Bug Tracking and Version Control Systems

Performing Tests and Reporting Issues

SOFTWARE UNIVERSITY FOUNDATION

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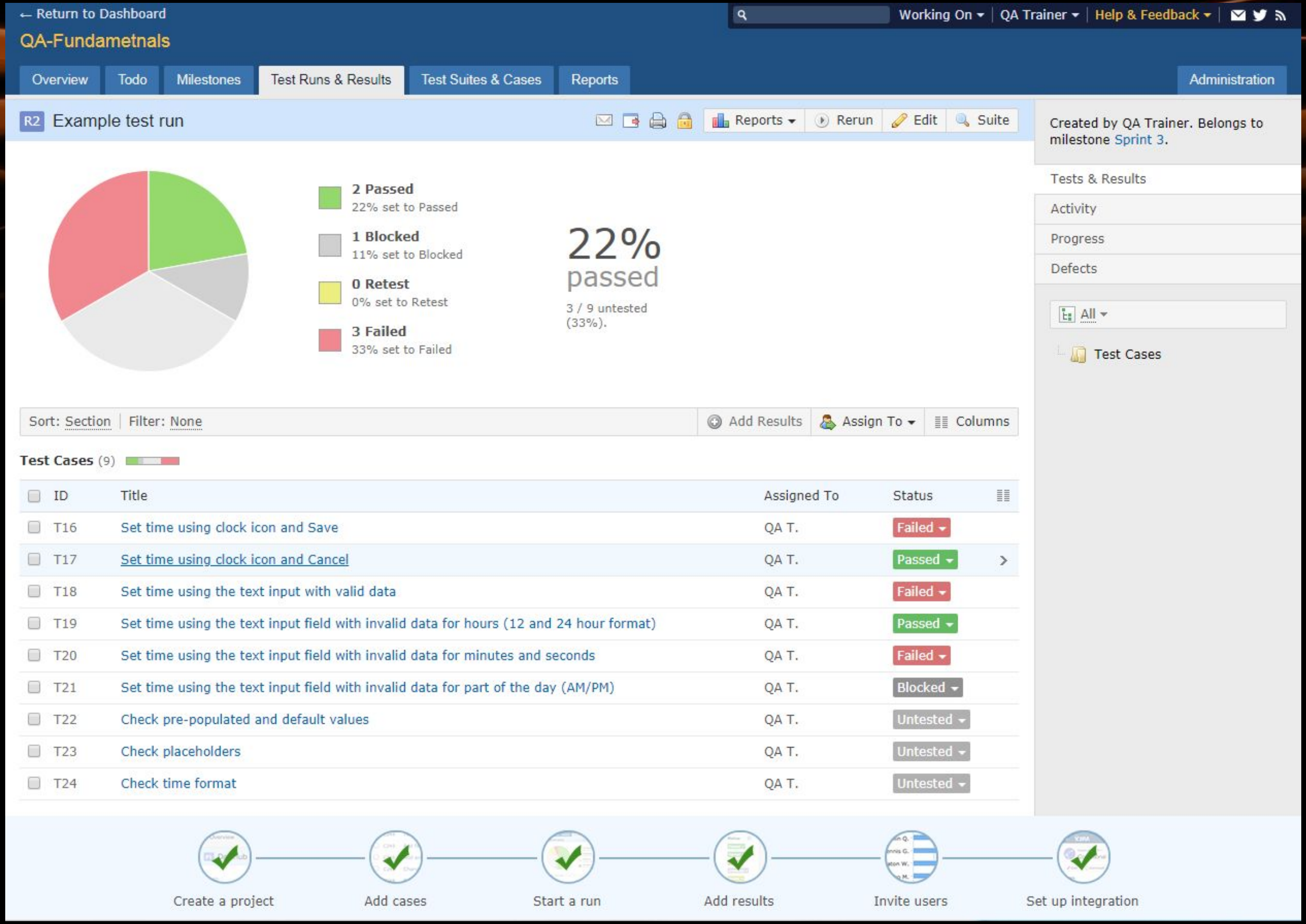
Table of Contents

1. Test Management
2. Bug Tracking Systems
    1. JIRA
    2. GitHub Issues
3. Version Control Systems



Example test run

Created by QA Trainer. Belongs to milestone Sprint 3.

🟩 2 Passed
22% set to Passed

▨ 1 Blocked
11% set to Blocked

🟨 0 Retest
0% set to Retest

🟥 3 Failed
33% set to Failed

22%
passed

3 / 9 untested (33%).

