① What is a Git?

Ans. Git is a Version Control System. It is very popular VCS. It was created by Linus Torvalds and has been maintained by Jonio Hamano

② What do you understand by the term 'Version Control System'?

It is a system, where it records all the changes to a file or set of files, so that we can go back to the previous version Later i.e., by every time we made changes in the code of file, we created a new version. VCS keeps the records of all the version, so that we can access all the version whenever we need.

③ Q: What is Git hub?

It is an example of Distributed Version Control System. It is a 'Git Server'

→ It is a repository
→ It is the largest host of source code in the world
→ It is used to store and maintain the source code of the project.

④ Mention some popular Git hosting services
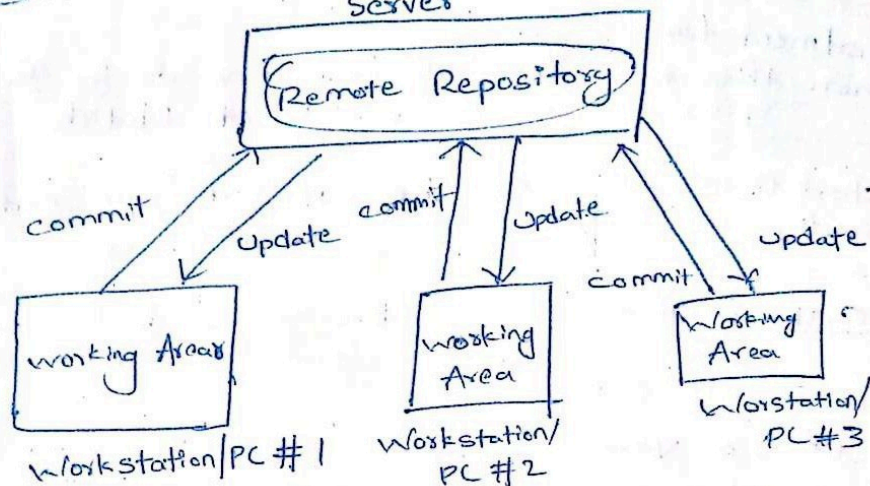Ans. Github, Bitbucket, GitLab, GitBucket
       Perforce, Gitblit.
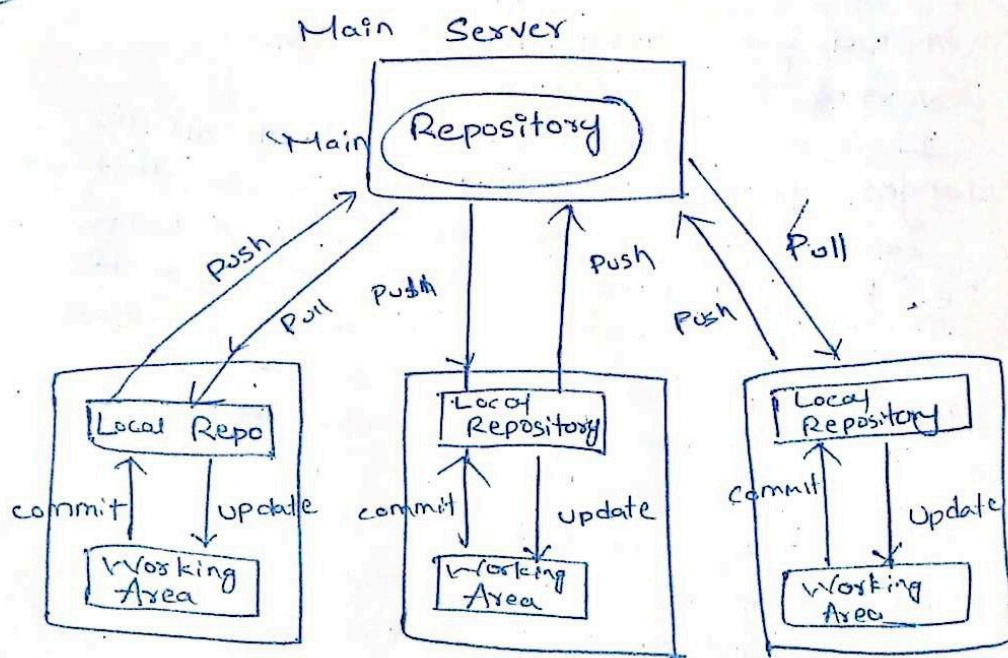
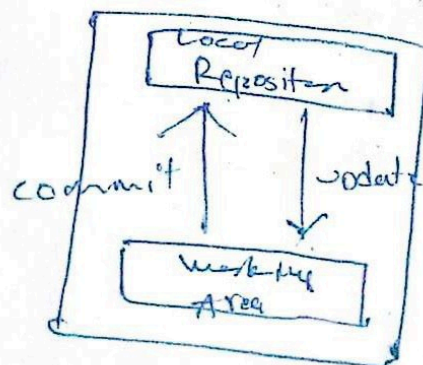⑤ Different types of Version Control systems?
   ⓐ CVCS   ⓒ LVCS
   ⓑ DVCS

