Subversion

http://subversion.tigris.org/

http://svnbook.red-bean.com/en/1.5/index.html

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NEW SOUTH WALES

Software Development

- Hack, hack, hack, hack, hack
  - Sorta works

Main.c

Software Development

- Hack, hack, hack, hack, hack
  - Sorta works
- We keep a copy, in case we get stuck later on

Main.c

Main_old.c

Software Development

- Hack, hack, hack
- It works pretty well, so we keep another copy.

Main.c

Main_old.c

Main_not_as_old.c

Software Development

- Hack, hack, hack
- Now it works (we think), we decide to release it.

Main.c

Main_old.c

Main_not_as_old.c

Main_rel_1.c

Software Development

- We keep working to improve our software

- Hack, hack, hack, hack, hack

- New and improved version works (we think), we decide to release it.

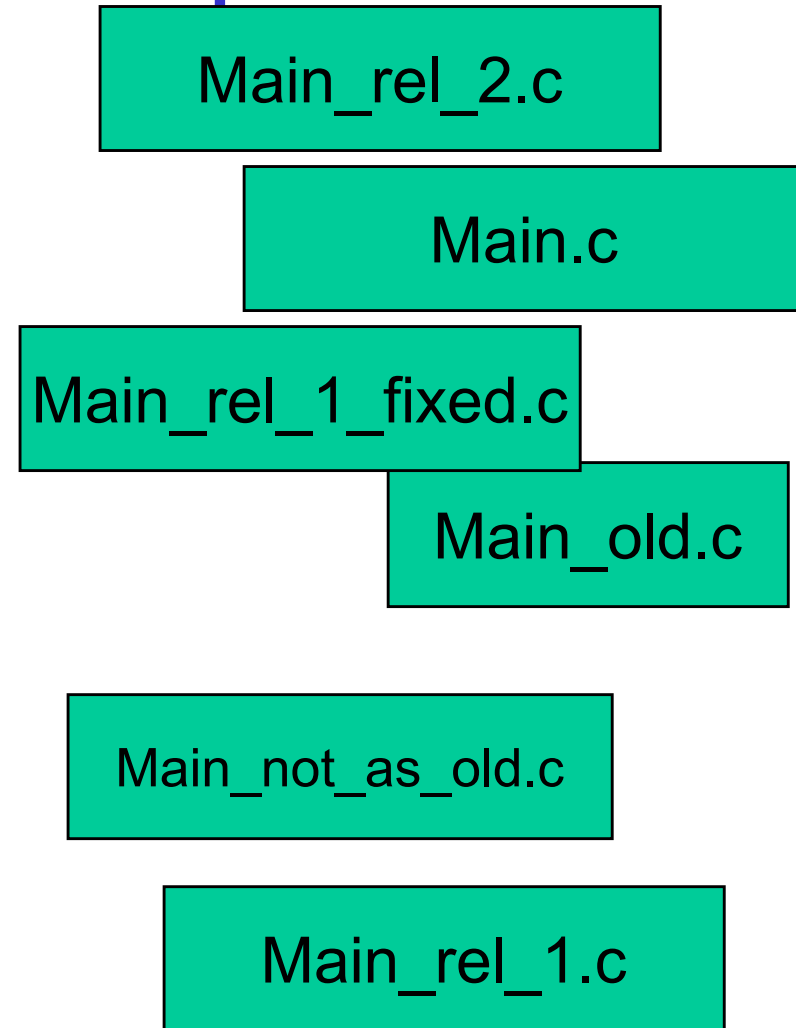Main_rel_2.c

Main.c

Main_old.c

Main_not_as_old.c

Main_rel_1.c

Software Development

- Oh, no!!! We have a bug in release one.
  - We need to fix it (and not force the to upgrade to rel_2).
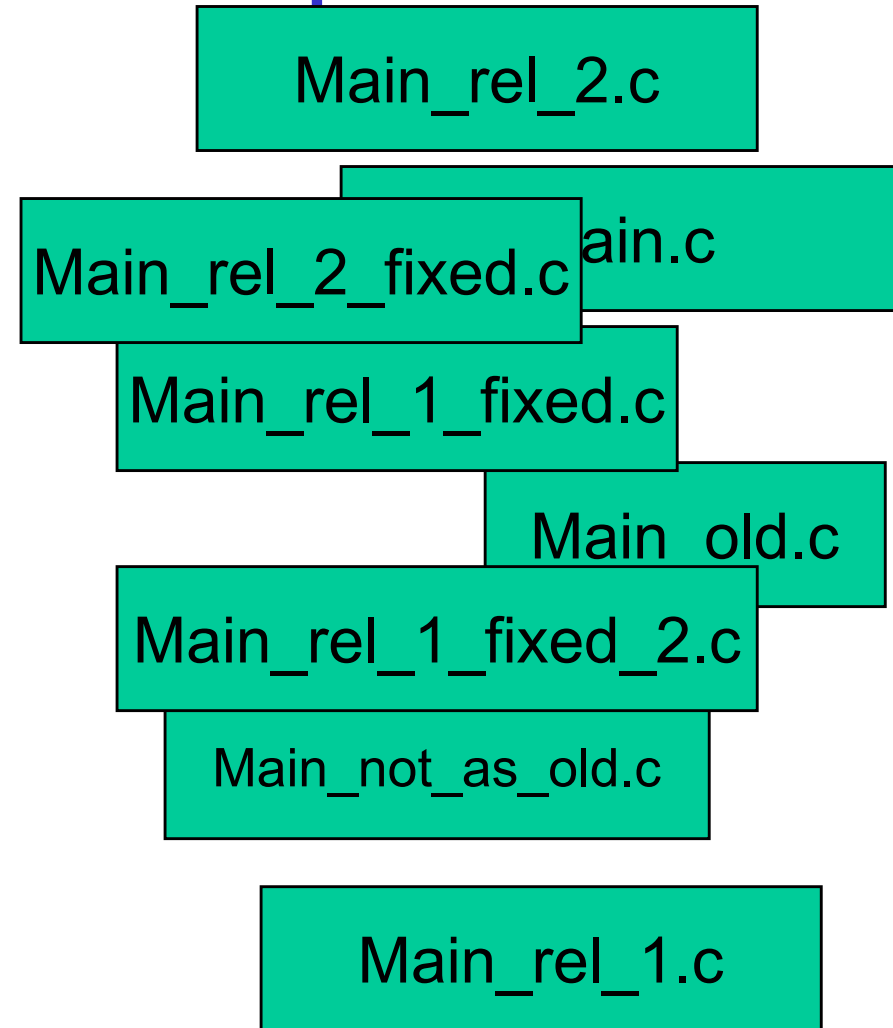- Hack, hack, hack, hack, hack
- Now have a fixed version.

Main_rel_2.c

Main.c

Main_rel_1_fixed.c

Main_old.c

Main_not_as_old.c

Main_rel_1.c

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Software Development

- Oh, no!!! Another bug in rel_1.

- Hack, hack, hack, hack, hack

- Now have a fixed version.

