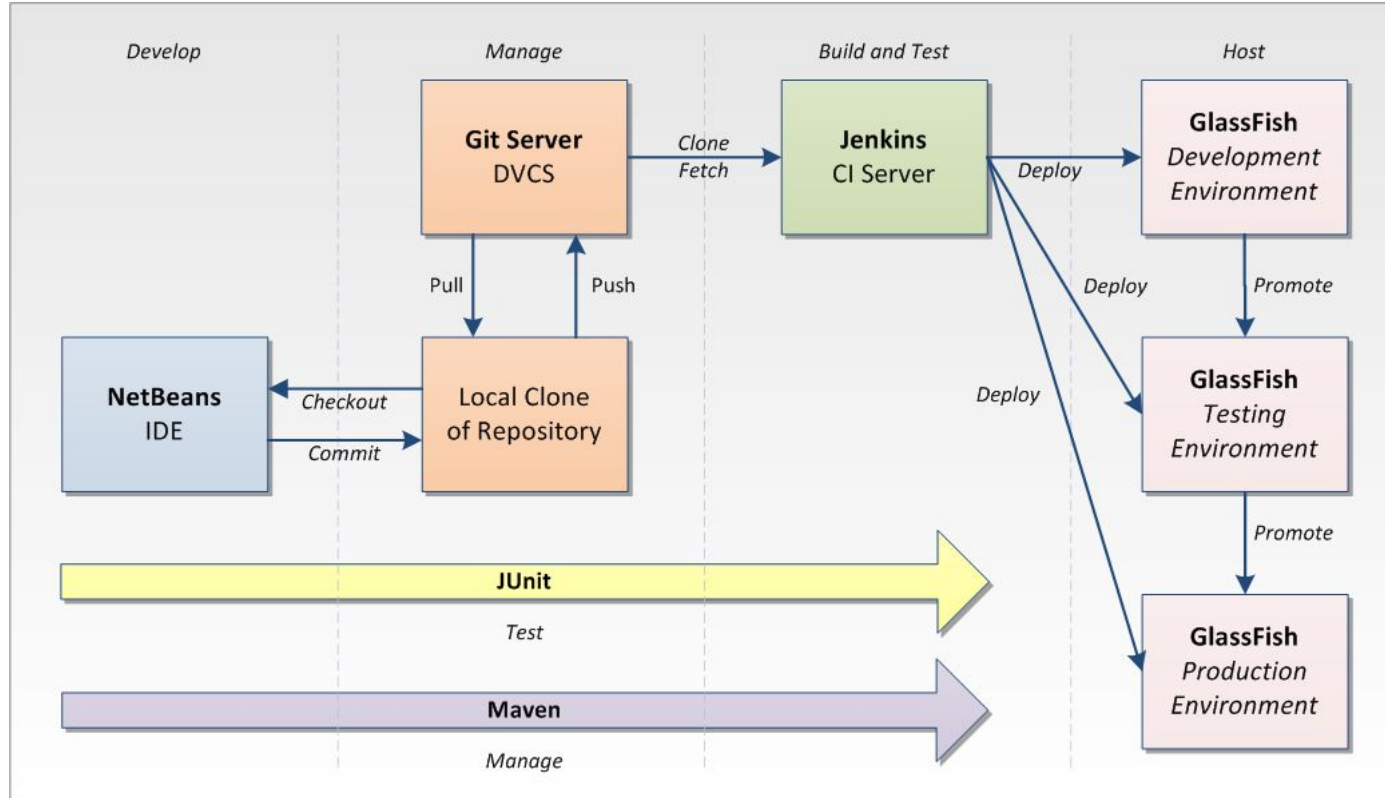


# **Development Environment and Configuration Management**

TIC 4302 - Information Security Practicum II

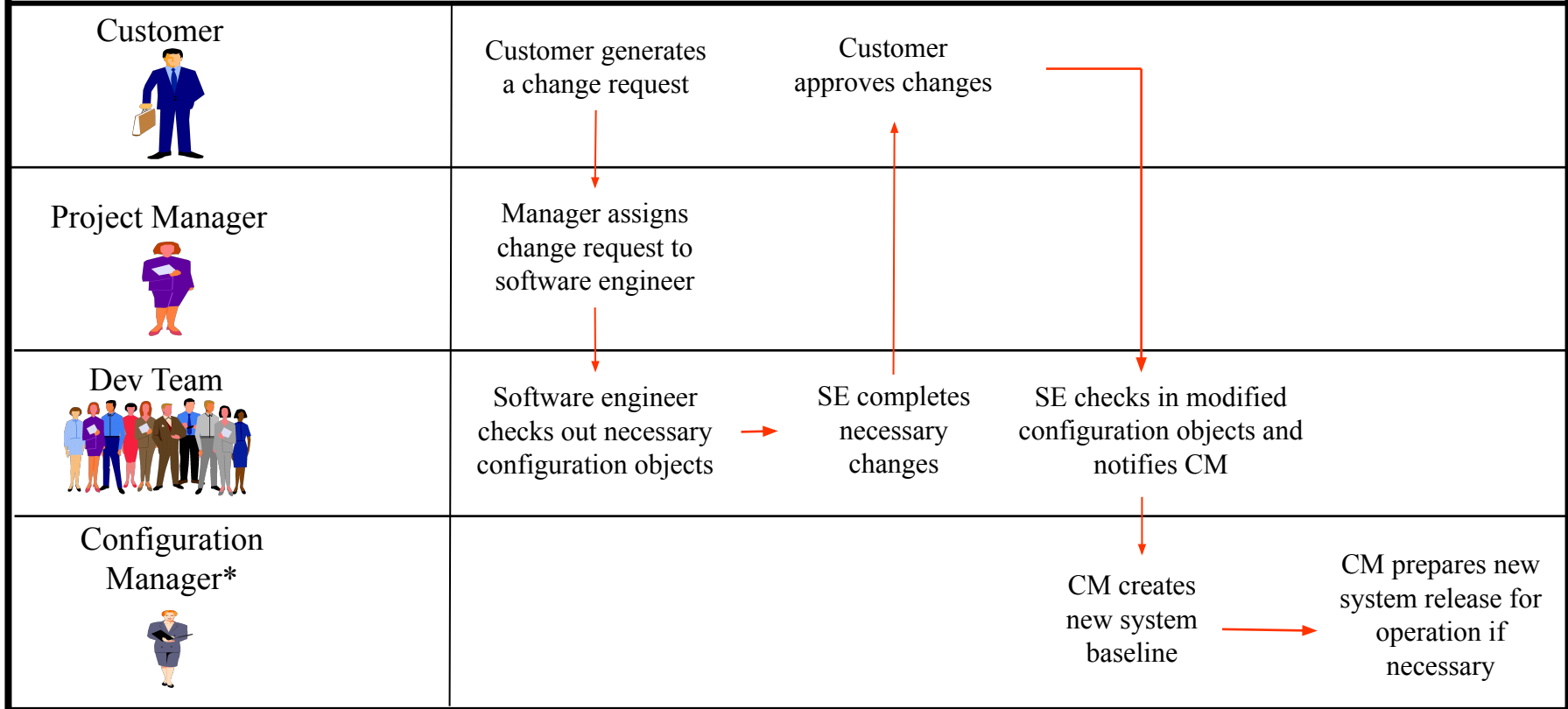
# Development Environment and Workflows



# Development (Automation) Tools

1. NetBeans IDE. Current version: 7.4
2. JUnit. Current version: 4.11 (included with NetBeans 7.4)
3. GlassFish Server. Current version: 4.0 (included with NetBeans 7.4)
4. Jenkins CI Server. Current version: 1.538
5. Apache Maven. Current version: 3.1.1
6. cURL. Current version: 7.33.0
7. Git with Git Gui and gitk. Current version: 1.8.4.3
8. Necessary system environmental variables:  
M2\_HOME, M2, JAVA\_HOME, GLASSFISH\_HOME, and PATH