Test Cases (9)

	ID	Title	Assigned To	Status
□	T16	Set time using clock icon and Save	QA T.	Failed ▾
□	T17	Set time using clock icon and Cancel	QA T.	Passed ▾
□	T18	Set time using the text input with valid data	QA T.	Failed ▾
□	T19	Set time using the text input field with invalid data for hours (12 and 24 hour format)	QA T.	Passed ▾
□	T20	Set time using the text input field with invalid data for minutes and seconds	QA T.	Failed ▾
□	T21	Set time using the text input field with invalid data for part of the day (AM/PM)	QA T.	Blocked ▾
□	T22	Check pre-populated and default values	QA T.	Untested ▾
□	T23	Check placeholders	QA T.	Untested ▾
□	T24	Check time format	QA T.	Untested ▾

Test Management Systems

Test Management

- A test case repository
- Keeps track of test executions
- Organize test executions
- Popular Test Management Systems:
  - TestRail.io
  - TestLink.org
- Our TestRail instance:
  - january2018.testrail.io

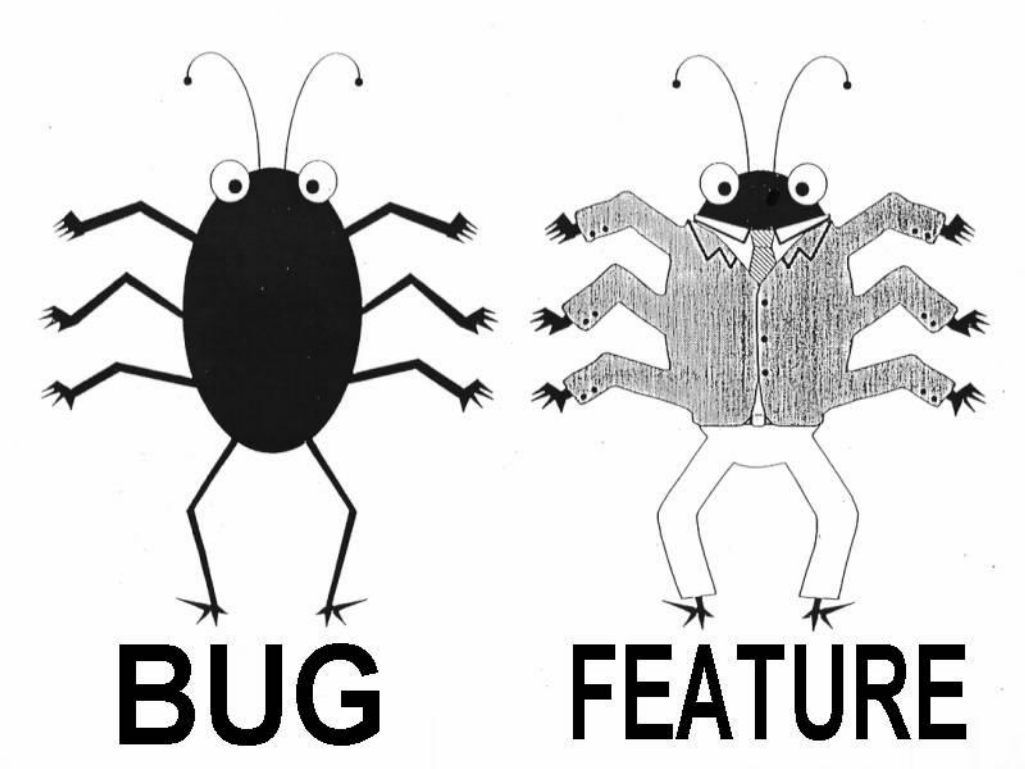
Performing a Test

- Running/Executing/Performing a Test Case - exercising the product, following specific step-by-step instructions
- Should find
  - The intentional behavior
  - The unexpected behavior

Found bug?

What is a bug?

- A coding error
- Incorrect or Unexpected behaviour
- Undocumented feature



Bug Tracking Systems

Bug Tracking Systems

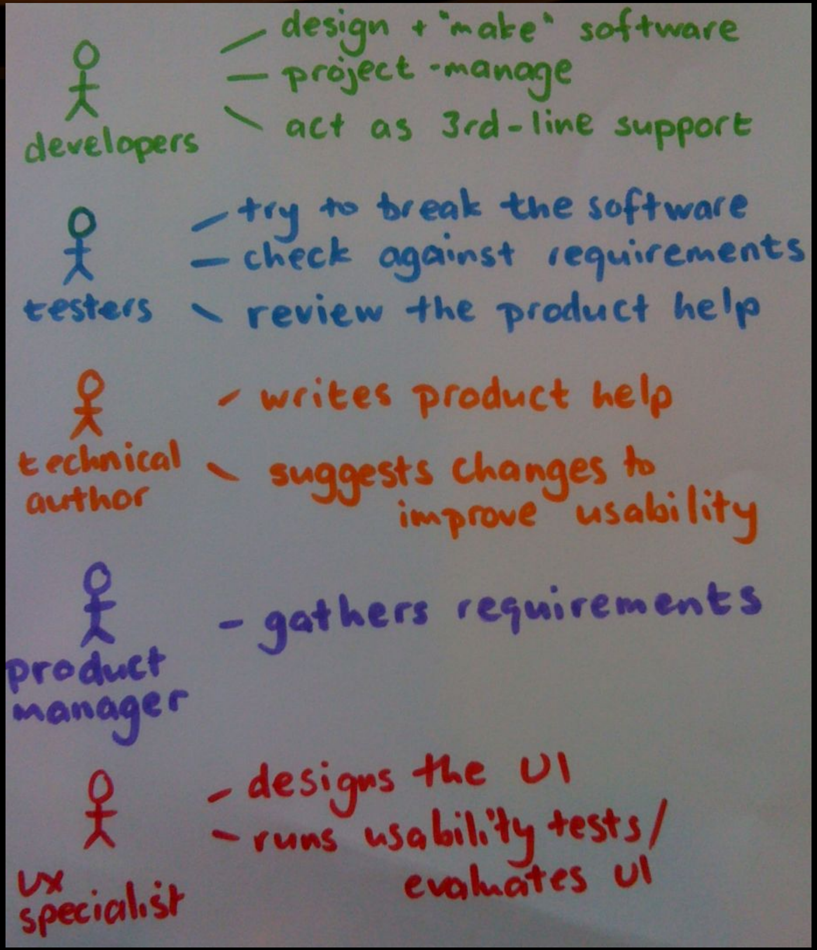
- What is a bug tracking system?

