Software Engineering Theory

Software configuration management

Lena Buffoni/ Kristian Sandahl Department of Computer and Information Science 2023-09-13





Documentation, Version and Configuration Management

Project Management, Software Quality Assurance (SQA), Supporting Tools, Education





Configuration Item Identification

- Source code modules
- Test scripts
- Design documents
- Build systems





















SCM tools

Workflow systems

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Define processes for change requests

Change report system

- Bug-tracking
- New features
 - Change request
- (e.g free alternatives: Bugzilla, Trac)

Tool examples:

- SVN, Git
- GitHub, GitLab
- Beanstalk



Change manage ment

Revision control: Some terminology





Defining a common workflow

- A structured way of collaborating
- Different people/teams working on different parts of the system







Pros/cons of centralized workflow

- + little setup
- + will work for small projects
- limited flexibility
- hard to maintain a continuously working product







Pros/cons of feature branches

- + easier conflict resolution
- + better control of what features to include when
- + possibility of using pull requests
- additional steps
- long living branches might be hard to merge



Push vs pull request

- Pull request: Submitting your code for consideration for inclusion in the main repository
 - + an opportunity to review code and make changes
 - + less risk of needing a rollback
 - puts extra work on the repository owner
 - can increase time before changes are integrated







Things can get complicated





Pros/cons of gitflow workflow

- + always stable code in the master
- + can work on release and future features simultaneously
- + fix issues without disrupting workflow
- not good for supporting multiple product versions
- history can get complicated
- many merging conflicts to resolve







Pros/cons decentralized workflow

- + no need to provide write access to main repository+ good for large open-source projects
- more complicated to set up and maintain



Make your own work-flow





Summary

- Configuration management processes
- Development workflows



The end. Thank you! Questions?

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