Main_rel_2.c

Main.c

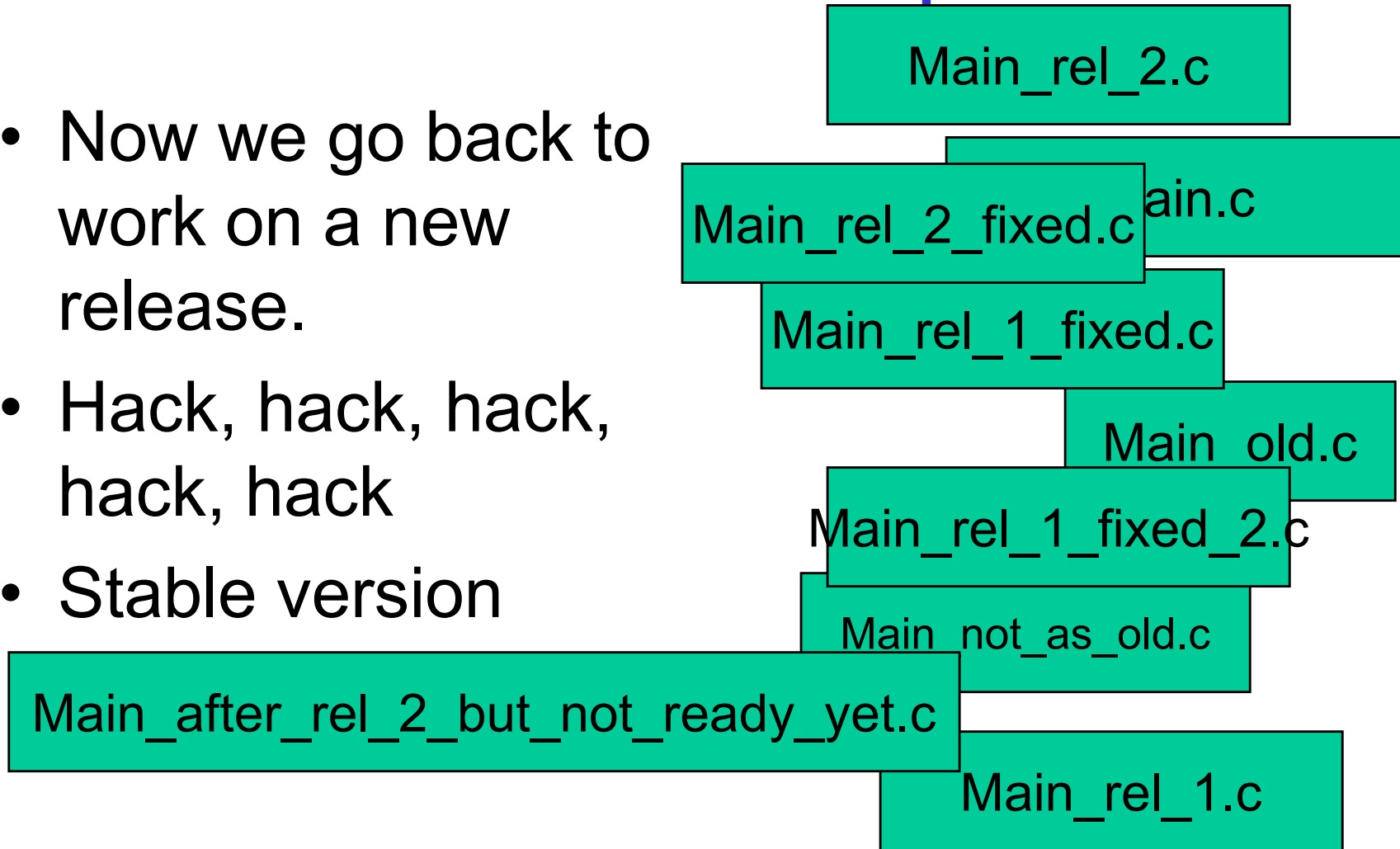Main_rel_1_fixed.c

Main_old.c

Main_rel_1_fixed_2.c

Main_not_as_old.c

Main_rel_1.c
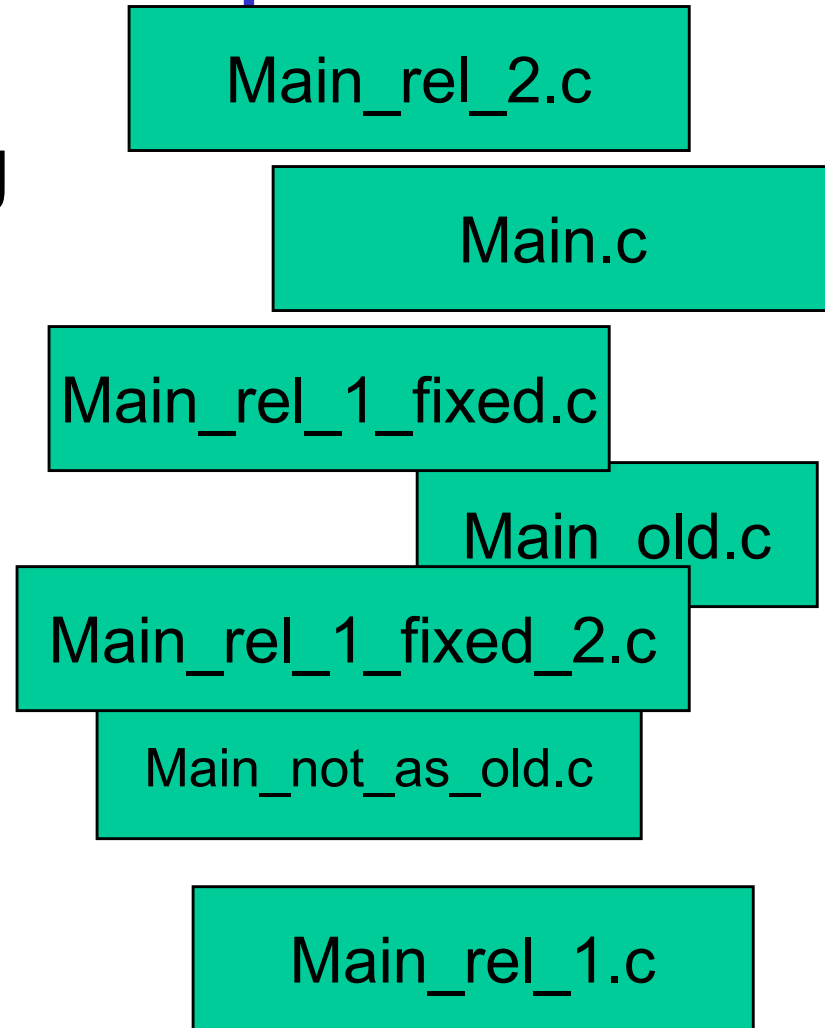
Software Development

- Oh, no!!! A bug in rel_2.

- Hack, hack, hack, hack, hack

- Now have a fixed version.