> A **bug tracking system** or **defect tracking system** is a software application that keeps track of reported software bugs in software development projects. It may be regarded as a type of issue tracking system.

- Our issue tracking system (Jira):
  - qafund.atlassian.net/

Bug Tracking Systems (2)

- Part of the whole project management
- Allows
  - `Work logging`
  - `Management reporting`
  - `Easier communication`
- *Consistent use of an issue tracker is considered one of the hallmarks of a good software team*



developers
- design + 'make' software
- project-manage
- act as 3rd-line support

testers
- try to break the software
- check against requirements
- review the product help

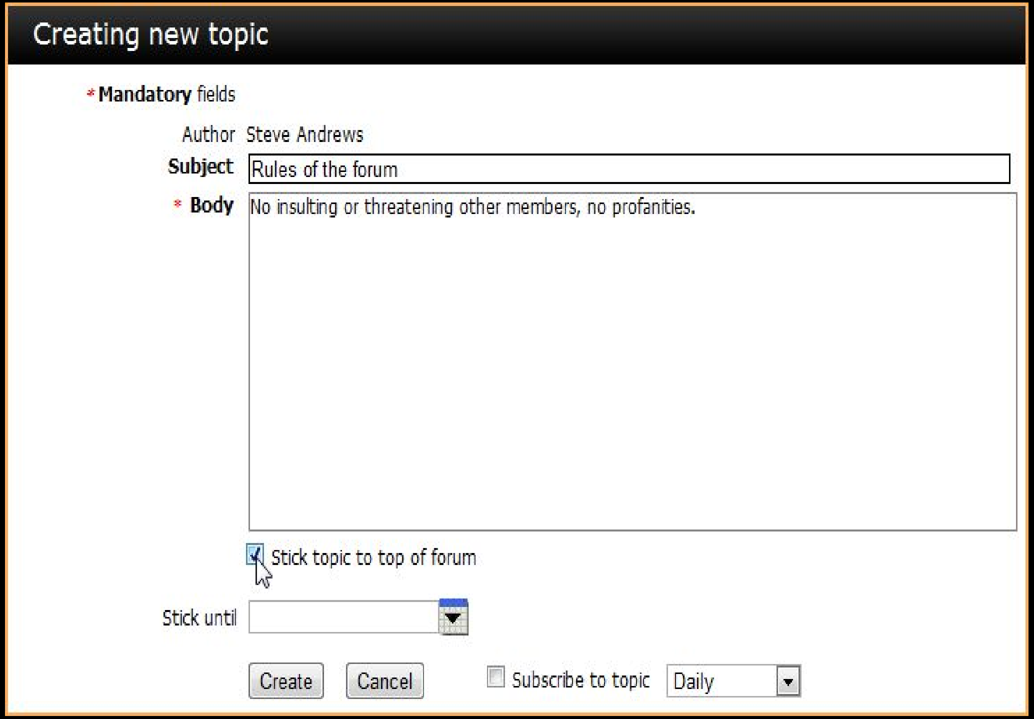
technical author
- writes product help
- suggests changes to improve usability

product manager
- gathers requirements

UX specialist
- designs the UI
- runs usability tests/evaluates UI

Bug Tracking Systems (3)

- Bugs are reported in a forum-like topics
- Prioritized
- Reach the
  - Developer according to the process
  - QA after being fixed



