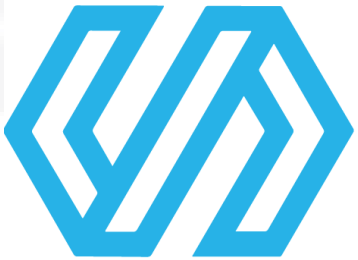
Version Control Systems



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Agenda

1. Recap
2. What is VCS?
3. Why we need VCS?
4. Branching
5. Merging
6. VCS types
7. CVCS and DVCS differences

Agenda

8. Popular VCS
9. GIT
10. GIT installation
11. Work with GitHub
12. Git commands
13. Exercises

Recap

1. What is Quality?
2. Difference between QA and QC
3. Principles of testing
4. Expected result sources
5. What is a bug? When we have a bug?

What is VCS?

- ✓ It is a software tool
- ✓ Version control (aka Revision control aka Source control)
- ✓ Keep track of code/documentation/test changes
- ✓ Allows “versioning” in easier and reliable way
- ✓ Make the team work in IT possible and effective

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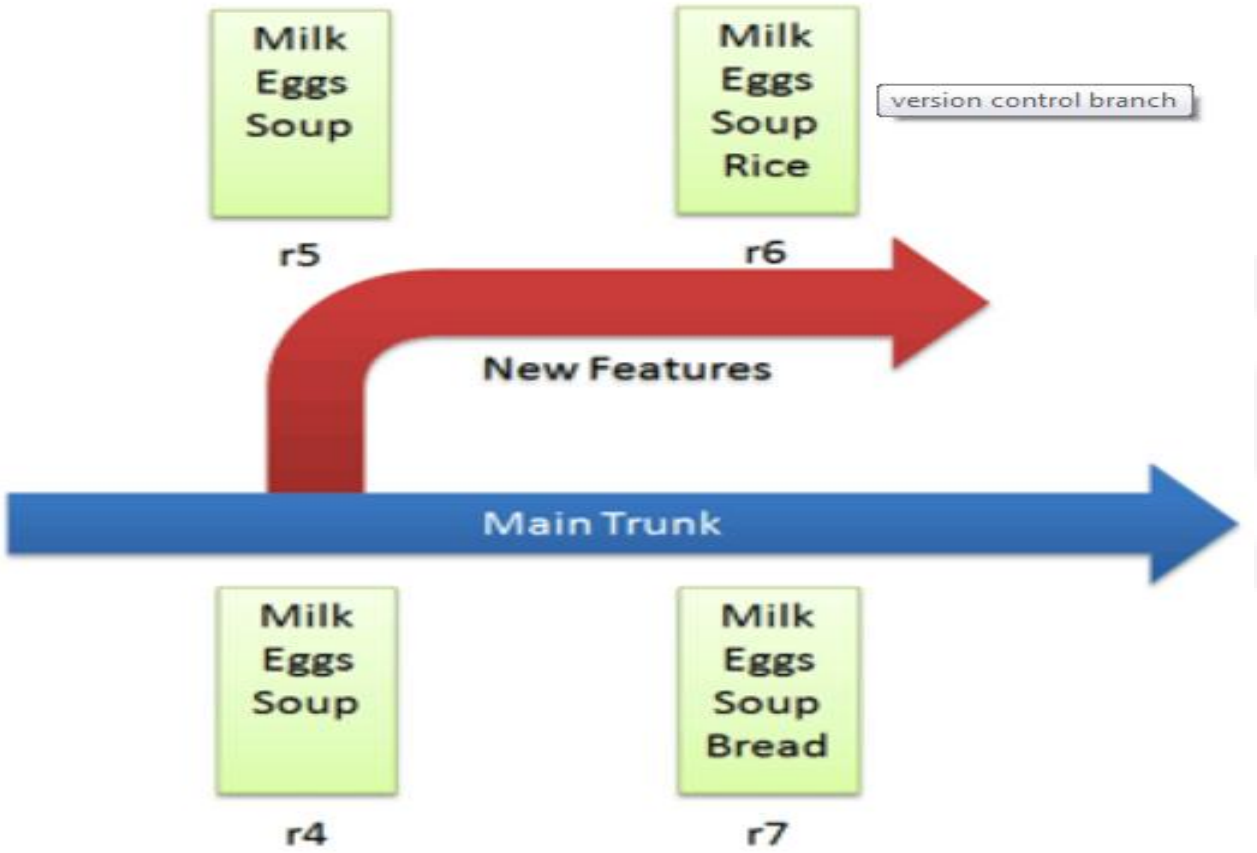
Why we need VCS?