Main_rel_2.c

Main_rel_2_fixed.c ain.c

Main_rel_1_fixed.c

Main_old.c

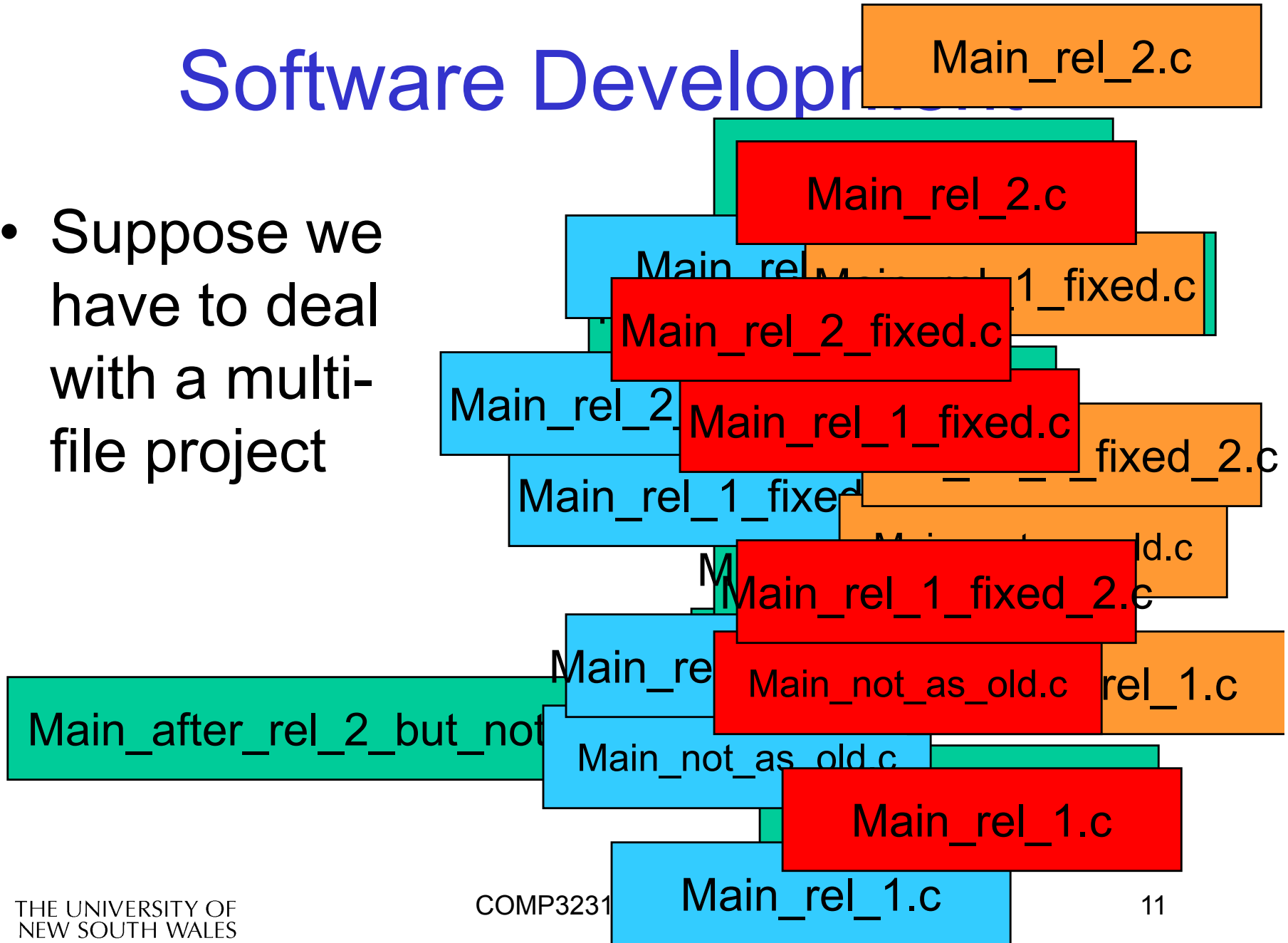Main_rel_1_fixed_2.c

Main_not_as_old.c

Main_rel_1.c

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Software Development

- Now we go back to work on a new release.

- Hack, hack, hack, hack, hack

- Stable version

Main_rel_2.c

Main_rel_2_fixed.c ain.c

Main_rel_1_fixed.c

Main_old.c

Main_rel_1_fixed_2.c

Main_not_as_old.c

Main_after_rel_2_but_not_ready_yet.c

Main_rel_1.c

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Software Development

- Suppose we have to deal with a multi-file project

Main_rel_2.c

Main_rel_2.c

Main_rel_2_fixed.c

Main_rel_1_fixed.c

Main_rel_1_fixed.c

Main_rel_1_fixed_2.c

Main_rel_1_fixed_2.c

Main_not_as_old.c

Main_not_as_old.c

Main_rel_1.c

Main_rel_1.c

Main_after_rel_2_but_not

We need help!!!