Creating new topic

*Mandatory fields

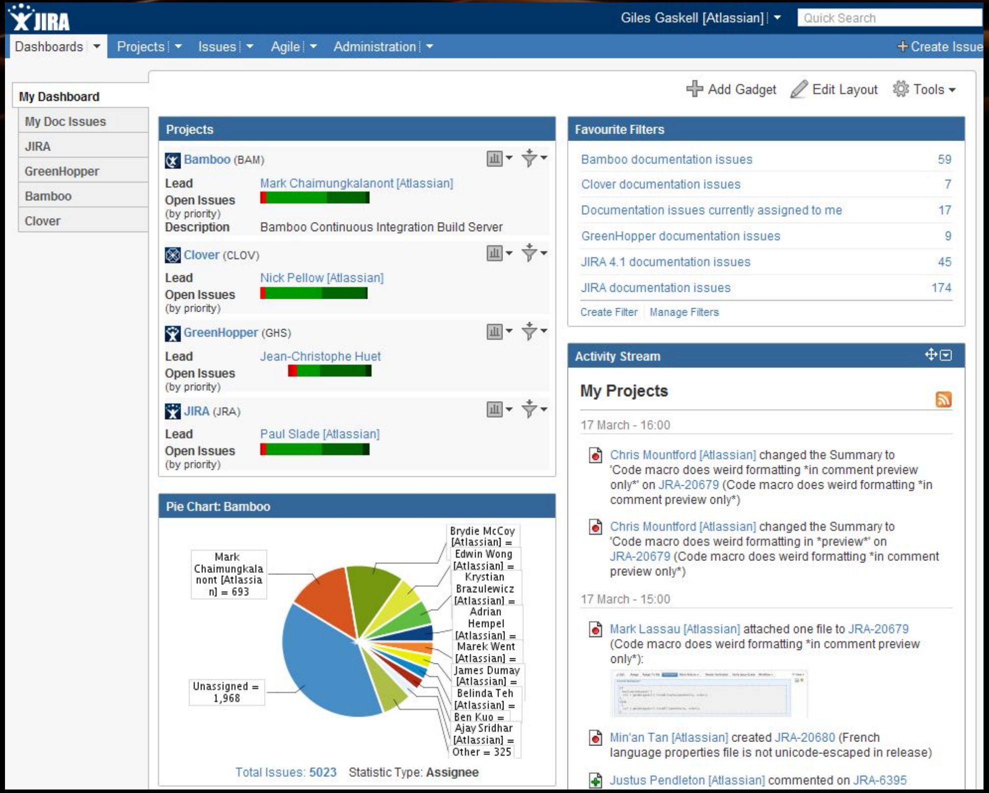
Author Steve Andrews

Subject: Rules of the forum

* Body: No insulting or threatening other members, no profanities.

☑ Stick topic to top of forum

Stick until



Projects

Bamboo (BAM)
Lead: Mark Chaimungkalanont [Atlassian]
Open Issues (by priority)
Description: Bamboo Continuous Integration Build Server

Clover (CLOV)
Lead: Nick Pellow [Atlassian]
Open Issues (by priority)

GreenHopper (GHS)
Lead: Jean-Christophe Huet
Open Issues (by priority)

JIRA (JRA)
Lead: Paul Slade [Atlassian]
Open Issues (by priority)

Favourite Filters

Bamboo documentation issues	59
Clover documentation issues	7
Documentation issues currently assigned to me	17
GreenHopper documentation issues	9
JIRA 4.1 documentation issues	45
JIRA documentation issues	174

Create Filter | Manage Filters

Activity Stream

My Projects

17 March - 16:00

Chris Mountford [Atlassian] changed the Summary to 'Code macro does weird formatting *in comment preview only*' on JRA-20679 (Code macro does weird formatting *in comment preview only*)

Chris Mountford [Atlassian] changed the Summary to 'Code macro does weird formatting in *preview*' on JRA-20679 (Code macro does weird formatting *in comment preview only*)

17 March - 15:00

Mark Lassau [Atlassian] attached one file to JRA-20679 (Code macro does weird formatting *in comment preview only*):

Min'an Tan [Atlassian] created JRA-20680 (French language properties file is not unicode-escaped in release)

Justus Pendleton [Atlassian] commented on JRA-6395

JIRA – Live Demo

Version Control Systems

Managing Different Versions of the Same File / Document

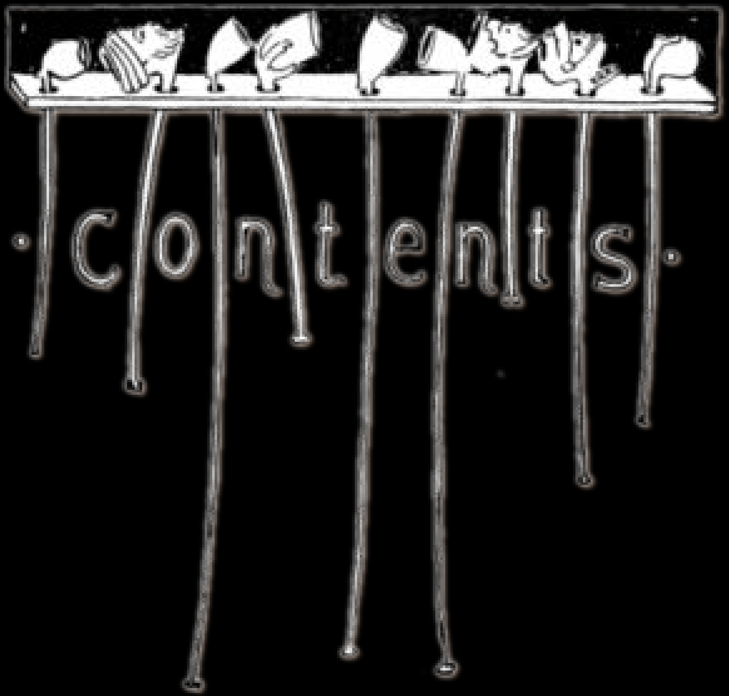
git

SUBVERSION

github SOCIAL CODING

Table of Contents

1. Version Control Systems: Philosophy
2. Versioning Models
   - Centralized Version Control
   - Distributed Version Control
3. Project Hosting Sites
4. GitHub - Demo

