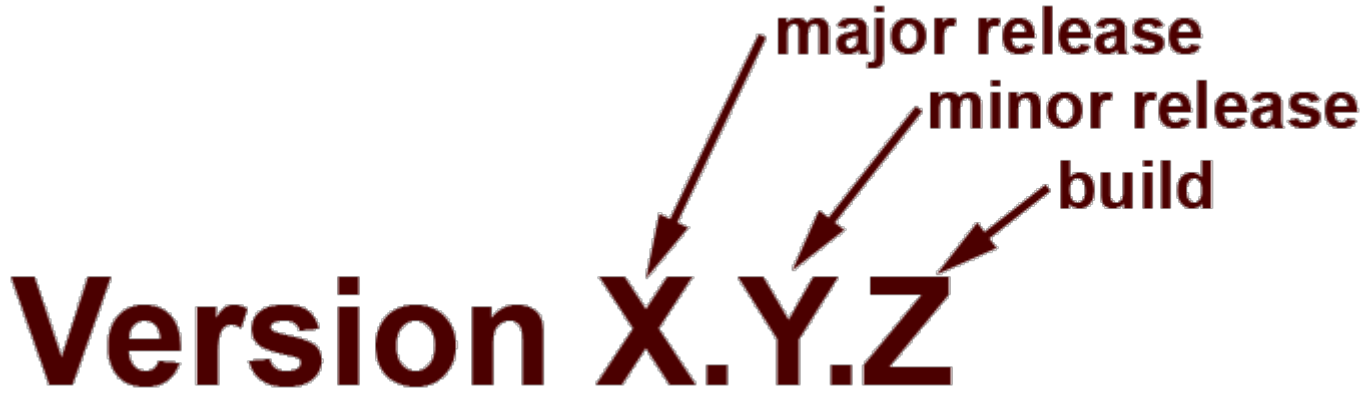

Lecture 7.3 – Code Versioning Systems

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Outline

- Versioning systems and why we need them
- How code versioning works
- CVS terminology
- Demo

Versioning Systems

-What?

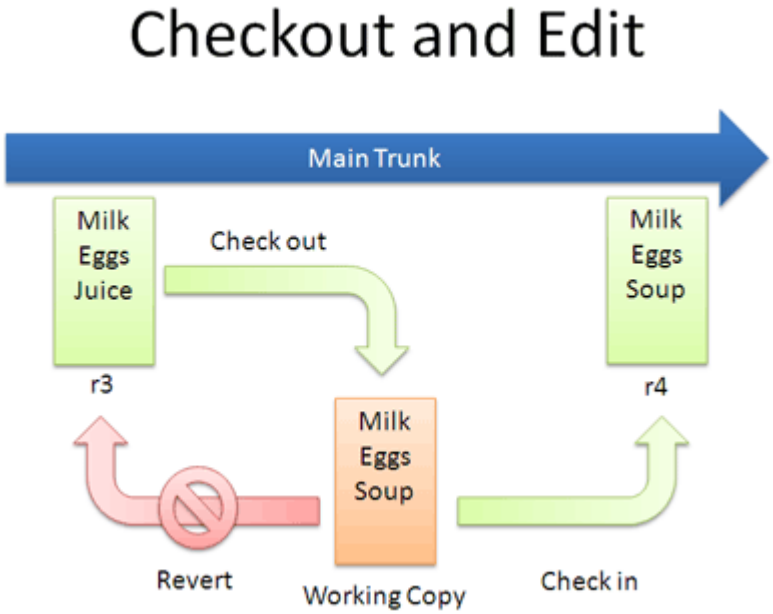
- Version control = Revision control = Source control
- Managing changes to documents, computer programs, large web sites, and other collections of information
- Revision numbers: letters or numbers used to represent each change

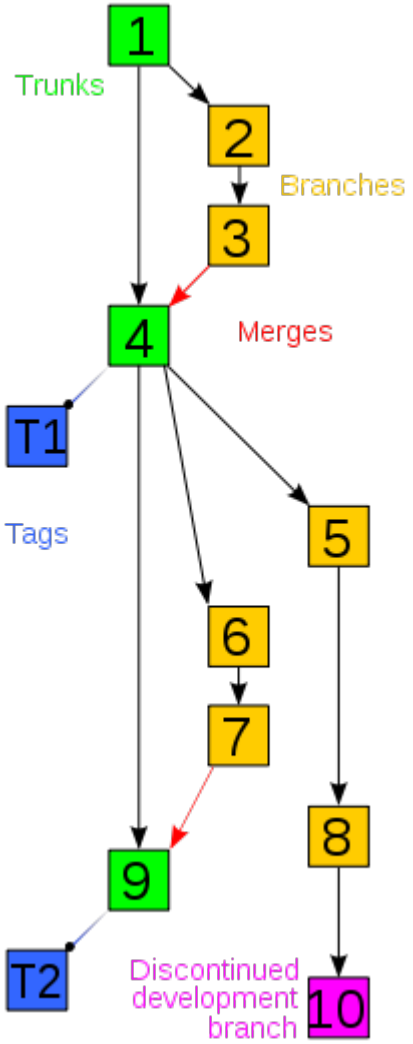
-Why?