- Welcome to SVN
  - Subversion
  - Keeps track of the different versions of your files
  - Keeps track of the relationship between different version files
  - Allows more than one person to work on the files at the same time
  - Allows you to work in different locations

SVN Development Model

SVN
Repository

- Contains the various versions of your files

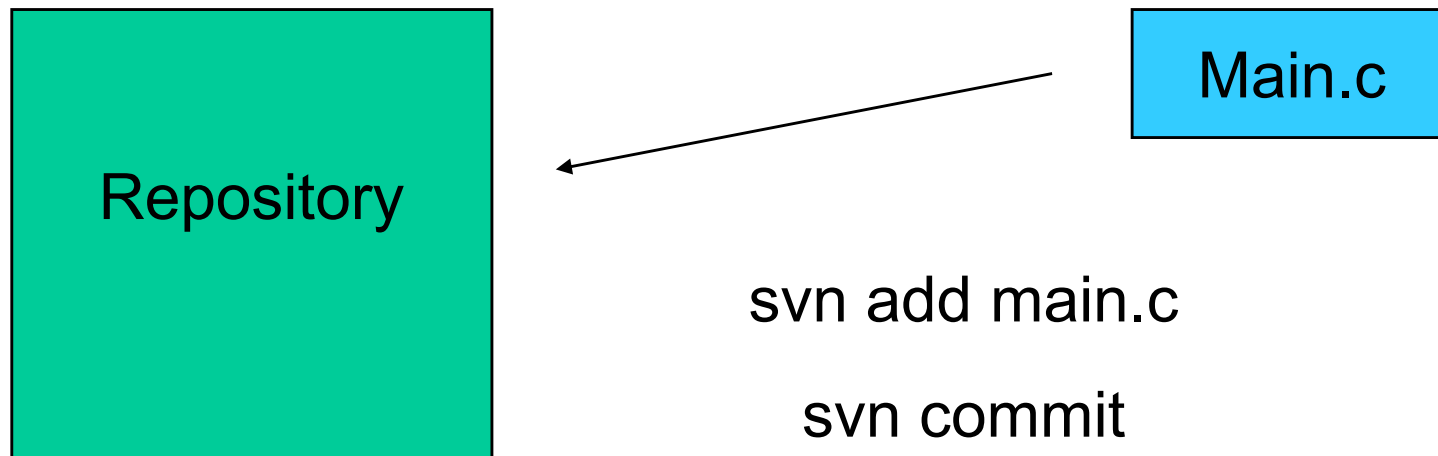- You don't access it directly, only indirectly via svn commands
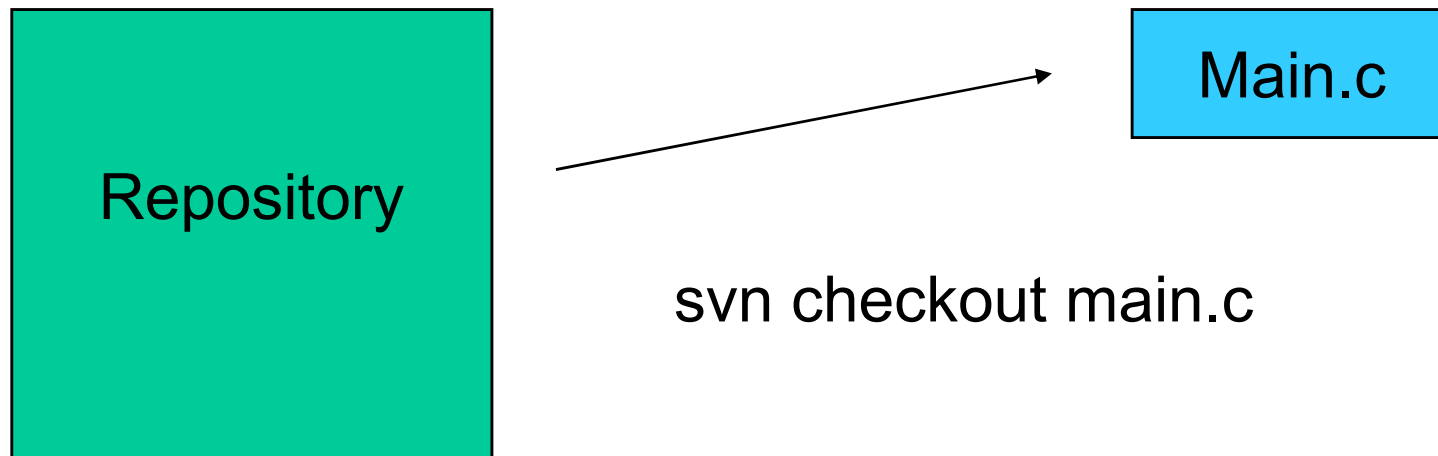
- svnadmin create repository

SVN Development Model

Repository

Main.c

Hack, hack, hack..