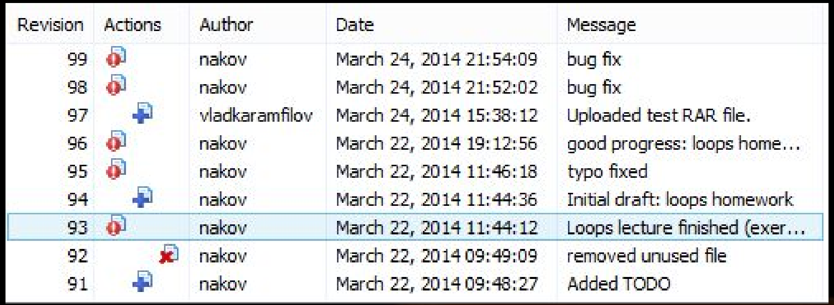


Version Control Systems (VCS)

- Functionality
  - File versions control
  - Merge and differences search
  - Branching
  - Console and IDE plugins
  - Well known products
  - CVS, Subversion (SVN) – free, open source
  - Git, Mercurial – distributed, free, open source
  - Microsoft TFS – commercial

Version Control (Revision Control)

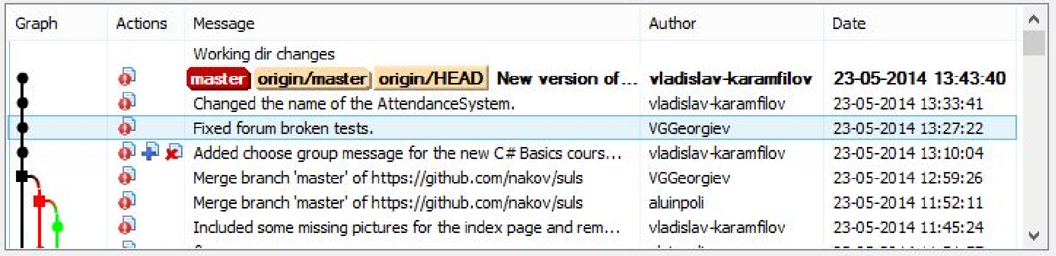
- Constantly used in software engineering
  - During the software development
  - While working with documents
- Changes are identified with an increment of the version number
  - for example 1.0, 2.0, 2.17
- Version numbers are historically linked with the person who created them
  - Full change logs are kept



Revision	Actions	Author	Date	Message
99	❗	nakov	March 24, 2014 21:54:09	bug fix
98	❗	nakov	March 24, 2014 21:52:02	bug fix
97	➕	vladkaramfilov	March 24, 2014 15:38:12	Uploaded test RAR file.
96	❗	nakov	March 22, 2014 19:12:56	good progress: loops home…
95	❗	nakov	March 22, 2014 11:46:18	typo fixed
94	➕	nakov	March 22, 2014 11:44:36	Initial draft: loops homework
93	❗	nakov	March 22, 2014 11:44:12	Loops lecture finished (exer…
92	✖	nakov	March 22, 2014 09:49:09	removed unused file
91	➕	nakov	March 22, 2014 09:48:27	Added TODO

Change Log

- Systems for version control keep a complete change log (history)
  - The date and hour of every change
  - The user who made the change
  - The files changed + old and new version
- Old versions can be retrieved, examined and compared
- It is possible to return to an old version (revert)



Graph	Actions	Message	Author	Date
		Working dir changes		
		master **origin/master** **origin/HEAD** **New version of...**	**vladislav-karamfilov**	**23-05-2014 13:43:40**
		Changed the name of the AttendanceSystem.	vladislav-karamfilov	23-05-2014 13:33:41
		Fixed forum broken tests.	VGGeorgiev	23-05-2014 13:27:22
		Added choose group message for the new C# Basics cours...	vladislav-karamfilov	23-05-2014 13:10:04
		Merge branch 'master' of https://github.com/nakov/suls	VGGeorgiev	23-05-2014 12:59:26
		Merge branch 'master' of https://github.com/nakov/suls	aluinpoli	23-05-2014 11:52:11
		Included some missing pictures for the index page and rem...	vladislav-karamfilov	23-05-2014 11:45:24

Vocabulary

- Repository (source control repository)
  - A server that stores the files (documents)
  - Keeps a change log
- Revision, Version
  - Individual version (state) of a document that is a result of multiple changes
- Check-Out, Clone
  - Retrieves a working copy of the files from a remote repository into a local directory
  - It is possible to lock the files

