VERSION CONTROL TOOLS

Version control is a system that records **changes** to a file or set of files over time so that you can recall specific versions later.

GIT :

PROS:

- Distributed model: Advantages to the distributed model, such as the speed since most everything is local and possibility of working offline
- Branching and merging are easy: 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.
- Data integrity is assured: Because git uses SHA1 trees, data corruption due to external reasons can be easily detected.

CONS:

- Git is less preferred for handling extremely large files or frequently changing binary files .
- GIT does not support 'commits' across multiple branches or tags.

MERCURIAL :

PROS :

- You have a full copy of the repository on your computer and you don't have to rely on server backups in case a server goes down.
- You can work offline and push changes afterwards.
- Mercurial organizes revisions as changesets which allow you to easily branch/merge the code base.

CONS :

- Addons must be written in python
- No partial checkout
- Rollback command only undo last commit, need to use other extensions

SVN :

PRO:

- It has linear,central repository and management.Lacks too complex features, almost every developer is familiar with it, so everyone knows what toexpect and how to use it.
- Binary files handled efficiently
- Incremental revision numbers
- Gives you a better indication on how old a specific revision is without needing any more details.
- Easy to understand externals
- Free-form versioned metadata

CON:

- Branches and Conflicts are difficult.
- SVN is hard to use on multi-topics worlflows.Branches exist but are often not used because of the fear of the merge.
- Underlying model is totally flawed
- It is nearly impossible to revert a big repository to an older version, unlike GIT.
- Does not forgive errors

CVS

CONS:

- CVS is a version control system. It can record the history of your source files.
- With CVS, you can easily retrieve old versions to see exactly which change caused the bug. This can sometimes be a big help.
- CVS stores all the versions of a file in a single file in a clever way that only stores the differences between versions.

PROS:

- CVS cannot determine when simultaneous changes within a single file, or across a whole collection of files, will logically conflict with one another.
- Your managers and project leaders are expected to talk to you frequently enough to make certain you are aware of schedules, merge points, branch names and release dates.
- CVS does not dictate how to use disk space in the checked out working directories.

BAZAAR

PROS:

- It is ideal for a variety of uses.
- Bazar also offers a more advanced and detailed set of commands, quality IDE support that is commonplace for CVS and Subversion.
- Bazaar offers customizable feature set perfect for a range of projects.

CONS:

- It is new and not mature enough as a version control system.
- It lacks IDE support like robust systems such as CVS or SVN.