GIT ARCHITECTURE AND GIT CONFIGURATION
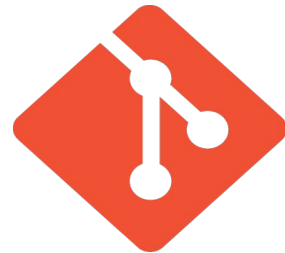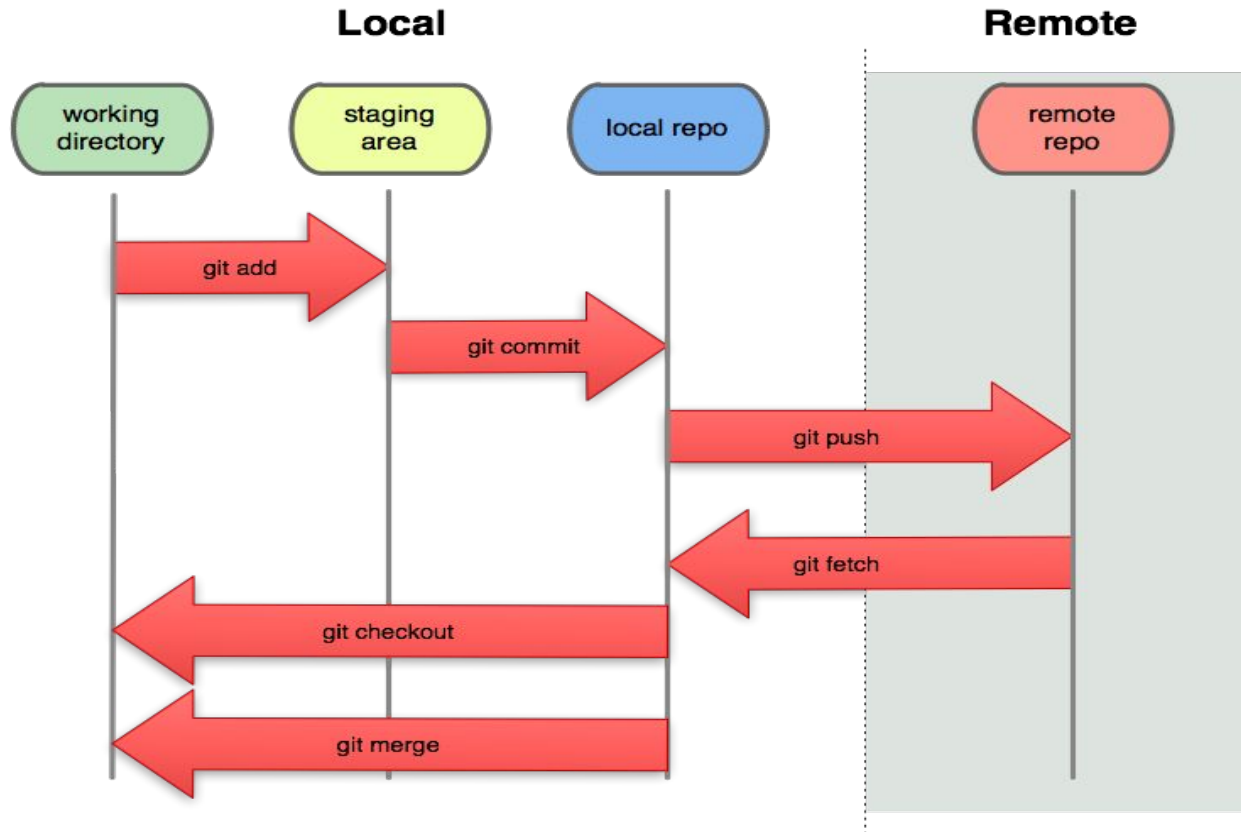
GIT ARCHITECTURE -

❖ After installation, first step in git is to set up Git Configuration System

❖ Command **git config** is used to set the git configurations on system

❖ Git Configuration is setup at three levels -

System	/etc/gitconfig	Applicable for all users on all Projects (Repositories)
User	~/.gitconfig	Applicable on user profile for his all projects (Repositories)
Local	/.git/config	Applicable for Particular Project (Repositories)

Git Configuration Precedence -

1st → Local   →   git config --local [options]

2nd → user   →   git config --global [options]

3rd → system   →   git config --system [options]

Git Set Environment Variables -

Q. How to set the git config environment variables a global level ?

❖ We need to use **git config** command along with flag **--global** to set the global environment variables.

