

# CS520 Web Programming

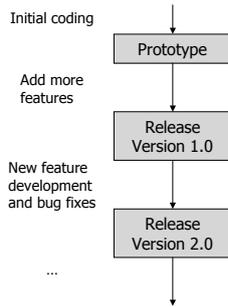
## Version Control with Subversion

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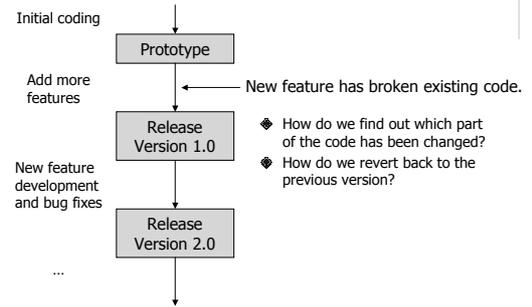
### Overview

- ◆ Version control systems
- ◆ Basic concepts
  - Repository and working copies
  - Tag, branch, and merge
- ◆ Using Subversion

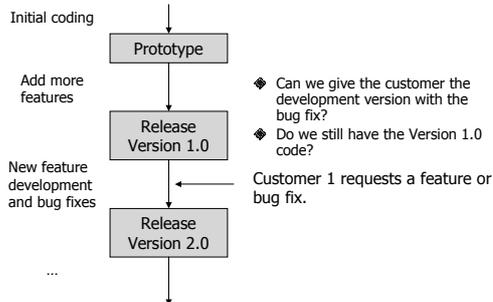
### The Process of Application Development



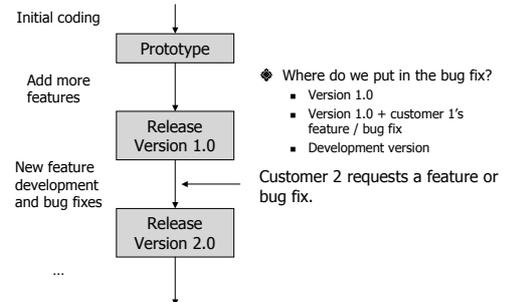
### Problems During Development



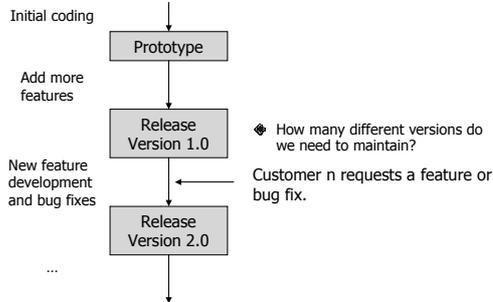
### Problems During Development



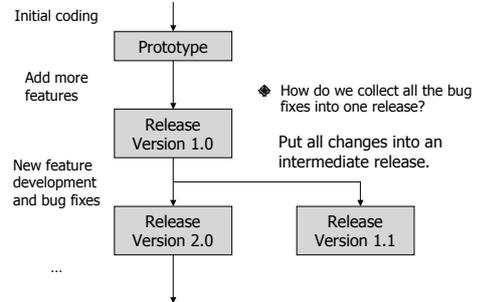
### Problems During Development



## Problems During Development



## Problems During Development



## Version Control Systems

- ◆ **CVS**
  - Most popular / well known / widely used open source version control system
  - Somewhat obsolete due to some inherent system limitations
- ◆ **Subversion, Arch, Monotone**
- ◆ **Commercial**
  - Visual SourceSafe
  - ClearCase
  - BitKeeper

## Subversion

- ◆ **Pros: A better CVS**
  - Fixed many annoying aspects of CVS
    - ◆ Recursive add, binary file handling, keyword substitution, local diff, status output etc.
  - Significant improvements
    - ◆ Atomic commit, constant time branching and tagging, better structure design etc.
  - *Feels like CVS*
- ◆ **Cons: Just a better CVS**
  - Does not scale to large, distributed development environments

## Common Command Syntax

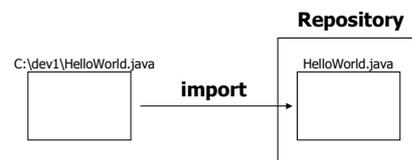
```
svn <command> [src_dir] [dest_dir]
```

Could be local directories or URLs.