1. Keeps history of every change
2. Working on a big projects is impossible without VCS
3. “Play” with file changes and undo
4. Play in a sandbox
5. Traceability
6. Ownership
7. Branching and merging

Branching



Source: https://betterexplained.com/articles/a-visual-guide-to-version-control/

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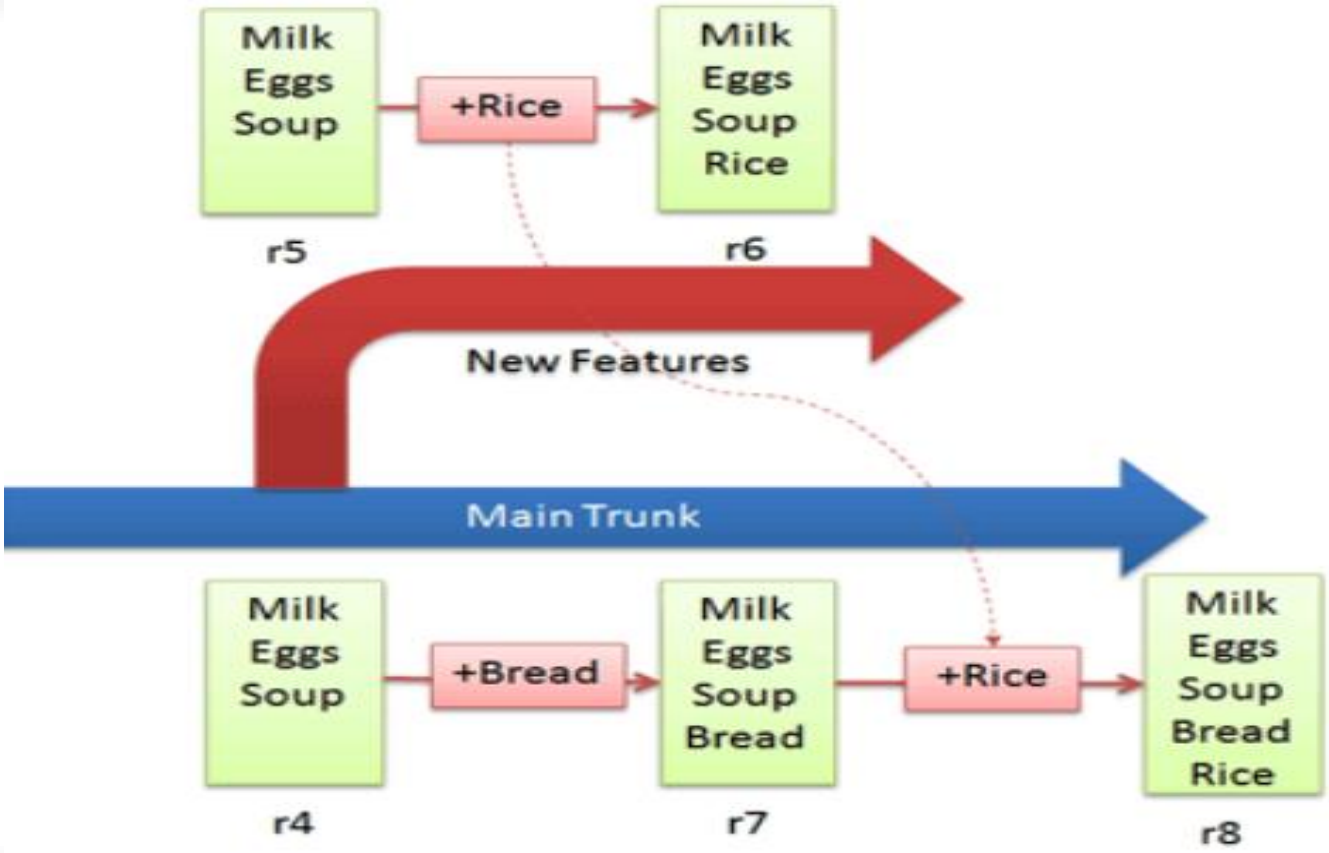
Merging



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VCS types

1. Centralized VCS (CVCS)
2. Distributed VCS (DVCS)

CVCS and DVCS differences

- ✓ Repository of CVCS is located on one central server and users has access to it (only snapshot on local machine)
- ✓ DVCS – everybody has a full local copy on the local machine instead of a central server (more hard drive required)
- ✓ DVCS allows working offline
- ✓ CVCS concept is easier than DVCS

CVCS and DVCS differences

- ✓ CVCS has more control over the users and administration
- ✓ DVCS operations are faster than CVCS
- ✓ DVCS branching concept is easier
- ✓ DVCS - you can create your main repository from each local copy

Popular VCS

CVS

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GIT

- ✓ First developed by Linus Torvalds
- ✓ Free open source DVCS

GIT installation

Windows

https://git-scm.com/download/win

Unix/Linux

https://git-scm.com/download/linux

Work with GitHub

1. How it works?
2. Create an account in GitHub
3. Create your first repository
4. Clone your repository on local machine
5. Start adding changes

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Git commands

git init - This creates a new subdirectory named .git that contains all of your necessary repository files — a Git repository skeleton. At this point, nothing in your project is tracked yet.

git clone URLtoRepository - If you want to get a copy of an existing Git repository — for example, a project you'd like to contribute to

git clone URLtoRepository localFolder - If you want to clone the repository into a directory named something different than default

Git commands

git add filename - In order to begin tracking a new file, you use this command

git add . - In order to begin tracking all untracked files, you use this command

git status - to determine which files are in which state

git commit –m “some comment here” - submitting files to the repository (the local one); in other VCS it is often referred to as “checkin”

git checkout -- filename – discard changes in the file

Git commands

git pull - automatically fetch and then merge that remote branch into your current branch

git push origin master - When you have your project at a point that you want to share, you have to push it upstream

git branch nameOfTheBranch – creates new branch

git checkout nameOfTheBranch- switches to the branch

git reset --hard - removes staged and working directory changes

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Exercises

1. Create your GitHub repository
2. Play with Git commands and work on a same repository in teams

Q & A

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THANK YOU

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