ⓐ Centralised Version Control system

Server

Remote Repository

commit   Update   commit   Update   update

                                    commit

working Area   working   Working
                 Area   Area

                                  Workstation/
                                  PC #3
Workstation/PC #1   Workstation/
                     PC #2

ⓑ Distributed Version Control System

Main Server

Main   Repository

Push   Push   Pull

   Pull Push   Push

Local Repo   Local   Local
                Repository   Repository

commit Update commit Update   commit   Update

Working   Working   Working
Area   Area   Area

ⓒ

Local
Repository

commit   update

Working
Area

(6) What benefits come using Git

→ Keeping the record of changes to the file or set of files made.

→ having the back up files.

→ Developers don't check out the latest snapchats of files (every time they take file from main repository) rather they fully mirror the repository including its full history.

→ If the main server dies, then no need to worry that in local ~~reposity repository we have a~~ system will maintain a copy of ~~or~~ main repository which has full backup data.

→ If the remote repository is down, the developer make changes to the local repository when the main repository is up, the developer can push the ~~local~~ code in the local reposity to remote repository.

(7) What is a Git repository?

~~It is~~ Repository is nothing but a logical space where all the coded files of project can be stored and maintain them. It will also record the changes to the files made by developers.

Git repository is nothing but a repository created in the Git main server.

Git repository is used to store and maintain the coded files of project by the developers where they can effectively collaborate i.e., sharing of files and ~~be~~ also having a backup of that files

It also have the track of files and ~~vesions~~ versions.

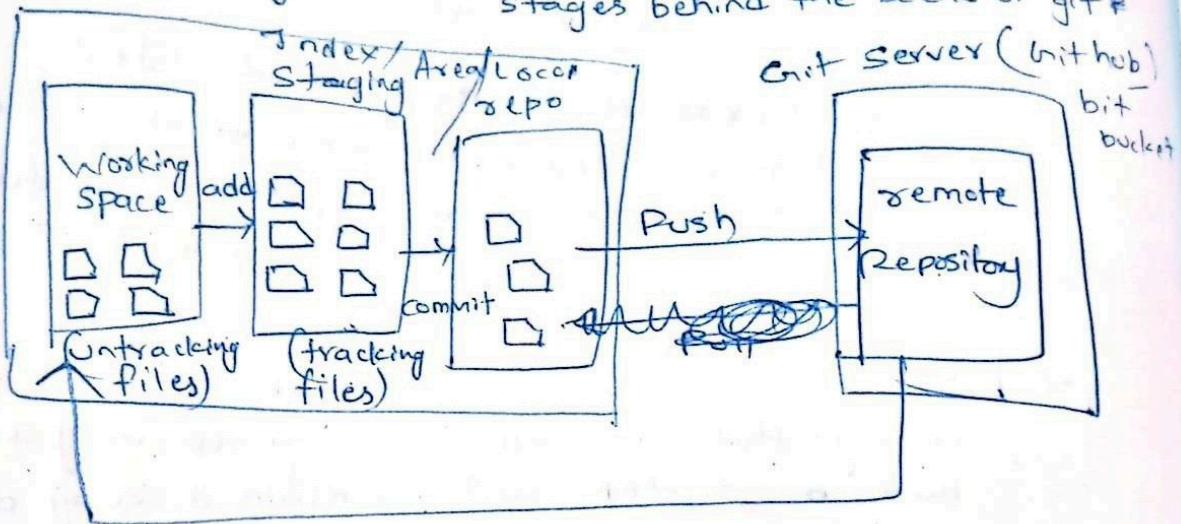(8) How can you initialize a repository in Git

By using ~~e~~ git init command we can create a repo in Git.

Git Architecture

Current working space :- :D/ git practice/ ~~file~~ folder name

$ git init we ~~are~~ divide this folder into 3 stages behind the scene of git

- Working Space (untracking files)
- Index/ Staging Area/Local repo (tracking files)
- add →
- commit
- Git Server (github) bit bucket — remote Repository
- Push
- Pull

→ Developer develop the code in working Area

→ If any files ~~move~~ want to move to remote server then it should be from local repo only.

→ If any files want to move to a local repo, then it should be from staging Area only, we can send the files from working Area to Local repo

→ develops should develop the code from working area then ——→ Staging Area
untracked files   tracked file

git add

staging area ——→ Local repo

git commit

Local repo ——→ Remote repo.