- Work simultaneously on big projects and keep track of changes
- Be able to simply revert back to a specific checkpoint/milestone in any project
- Create necessary redundancy by duplicating codes and resources to avoid data loss

Versioning Systems

-How?





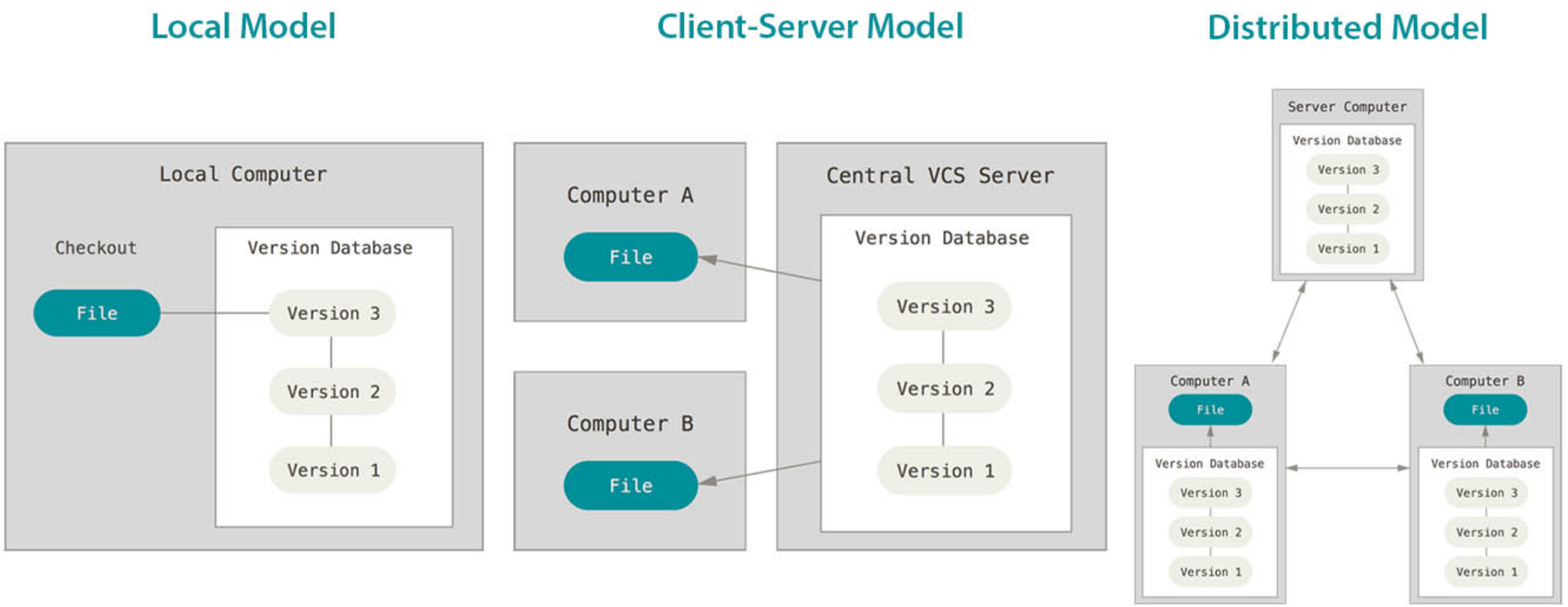
Code Versioning Systems

-Types

-Local (Revision Control System (RCS))

-Centralised (Concurrent Versions System (CVS), Subversion (SVN), Vesta)

-Decentralised (Git, Mercurial, Bitbucket)



Code Versioning Terminology

ranch: A set of files under version control may be branched or forked at a point in time so that, from that time forward, tw

opies of those files may develop at different speeds or in different ways independently of each other.

runk: The unique line of development that is not a branch (sometimes also called Baseline, Mainline or Master)

ull, push: Copy revisions from one repository into another. Pull is initiated by the receiving repository, while push is initia

y the source. Fetch is sometimes used as a synonym for pull, or to mean a pull followed by an update.

erge: A merge or integration is an operation in which two sets of changes are applied to a file or set of files.

ommit: To commit (check in, ci or, more rarely, install, submit or record) is to write or merge the changes made in the wo

opy back to the repository.

lone: Cloning means creating a repository containing the revisions from another repository. This is equivalent to pushing

ulling into an empty (newly initialized) repository.

heckout: To check out (or co) is to create a local working copy from the repository. A user may specify a specific revisio

btain the latest.

ag: A *tag* or *label* refers to an important snapshot in time, consistent across many files.

Git

Created by Linus Torvalds and the team working on Linux kernel development in 2005

Distributed revision control system

Repositories can be published via HTTP, FTP, rsync (until Git 2.8.0[28]), or a Git protocol over either a plain socket, or ssh

Git servers

- Github: A website that offers repository hosting service where you can upload a copy of you Git repository.
- Bitbucket: A web-based hosting service for projects that use either Git or Mercurial revision control systems.

Demo

References

1] https://en.wikipedia.org/wiki/Version_control

2] https://git-scm.com/book/en/v2/Getting-Started-About-Version-Control