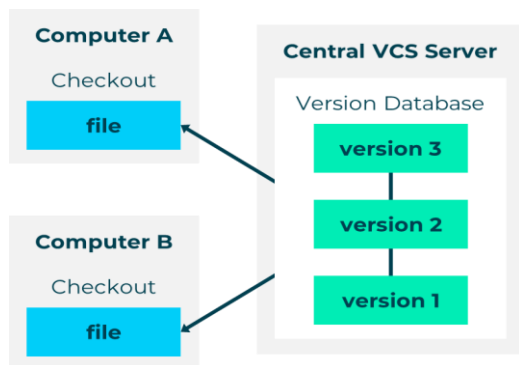SOURCE CONTROL

QA

SOURCE CONTROL

- Centralise all code changes and additions to one code repository

- Allow for simple and effective collaboration within development teams

- Control the integration of new code into the codebase

- Track changes from the entire team over the full lifetime of the project

- Revert code back to previous versions

2

QA Types of Version Control Systems

Centralised Version Control System (CVCS)

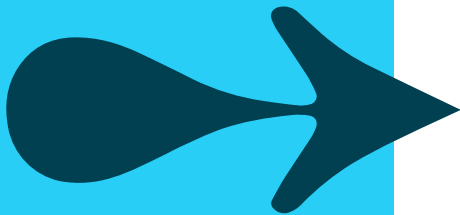**Distributed Version Control System (DVCS)**

3
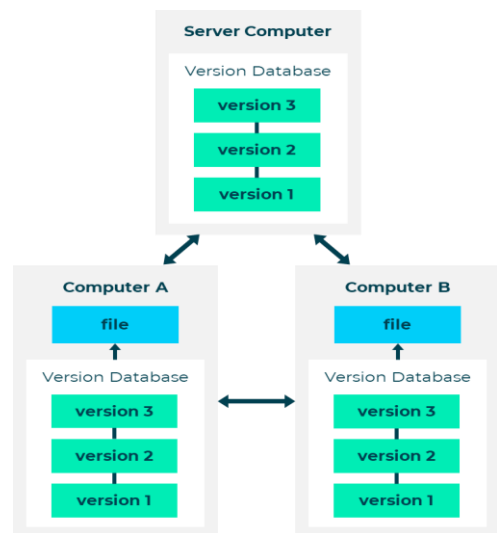
SCM TOOLS

- Git
- Mercurial
- Subversion (often abbreviated to SVN)
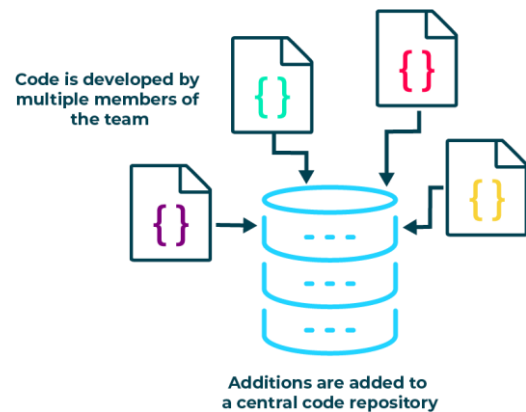- CVS
- Perforce

REPOSITORY HOSTING SERVICES

- GitHub
- GitLab
- Bitbucket
- SourceForge
- Launchpad
- AWS CodeCommit
- Azure Repos (as part of Azure DevOps)
- Google Cloud Source Repositories
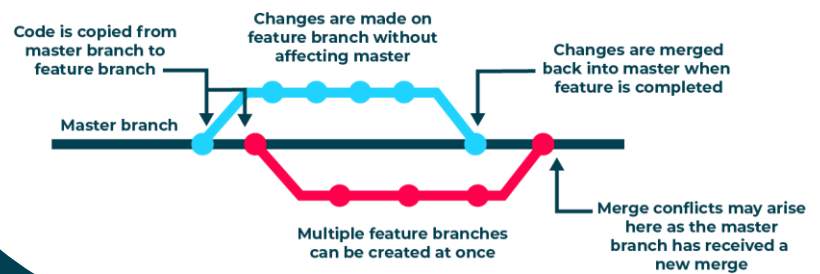
5

Continuous Delivery

- Store code in a central repository
- Track changes over time
- Create code branches so that additions are made in isolation from stable code
- Merge new code into a stable release branch, known as the master branch
- Integrate with CI/CD automation tools (such as Jenkins and CircleCI) such that code will be built and tested as it is generated and pushed to the repository

Code is developed by multiple members of the team

{}

{}

{}

{}

Additions are added to a central code repository

6

QA

BRANCHING

- Several people working on the same code base causes problems

- Feature branch model

Code is copied from
master branch to
feature branch

Changes are made on
feature branch without
affecting master

Changes are merged
back into master when
feature is completed

Master branch

Multiple feature branches
can be created at once

Merge conflicts may arise
here as the master
branch has received a
new merge

7

7

QA

CODE TRACKING

- Allows development teams to keep track of all changes made to a project over time

- Makes it easy to revert if necessary

8