SVN Development Model

Repository

Main.c

svn add main.c

svn commit

Add our working copy
of main.c to
repository

SVN Development Model

Repository

Main.c
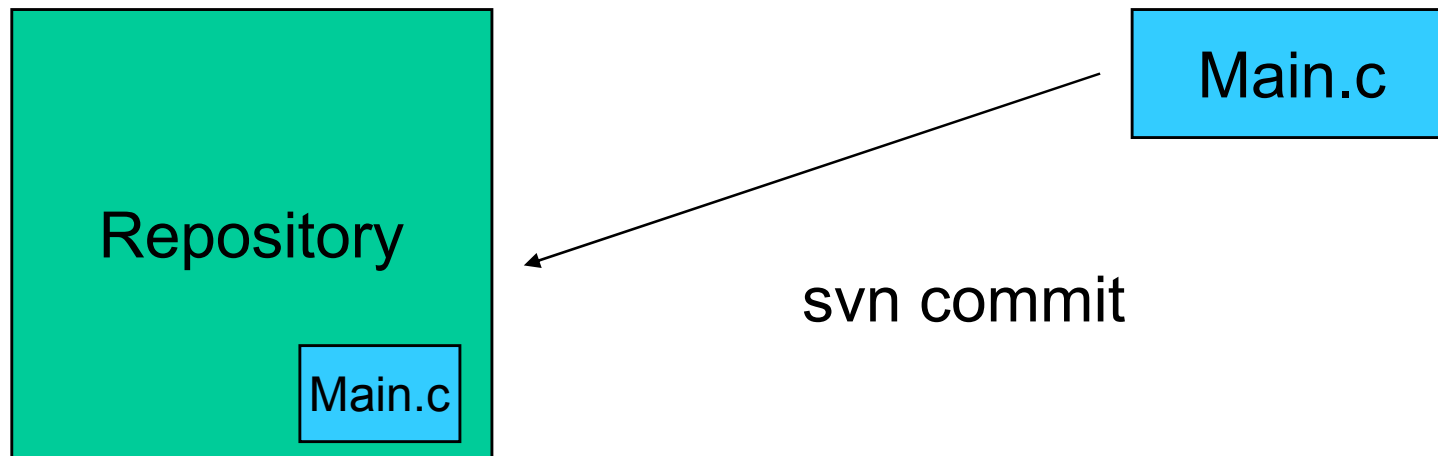
svn checkout main.c

Extracts a working copy of main.c for us to work on (if it already existed in repo)
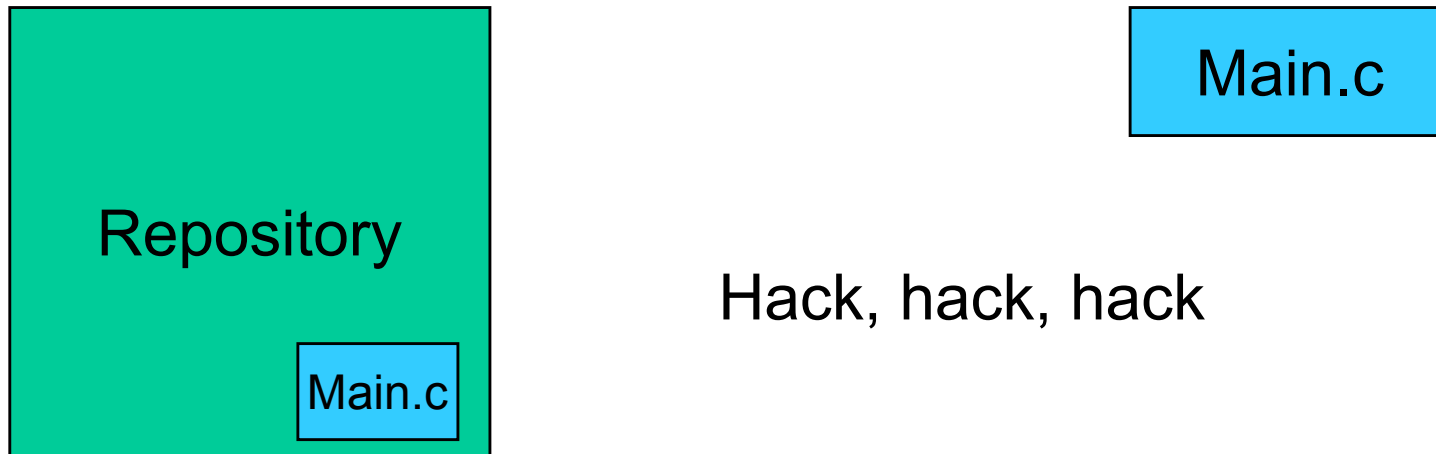
SVN Development Model