# Software Configuration Management Cycle



\*In charge of administering project database and providing access control to engineers

# Software Configuration Management Tools

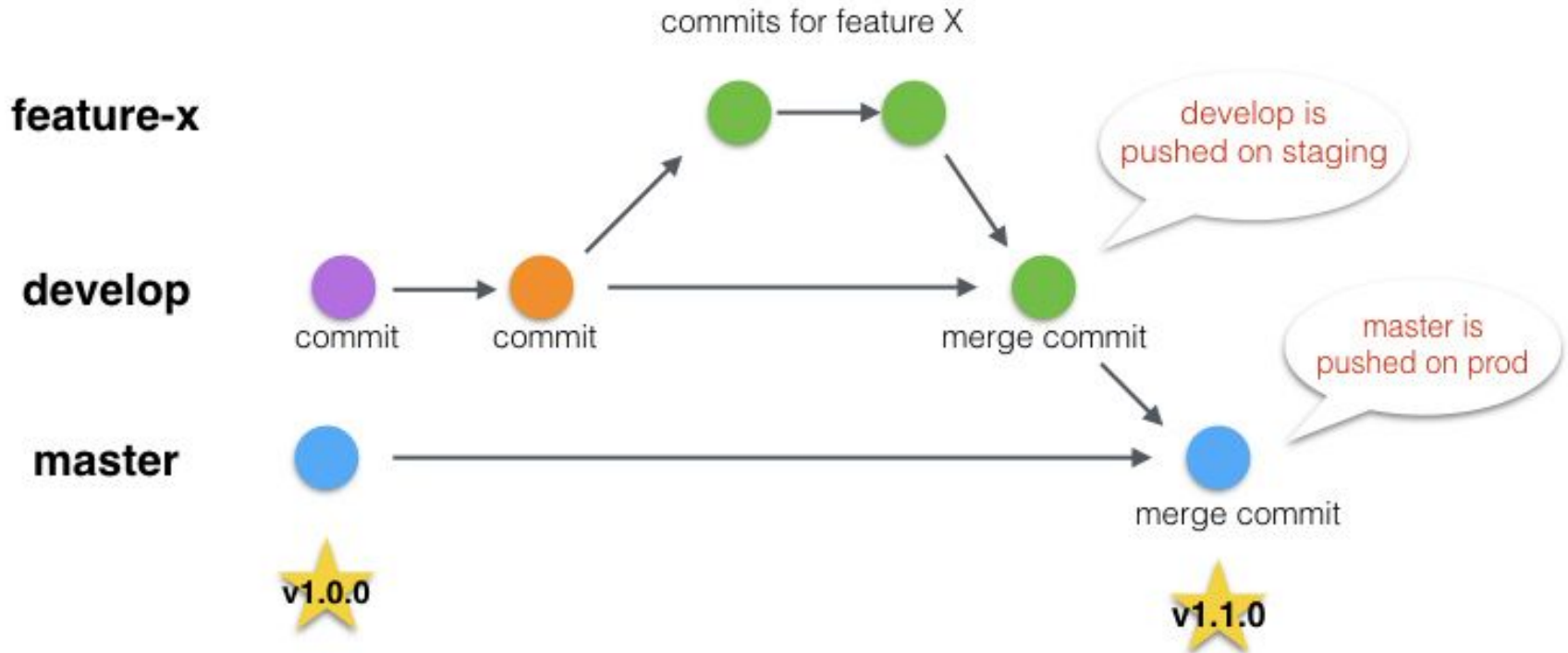
- Earlier: product oriented tasks, e.g., versions
  - SCCS, RCS
  - Concurrent Version System (CVS)
  - Subversion (SVN)
  - Git/GitHub
- Modern: more functionalities, e.g., process

