1. List out the key difference between a centralized version control system and distributed version control system.

Centralized version control system:

Centralized VCSs keep the history of changes on a central server from which everyone requests the latest version of the work and pushes the latest changes to. This means that everyone sharing the server also shares everyone’s work. Sourceforge.net uses this type of versioning in their projects.

Distributed centralized version control system:

Distributed VCS, everyone has a local copy of the entire work’s history. This means that it is not necessary to be online to change revisions or add changes to the work. “Distributed” comes from the fact that there isn’t a central entity in charge of the work’s history, so that anyone can sync with any other team member. This helps avoid failure due to a crash of the central versioning server.

1. List down any two centralized version control system and 2 distributed version control system.

Centralized VCS: CVS, Perforce, SVN

Distributed VCS: Git, Mercurial.

1. What are the different states of a file in the Git VCS

Committed: Committed means that the data is safely stored in your local database.

Modified: Modified means that you have changed the file but have not committed it to your database yet.

Staged: Staged means that you have marked a modified file in its current version to go into your next commit snapshots.

1. What are the advantages of git VCS over other VCS:

Advantages of git VCS:

* Distributed model: This means your work is your own. You can let others see only what is necessary. Not everything has to be public
* Branching and merging are easy: Branching is a walk in the park. It feels like a natural part of the workflow. They are cheap (fast and consume very little space) so that you can branch whenever you want.
* Workflow is flexible: Compared to Centralized VCS, git has the qualities that allow to choose your own workflow. It can be as simple as a centralized workflow to as hierarchical as the dictator-lieutenant workflow.
* Data integrity is assured: Because git uses SHA1 trees, data corruption due to external reasons can be easily detected.

Other VCS:

* Still contains bugs relating to renaming files and directories
* Insufficient repository management commands
* Slower comparative speed
* No merging of two parents
* Extension-based rather than script ability.