Repository

Main.c

Hack, hack, hack

SVN Development Model

Repository

Main.c

Main.c

svn commit
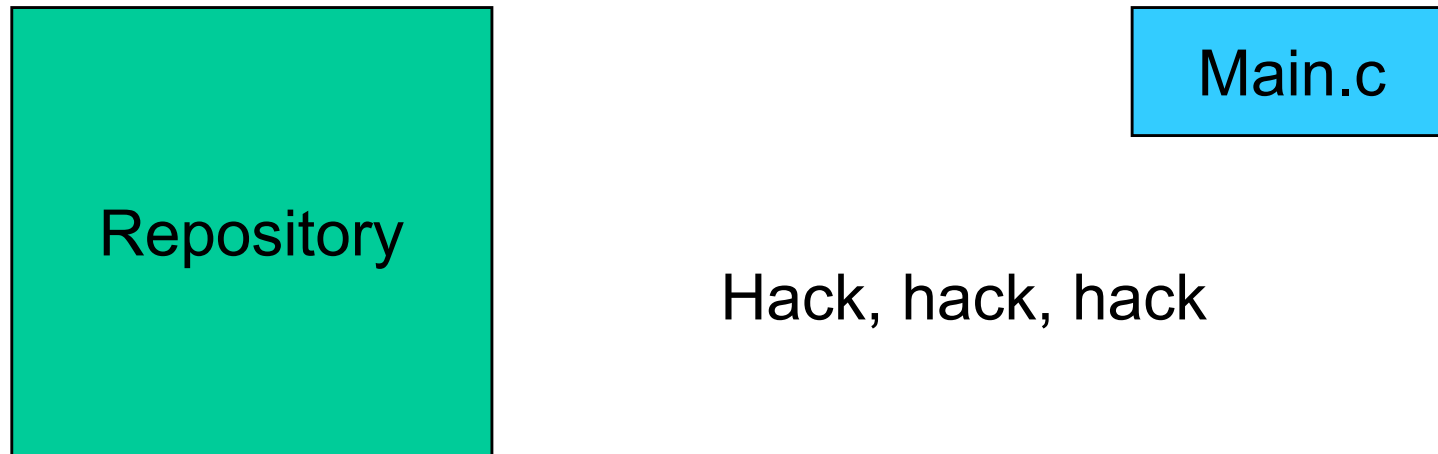
We are at a point where
we wish to save a
version

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SVN Development Model

Main.c

Repository

Main.c

Hack, hack, hack

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SVN Development Model
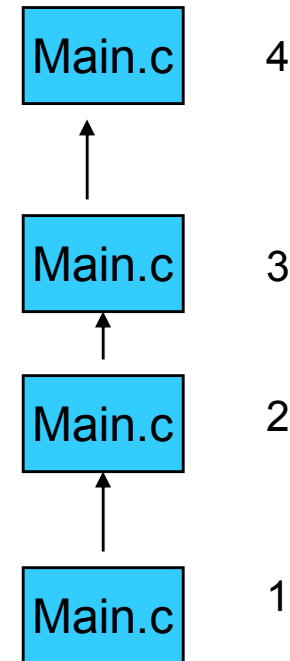

Repository

Main.c

Main.c

.c

svn commit

We are at a point where
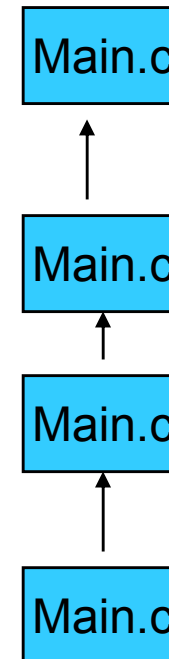we wish to save another
version

SVN Development Model

- We are keeping a copy of each version of main.c

- The first version forms the root of a tree (only the 'trunk' shown here now)