# IDE (Integrated Development Environment)



**Demo**

# Git (Branching) Workflow

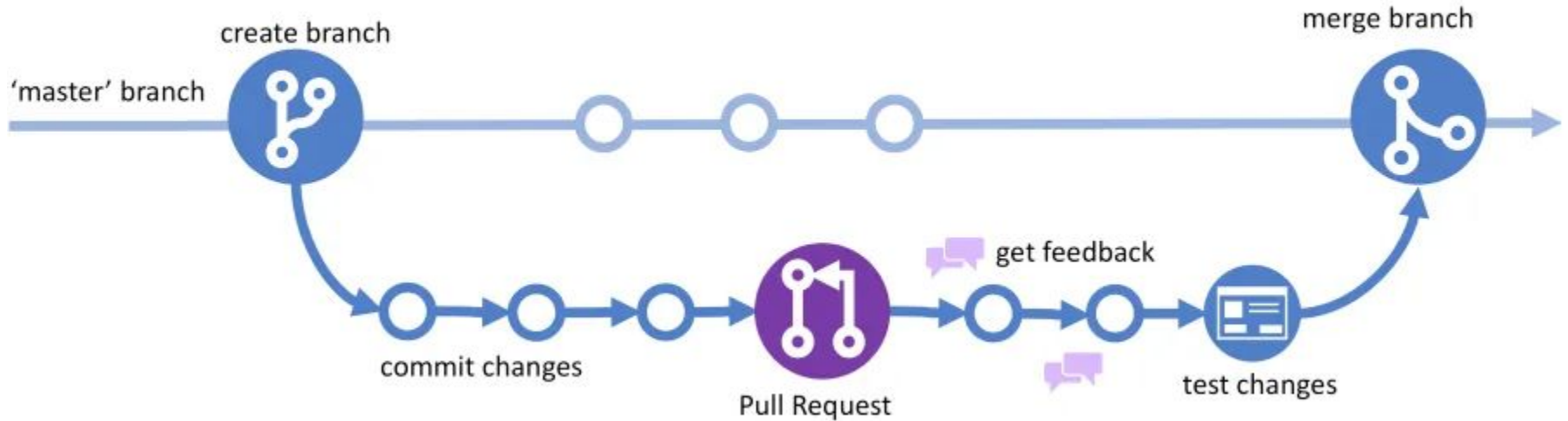




**Demo**

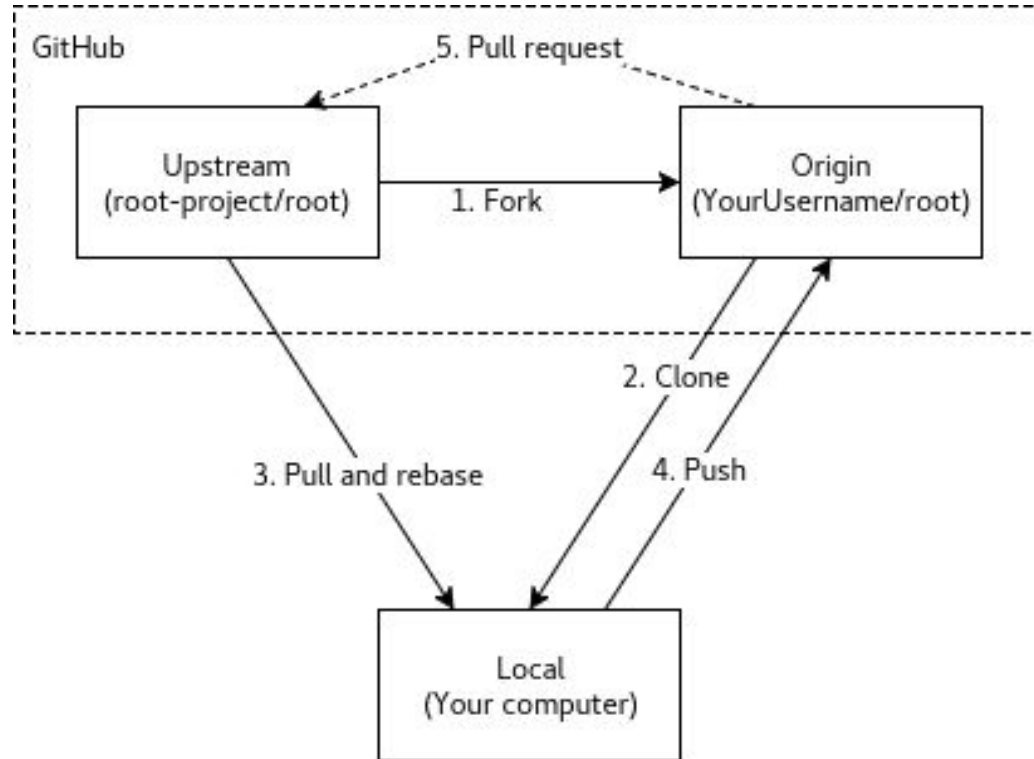
# Git (Workflow) with PR (Pull Request)