### Examples:

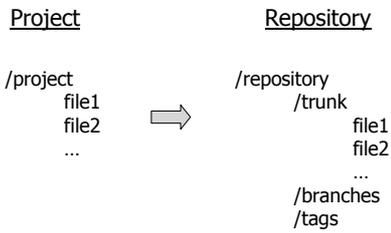
```
svn ls file:///home/cysun/subversion/cs520
svn log http://cs3.calstatela.edu/cs520
svn checkout svn://cs3.calstatela.edu/cs520/csns/trunk csns
```

## Import

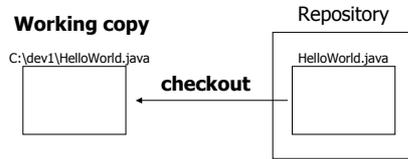


- ◆ Put a project into a repository

## Directory Structure

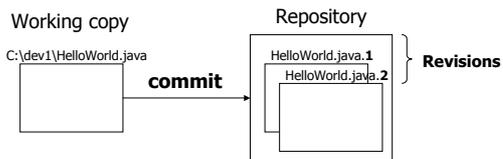


## Checkout



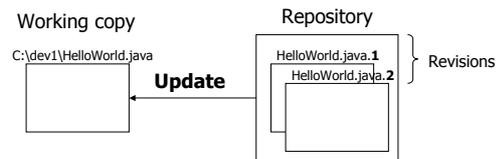
- ◆ Get a copy of the project from the repository
  - Working copy is *version controlled*

## Commit (Checkin)



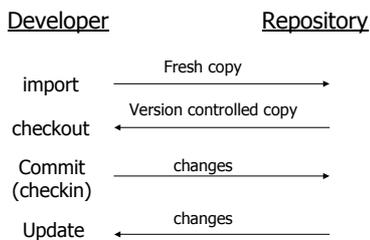
- ◆ Send changes back to the repository

## Update

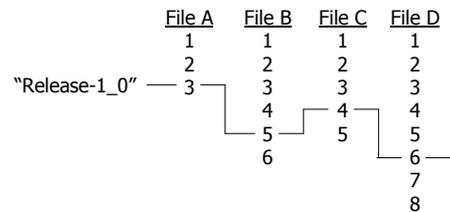


- ◆ Pull changes out of the repository and apply them to the working copy

## Basic Version Control Operations

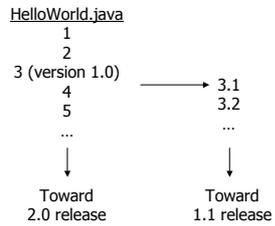


## Tag – Mark A Moment in Time



`svn copy svn:///.../trunk svn:///.../tags/Release-1_0`

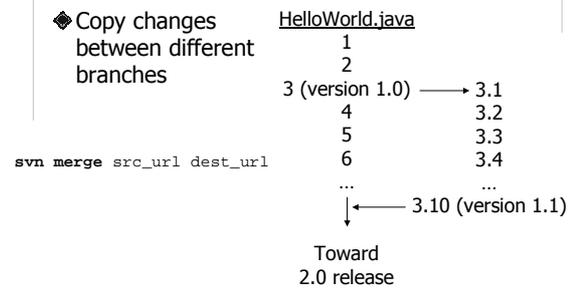
## Branch – Work in Parallel



```
svn copy svn:///trunk svn:///branch/R1_1-branch
```

## Merge

- ◆ Copy changes between different branches



## Other Useful Commands

- ◆ Status
- ◆ Revert
- ◆ Add
- ◆ Remove
- ◆ Ls
- ◆ Log

## Online Resources

- ◆ The Subversion book - <http://svnbook.red-bean.com/>
- ◆ Subversion official site - <http://subversion.tigris.org/>
- ◆ Subversion Eclipse plugin - <http://subclipse.tigris.org/>