❖ By default we need to set user.name and user.email environment variables after git is installed.

 # git config --global user.name "test"

● This sets the user.name for all projects

 # git config --global user.email "test@gmail.com"

● This sets user global email address for all projects

Q. How to check the git config settings ?

git config --list

Q. How to start the tracking of a Project ?

Step 1 -   Go to Project folder

Step 2 -   # git init

- This will init the Project tracking by Git

- **Git will only track files and not empty folders

- It will create a .git folder in that Project Directory, we can check that by using # ls -la

Example - For git init in c++ folder that already exists

```
[root@localhost ~]# mkdir c++
[root@localhost ~]# cd c++
[root@localhost c++]# git init
Initialized empty Git repository in /root/c++/.git/
[root@localhost c++]# ls -la
total 0
drwxr-xr-x. 3 root root  18 Apr 22 14:41 .
dr-xr-x---. 6 root root 192 Apr 22 14:41 ..
drwxr-xr-x. 7 root root 119 Apr 22 14:41 .git
[root@localhost c++]#
```

```
[root@localhost c++]# cd .git
[root@localhost .git]# ls -la
total 12
drwxr-xr-x. 7 root root 119 Apr 22 14:41 .
drwxr-xr-x. 3 root root  18 Apr 22 14:41 ..
drwxr-xr-x. 2 root root   6 Apr 22 14:41 branches
-rw-r--r--. 1 root root  92 Apr 22 14:41 config
-rw-r--r--. 1 root root  73 Apr 22 14:41 description
-rw-r--r--. 1 root root  23 Apr 22 14:41 HEAD
drwxr-xr-x. 2 root root 242 Apr 22 14:41 hooks
drwxr-xr-x. 2 root root  21 Apr 22 14:41 info
drwxr-xr-x. 4 root root  30 Apr 22 14:41 objects
drwxr-xr-x. 4 root root  31 Apr 22 14:41 refs
[root@localhost .git]#
```

Q. How to start a new Project with git init ?

- Use command # git init <project_name>

- It will create directory and initiate .git folder for tracking the files

Example :

```
[root@localhost ~]# git init java_project
Initialized empty Git repository in /root/java_project/.git/
```

Case Study :

Let us say, we started tracking wrong project or git init command was issued in a wrong folder. How to fix this ?

Fix :

Step 1 : go to project folder

Step 2 : # rm -rf .git

Note - Use the same command to stop tracking the Project by Git.

Case Study : To understand git config files a global level and local level -


```
[root@localhost ~]# cat .gitconfig
[user]
        name = java
        email = java@gmail.com
[root@localhost ~]# cd c++
[root@localhost c++]# cd .git
[root@localhost .git]# cat config
[core]
        repositoryformatversion = 0
        filemode = true
        bare = false
        logallrefupdates = true
[user]
        name = java1
        email = java1@gmail.com
[root@localhost .git]#
```

Q. How to check the Configuration git variables on a Project ?

git config --list

Q. How to set the Preferred Editor using git for a Project ?

Example :

git config --global core.editor "vim"

- It sets the editor vim at global level

Q. How to get the help on git commands ?

git help <options>   Example : # git help config

Or

git [option] --help   Example : # git add --help

Q. How to set the color high lighting in Git ?

git config --global color.ui true

git config --global color.status auto

git config --global color.branch auto

Q. How to set the Preferred Editor using git for a Project ?

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- It sets the editor vim at global level

Q. How to set alias to git commands?

Syntax :   # git config --global alias.<alias_name> <git_command>

Example :

git config --global alias.st status

git config --global alias.ct commit

Expected Interview Questions -

Q. How to check configuration or environment variables of a project ?

Q. How to set the environment variables for global level ?

Q. What is meaning of git config --global ?

Q. Explain about the architecture of git ?

Q. Is it possible to initiate empty repository using git ?

Case Study :

Q . Let us say we have initiated the git repo already, what happens when we try to initiate it ?

Q. A project was completed using VCS git, now I want to stop the tracking of git, what to do ?

THANK YOU