## GitHub Flow



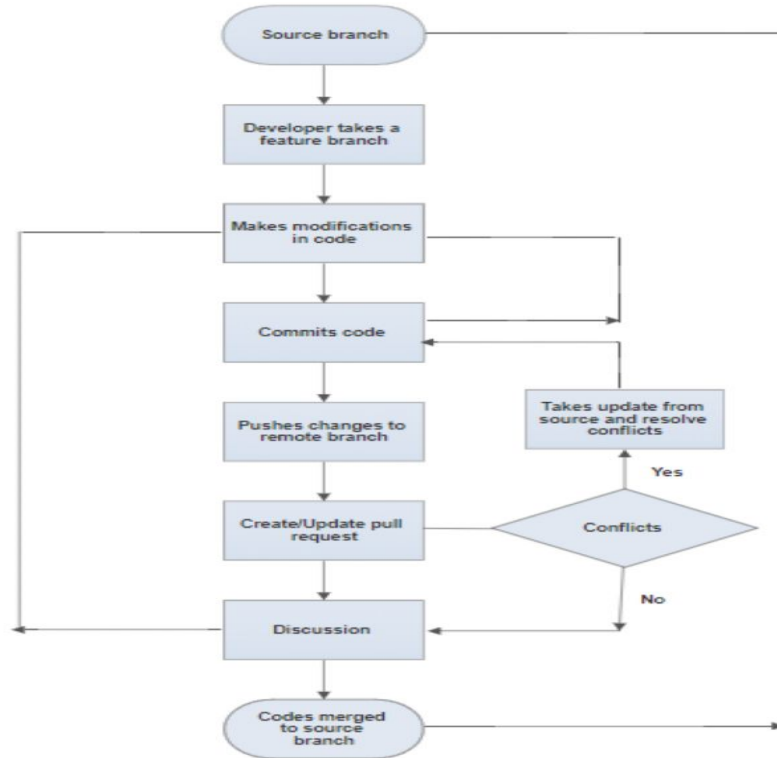
**Demo**

# Git (Workflow) with Fork and PR (Pull Request)



**Demo**

# Summary



# References

<https://programmaticponderings.com/2013/11/04/continuous-integration-and-deployment-using-git-maven-jenkins-and-glassfish/>

Software Configuration Management (SCM) Hans Van Vliet, Software Engineering, Principles and Practice, 3rd edition, John Wiley & Sons, 2008. Chapter 4. H. E. Bersoff, Elements of Software Configuration Management. IEEE Transactions on Software Engineering, 10(1):79-87, Jan 1984.

<https://marcgg.com/blog/2016/02/22/git-flow-heroku-pipelines/>

<https://build5nines.com/introduction-to-git-version-control-workflow/>

<https://blog.axosoft.com/pull-requests-gitflow/>

<https://www.edureka.co/blog/intellij-idea-tutorial/>