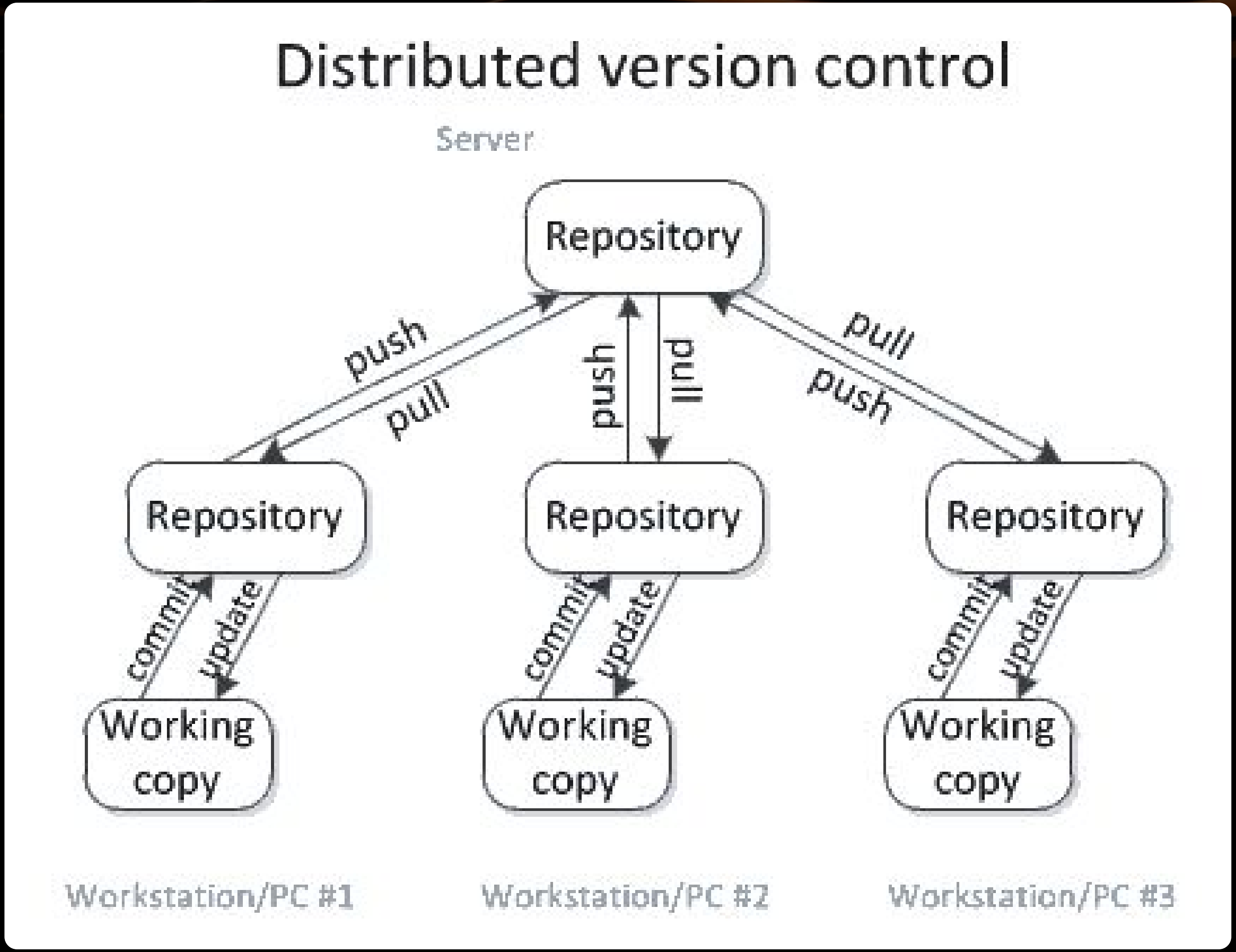
Vocabulary (2)

- Change
  - A modification to a local file (document) that is under version control
- Change Set / Change List
  - A set of changes to multiple files that are going to be committed at the same time
- Commit, Check-In
  - Submits the changes made from the local working copy to the repository
  - Automatically creates a new version
  - Conflicts may occur!

Vocabulary (3)

