RCS

C.L.U.E PRESENTATION

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REVISION CONTROL

- Track changes
- Restore prior versions
- Merge changes
- Maintain branches
- Keep logs
CONCEPTS

• Working directory – holds program(s) being edited

• Repository – holds 'official' copies, changes, logs, etc. In libraries

• Check in – puts program into library in repository

• Check out – puts program into working directory from repository
CONCEPTS

• Log – description of changes

• Version – combination of release and revision number (and branch and revision numbers if any)
  - release.revision – 1.1
  - release.revision.branch.revision – 1.2.1.4

• Branch – version that is an off shoot from main line
CONCEPTS

- lock – only one person can edit
  [unlocked - can not be edited]
COMMANDS

• rcs - administration commands
  - -i initialize library
  - -kb set up for binary files
  - -b sets default branch
  - -l lock or -u unlock
  - -on.n delete revision

• ci check in
  - -rn.n specify revision
  - -rn.n.n.n specify branch
COMMANDS

- -l leaves an editable copy in working directory
- -u leaves an uneditable copy in working directory
COMMANDS

• co – check out
  - -rn.n specify revision
  - -l with lock
  - -jn.n:n.n join (i.e. merge changes)
  - -p print to screen

• rlog – lists log

• rcsdiff – lists differences

• rcsmerge – combines changes
COMMANDS - MISC.

- `ci -s <string>` set status
- `ci -n <string>` set release.version name
- `co -s <string>` retrieve by status
- `co -r <string>` retrieve by name
CREATE

- `$ rcs -i hw.pl` OR
- `hw.pl`
- `print "hello world \n";`
- `$ ci hw.pl`

- create library file RCS/hw.pl,y
- perl program
- program code
- create &/or update library file
- version 1.1
Created file and archive

```
[kad@kosta helloworld]$ echo 'print "hello world \n";' >hw.pl
[kad@kosta helloworld]$ ci hw.pl
RCS/hw.pl,v <-- hw.pl
enter description, terminated with single '.' or end of file:
NOTE: This is NOT the log message!
>> start of hello world project
>>.
initial revision: 1.1
done
[kad@kosta helloworld]$ ls RCS
hw.pl,v
[kad@kosta helloworld]$ ls
RCS
[kad@kosta helloworld]$
```
FIRST REVISION

- `$ co -l hw.pl`
- `#! /usr/bin/perl`
- `print "hello ...`
- `$ ci -l hw.pl`

- check out hw.pl with lock
- new code
- code
- check in hw.pl; update library file RCS/hw.pl,y
- version 1.2
log

RCS file: RCS/hw.pl,v
Working file: hw.pl
head: 1.2
branch:
locks: strict
   kad: 1.2
access list:
symbolic names:
keyword substitution: kv
total revisions: 2; selected revisions: 2
description:
Start of hello world project

revision 1.2 locked by: kad;
date: 2005/09/14 18:14:08; author: kad; state: Exp; lines: 1 0
added shebang

revision 1.1
date: 2005/09/14 18:08:41; author: kad; state: Exp;
Initial revision

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CREATE BRANCH

- `#!/usr/bin/perl`
- `print "hello"
  print "who are ...
  $name = <>;
  print "hi $name`
- `$ ci -r1.2.1.1`

- updated code
- create branch &
  update library file
- version 1.2.1.1
- remove lock
Revise Main program

- $ co -l hw.pl
- `#!/usr/bin/perl`
- `print "hello ... print " I am bob`
- $ ci -l hw.pl

- check out rev 1.2
- revised main program
- update library file (check in)
- keep lock &hw.pl
- Version 1.3
show differences

$ rcsdiff -r1.3 -r1.2.1.1 hw.pl

2,3c2,5
< print "hello world \n";
< print "I am bob \n";
---
> print "Who are you? \n";
> $name=<>;
> print "hello $name \n";
Merge Differences

$ co -l -r1.3 hw.pl
$ rcsmerge -r1.2 -r1.2.1.1 hw.pl
    OR
$ co -l -r1.3 -j1.2:1.2.1.1 hw.pl
    OR
$ co -l -j1.2:1.2.1.1 hw.pl
#! /usr/bin/perl
print "hello world \n";
<<<<<<< hw.pl
print "my name is Bob\n";
=======
print "who are you? ";
$name = <>;
print "hello $name \n";
>>>>>>> 1.2.1.1

>>> >>> >>> >>> 1.2.1.1
After Merge

- edit out conflicts
- $ ci -r2.1 hw.pl

- remove conflicts
- check in revised program as version 2.1
RCS file: RCS/hw.pl,v
Working file: hw.pl
head: 2.1
branch:
locks: strict
... deleted text ...
total revisions: 5; selected revisions: 5
description:
start of hello world project
-----------------------
revision 2.1
date: 2005/09/15 22:07:36; author: kad; state: Exp; lines: +4 -0
production version
-----------------------
revision 1.3
date: 2005/09/14 19:02:49; author: kad; state: Exp;
lines: +1 -0
added my name
----------------------------
revision 1.2
date: 2005/09/14 18:14:06; author: kad; state: Exp;
lines: +1 -0
branches:  1.2.1;
added shebang
----------------------------
revision 1.1
date: 2005/09/14 18:08:41; author: kad; state: Exp;
Initial revision
----------------------------
revision 1.2.1.1
date: 2005/09/14 18:53:49; author: kad; state: Exp;
lines: +3 -0
started branch to get user input
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RESOURCES

- www.gnu.org/software/rcs/rcs.html
- www.cs.purdue.edu/homes/trinkle/RCS
- www.uvm.edu/~ashawley/rcs/rcs_handbook.html
- http://freshmeat.net/projects/rcs/
THE END