Git is the most popular tool among all the DVCS tools.

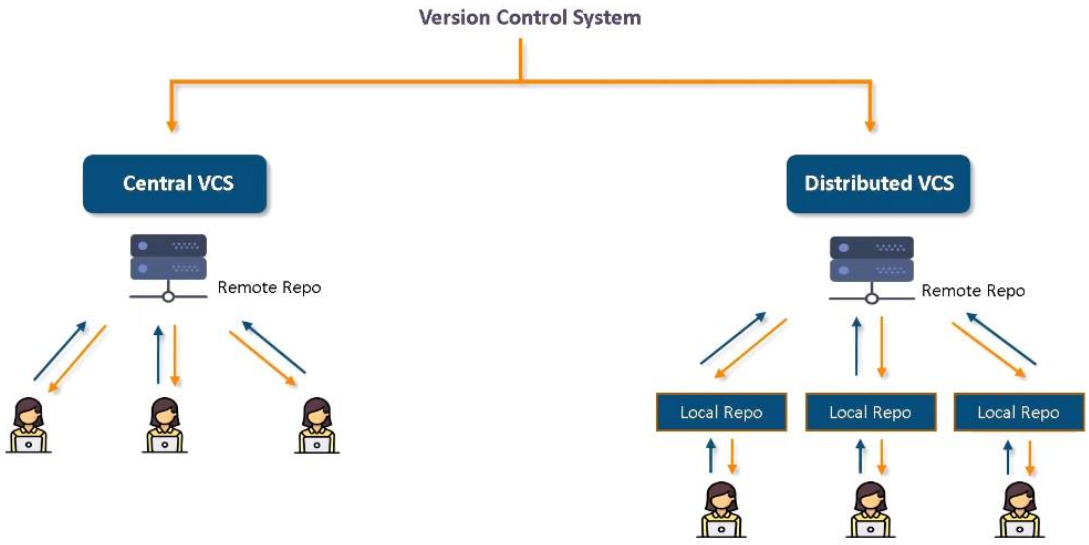
Git is a version-control system for tracking changes in computer files and coordinating work on those files among multiple people. It is primarily used for source-code management in software development, but it can be used to keep track of changes in any set of files.

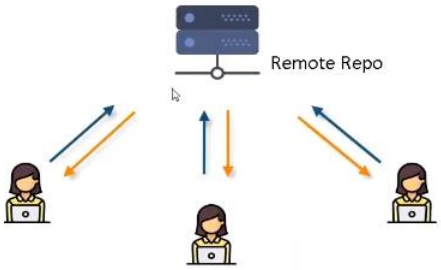
Version control is a system that records/manages changes to documents, computer programs etc over time. It helps us tracking changes when multiple people work on the same project

GIT Features:

- Versioning is Automatic
- Team Collaboration is simple
- Easy Access to previous Versions
- Only modified code is stored across different versions, hence saves storage

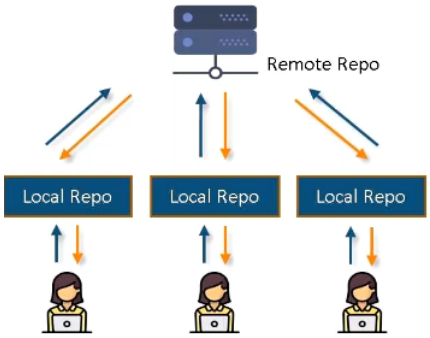
TYPES OF VCS





Centralized VCS

- Centralized Version Control System has one single copy of code in the central server
- Developers will have to "commit" their changes in the code to this central server
- "Committing" a change simply means recording the change in the central system



Distributed VCS

- In Distributed VCS, one does not necessarily rely on a central server to store all the versions of a project's file
- Every developer "clones" a copy of the main repository on their local system
- This also copies, all the past versions of the code on the local system too
- Therefore, the developer need not be connected to the internet to work on the code