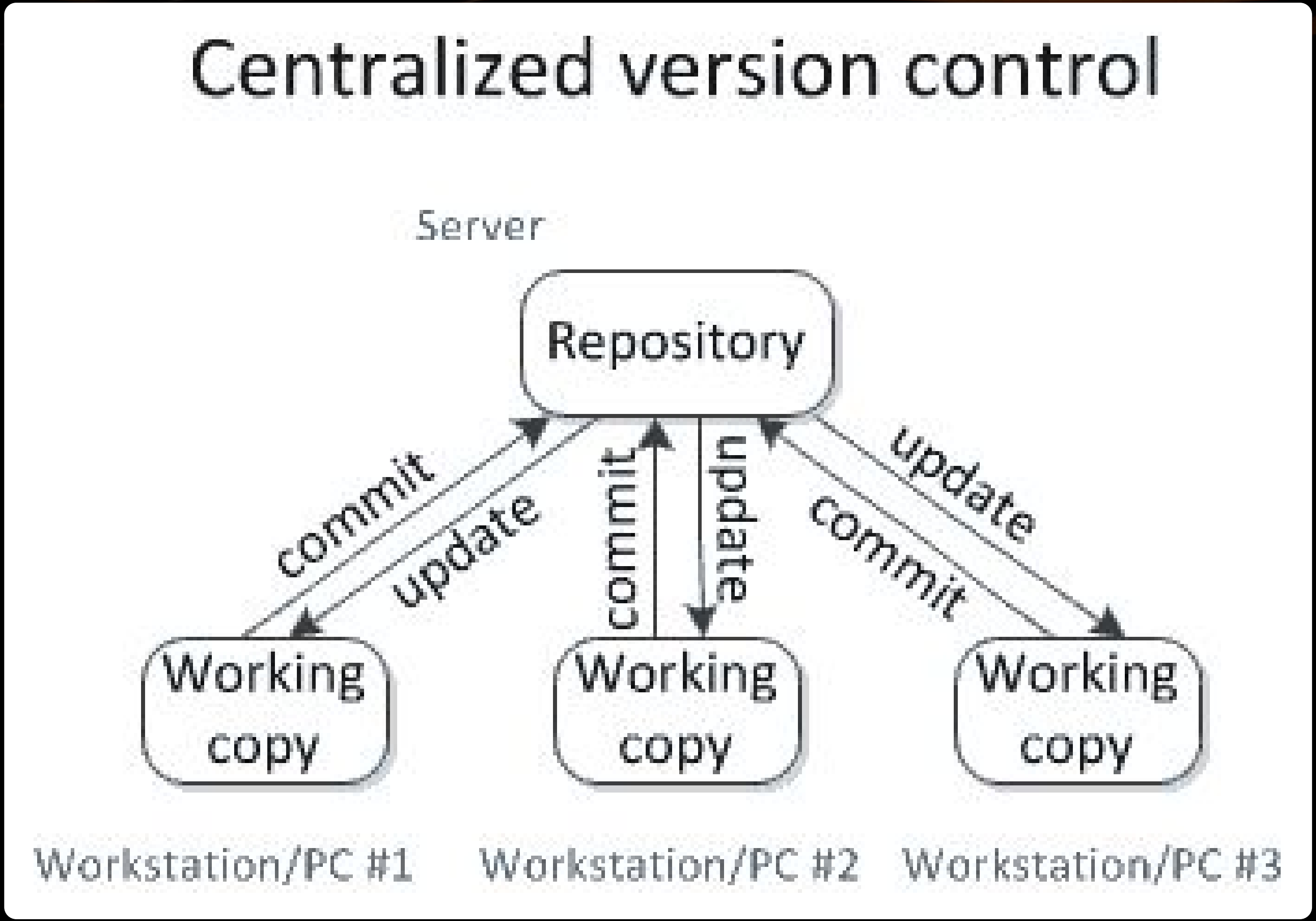
- Update, Get Latest Version, Fetch / Pull
  - Download the latest version of the files from the repository to a local working directory + merge conflicting files
- Undo Check-Out, Revert / Undo Changes
  - Cancels the local changes
  - Restores their state from the repository
- Branch / Branching
  - Division of the repositories in a number of separate workflows

