <br1 name>..<br2 name>

git merge <br name>

git branch -d <br name>

git branch -D <br name>

**git rm & git mv**

How to add and commmit a file(s)/dir(s) in a single step?

git commit -am "<commit name>"

NOTE: it’s applicable for existing files...

How to change commit message and add modified file?

git commit --amend -m "<commit message>" <pfile name>

**How to get back deleted file?**

rm <file>

git checkout <file>

**How to delete a file permanently?**

git rm <file>

**How to rename in git?**

git mv <file> <rename file>

**Git ignore**

To ignore the unneccery file in a project...

Java c

.class .obj

.back

System level

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/etc/gitignore

Project level

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vi .gitignore

\*.log

\*.obj

\*.jpeg ignore these files

\*.png

\*.php

\*.class

!index. Php

[abc].html

Save and exit

How to erase your history?

git reset --soft <sha1 number> -->remove data from local\_repo

git reset --mixed <sha1 number> -->remove data from local\_repo & cache area

Git reset --hard <sha1 number> -->remove data from loca\_repo, cache area and working\_dir also

**What is head?**

Head is a pointer which points to the top commit...

Top commit

**25f5996 <--head**

**Git stash**

**What is stash?**

Stash is temporary area under git...

**Why stash?**

To store temporary files...

**How we use stash?**

What are the conditions to store the files in to stash area?

a) The files must and should in the cache/staging area

What are the commands use to store the data in the stash?

->git stash save <"message">

**How to see stash list?**

->git stash list

Stash@{0} : <branch name> <message>

What are the commands use to copy the data into branches?

->git stash apply <stash#> ->copy paste

->git stash pop <stash#> -> cut paste

How to delete the stash area?

->git stash drop <stash#> -> delete the particular stash

->git stash clear ->delete the entire stash list

**Git server**

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1) Internet service (to connect to your server if it is out of your office)

2) Intranet service (To next to your server with in your office)

Public private

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Git hub git bucket, bit bucket

Git bucket

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It is a private git server.

Pre-requisites

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Java

sudo yum -y install java-1.8.0-openjdk

How to download git bucket?

wget <url of git bucket>

Server side

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How to login to git bucket interface?

Default

user :root

password :root

How to change user password?

Goto user profile and change password if you want

How to create user?

Under administration create users

Client side

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Setup remote in the client side

->git remote add <alias name> <URL>

->git remote add origin http://192.168.43.139:8080/git/ramu/techadda.git

How to see remote server name?

git remote

git remote -v (to see the url of remote)

How to remove a remote server?

git remote rm <alias name>

How to push the data into remote server?

->git push -u <alias name> <branch name>

->git push -u origin master

Master (local) ------------->master (server)

Extra (local) --------------->extra (server)

How to pull the data from the server?

Method 1

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Fetch and merge

->git fetch

->git merge origin/master

Method 2

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->git pull <alias name> <branch name>

->git pull origin master

clone

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->git clone http://192.168.43.139:8080/git/ramu/techadda.git

clone the server data to the local machine