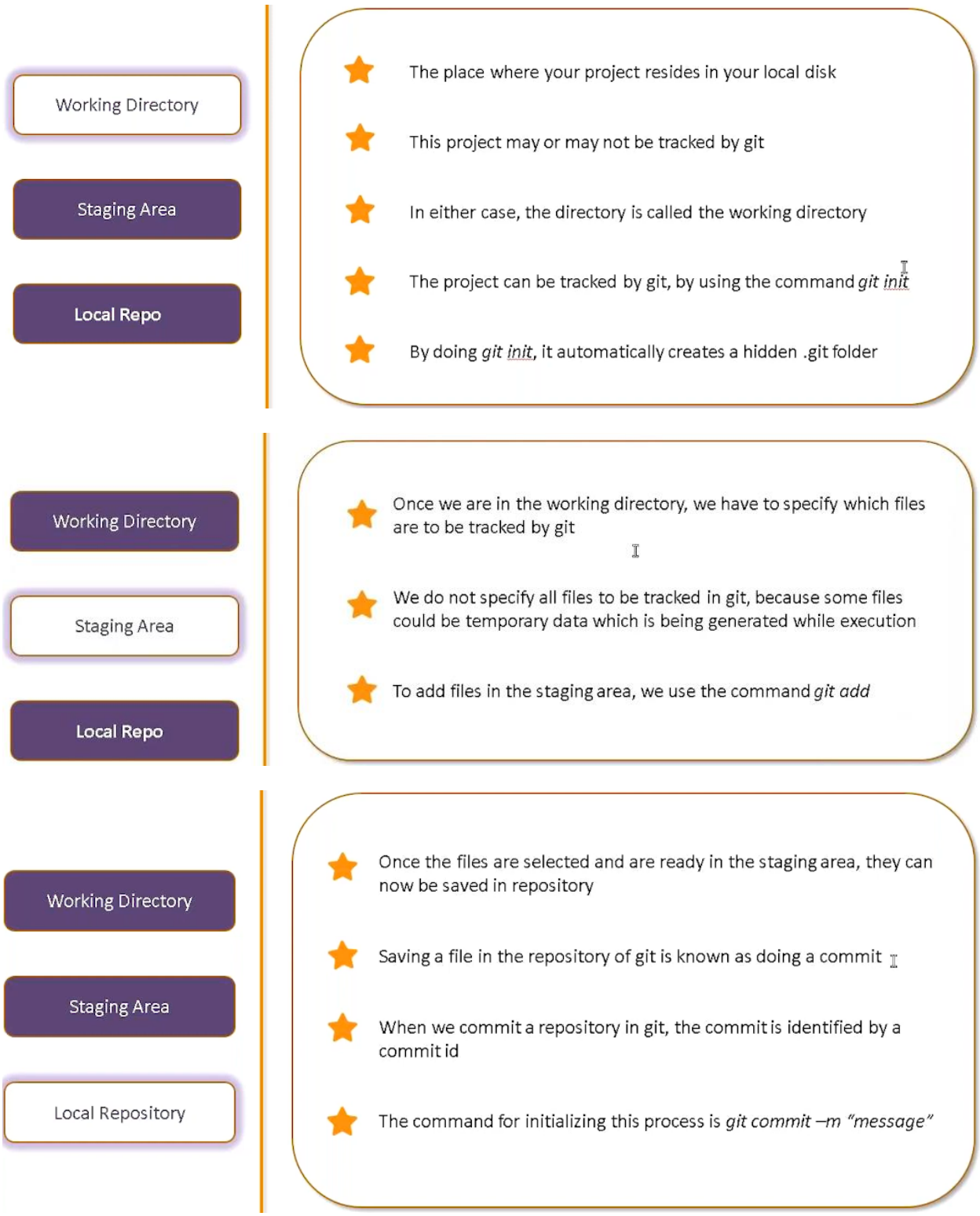
Distributed VCS

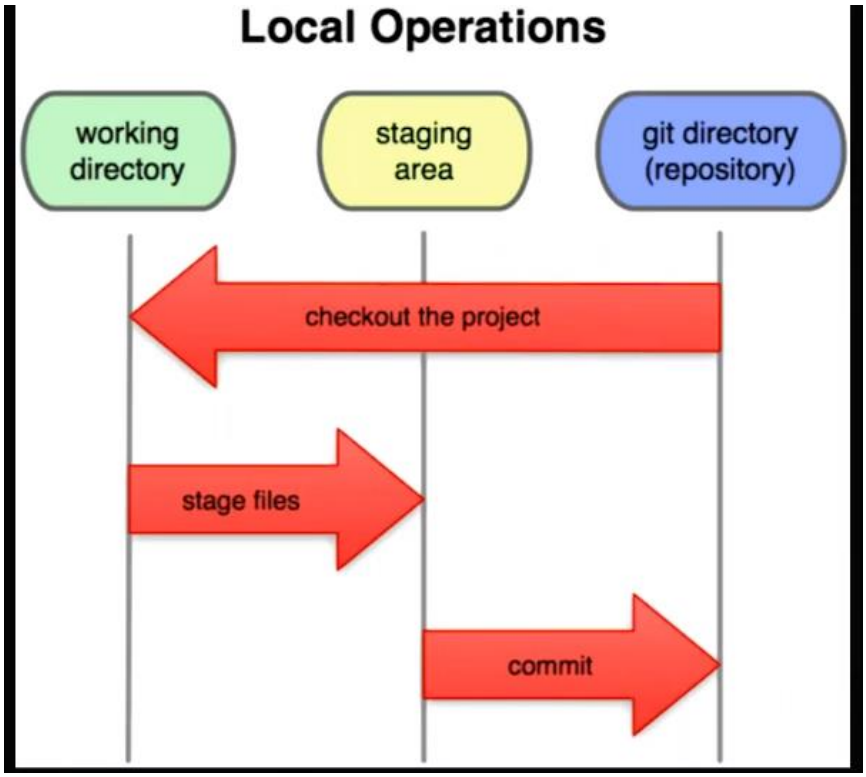
- Everything except pushing and pulling can be done without Internet Connection
- Every Developer has full version history on local hard drive
- Committing and retrieving action is faster since data is on local drive
- Not Good for storing large files which are binary in nature, this would increase the repo size at every commit
- If a project has a lot of commits, downloading them may take a lot of time

Centralized VCS

- Needs a dedicated internet connection for every operation
- Developers just have the working copy and no version history on their local drive
- Committing and retrieving action is slower since it happens on the internet
- Good for storing large files, since version history is not downloaded
- Not dependent on the number of commits

GIT LIFE CYCLE:




Local Operations
working directory
staging area
git directory (repository)
checkout the project
stage files
commit