Distributed Version Control



Source: http://homes.cs.washington.edu/~mernst/advice/version-control.html

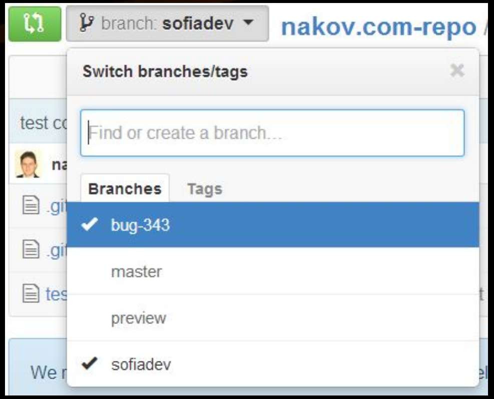
Centralized Version Control



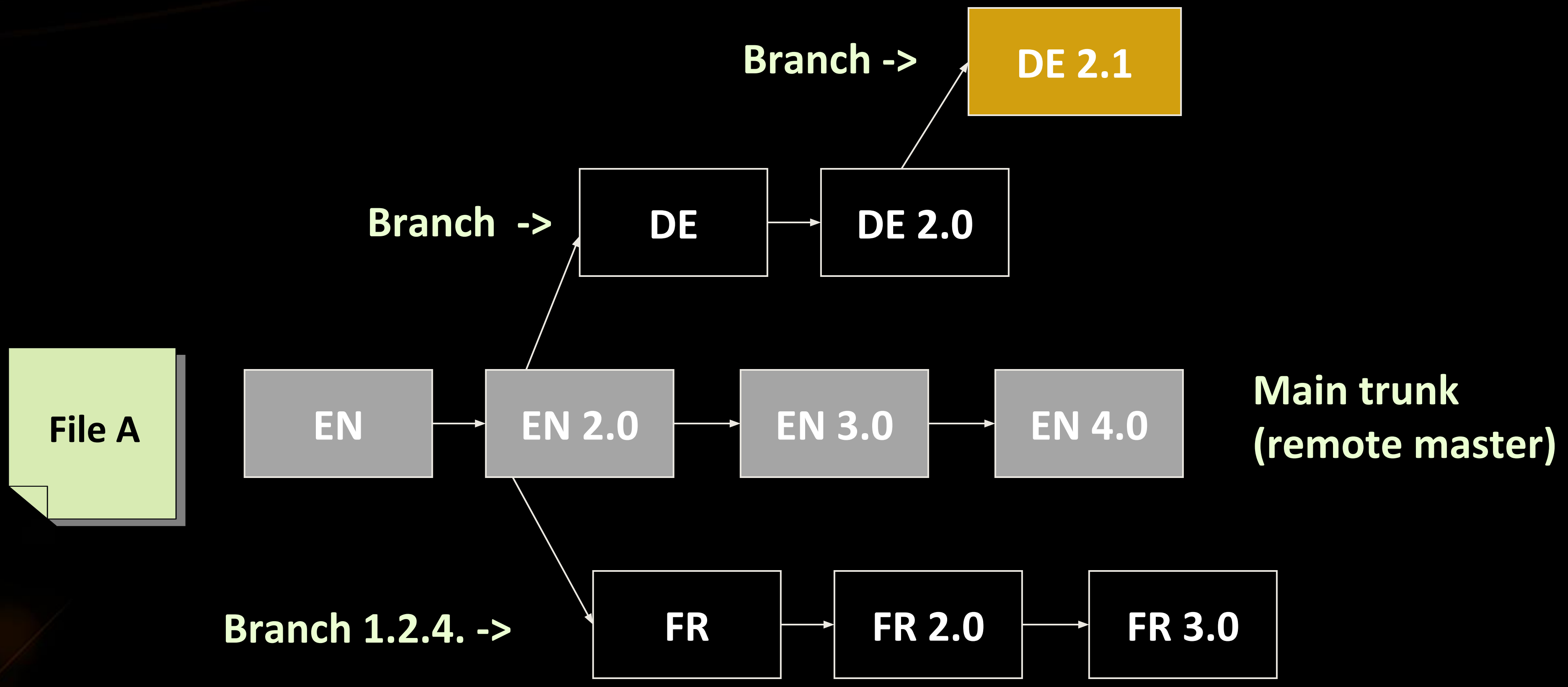
Source: http://homes.cs.washington.edu/~mernst/advice/version-control.html

Branching

- Branching allows splitting the development line into separate branches
  - Different developers work in different branches
- Branching is suitable for:
  - Development of new feature or fix in a new version of the product (for example version 2.0)
    - Features are invisible in the main development line
    - Until merged with it
  - You can still make changes in the older version (for example version 1.0.1)

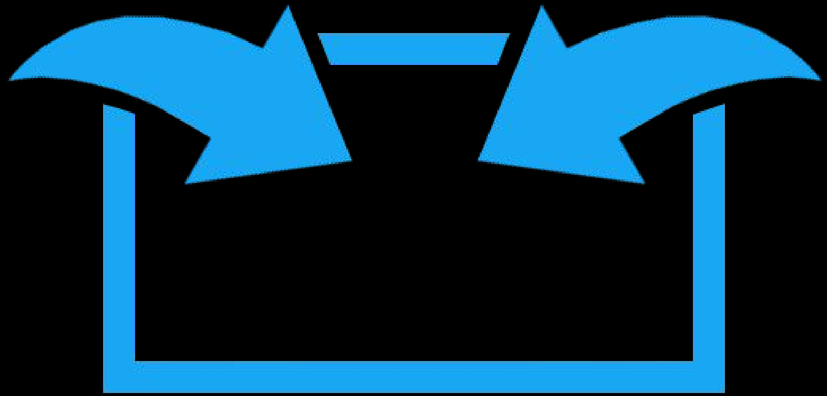


Branching – Example



Merging Problems

- When a file is concurrently modified, changes should be merged
  - Merging is hard!
  - It is not always automatic process
- Coordination and responsibility between the developers is required
  - Commit changes as early as finished
  - Do not commit code that does not compile or blocks the work of the others
  - Leave meaningful comments at each commit



Summary

- Project Management Systems
- What is an issue tracker?
  - `JIRA`
  - `GitHub Issues`
- How to report an issue?
- What is a Source Control System?
  - Git
  - SVN

Bug Tracking Systems

xssoftware

SmartIT

Komfo
SOCIAL MEDIA MARKETING AT SCALE

NETPEAK
интернет-маркетинг для бизнеса

LUXOFT

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- Software University Forums – forum.softuni.bg