- Each new main.c grows the tree trunk higher

- Each commit increments the repository version number

Main.c   4

↑

Main.c   3
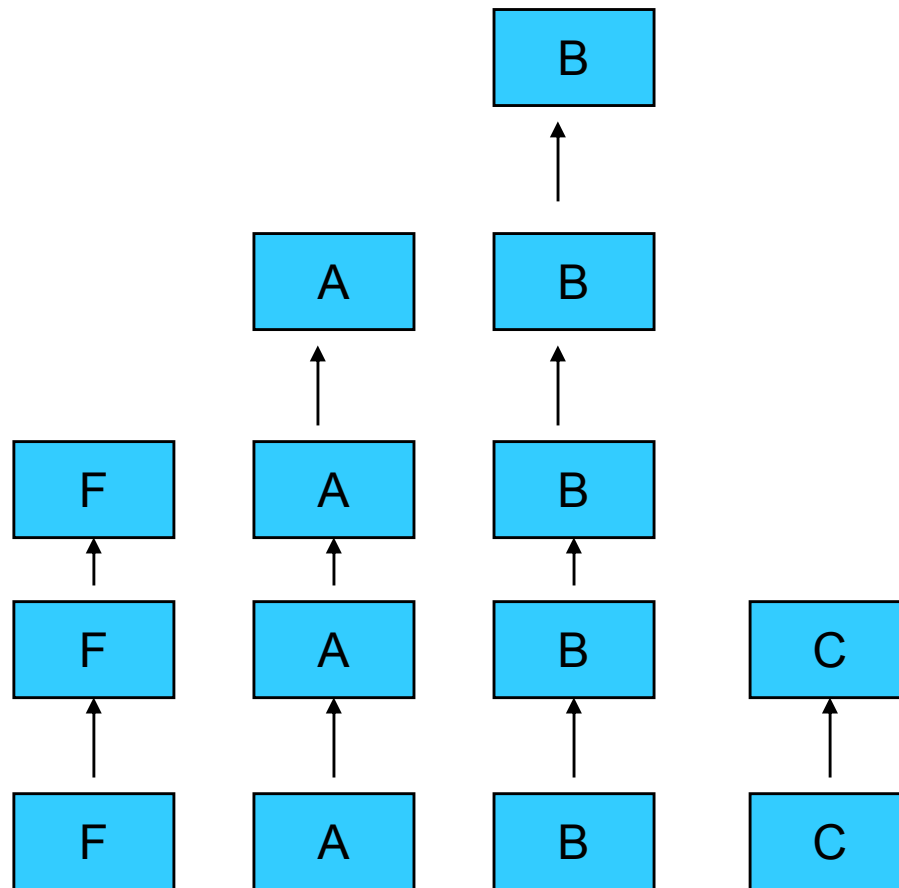
↑

Main.c   2

↑

Main.c   1

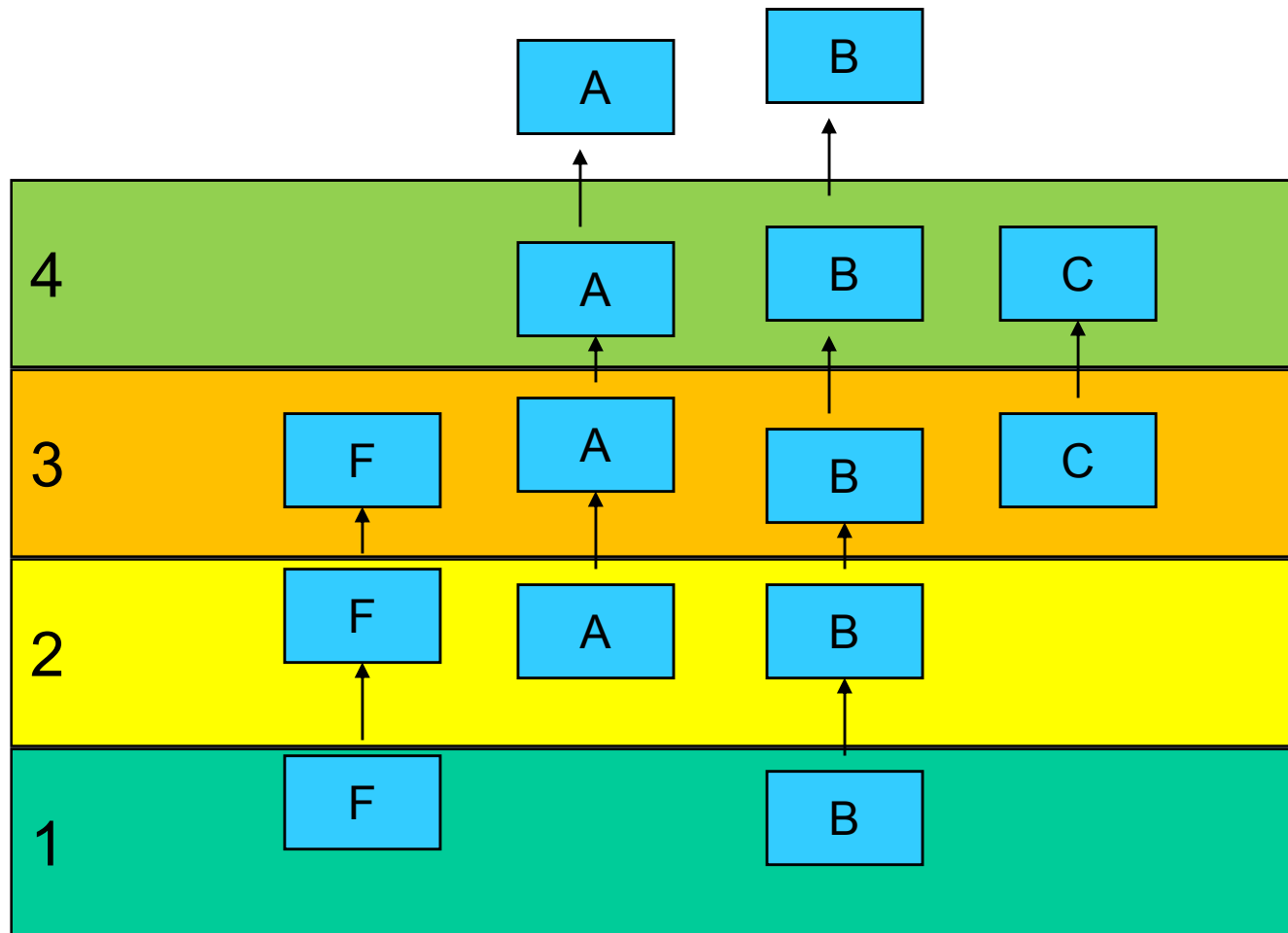# How can we specify a particular version of a file?

- Use dates and times
  - Can be awkward to use (hard to remember when something happens)

- Use SVN numbering
  - commits are numbered sequentially

- SVN branches
  - a named version in time
  - not going to look at this

Main.c

Main.c

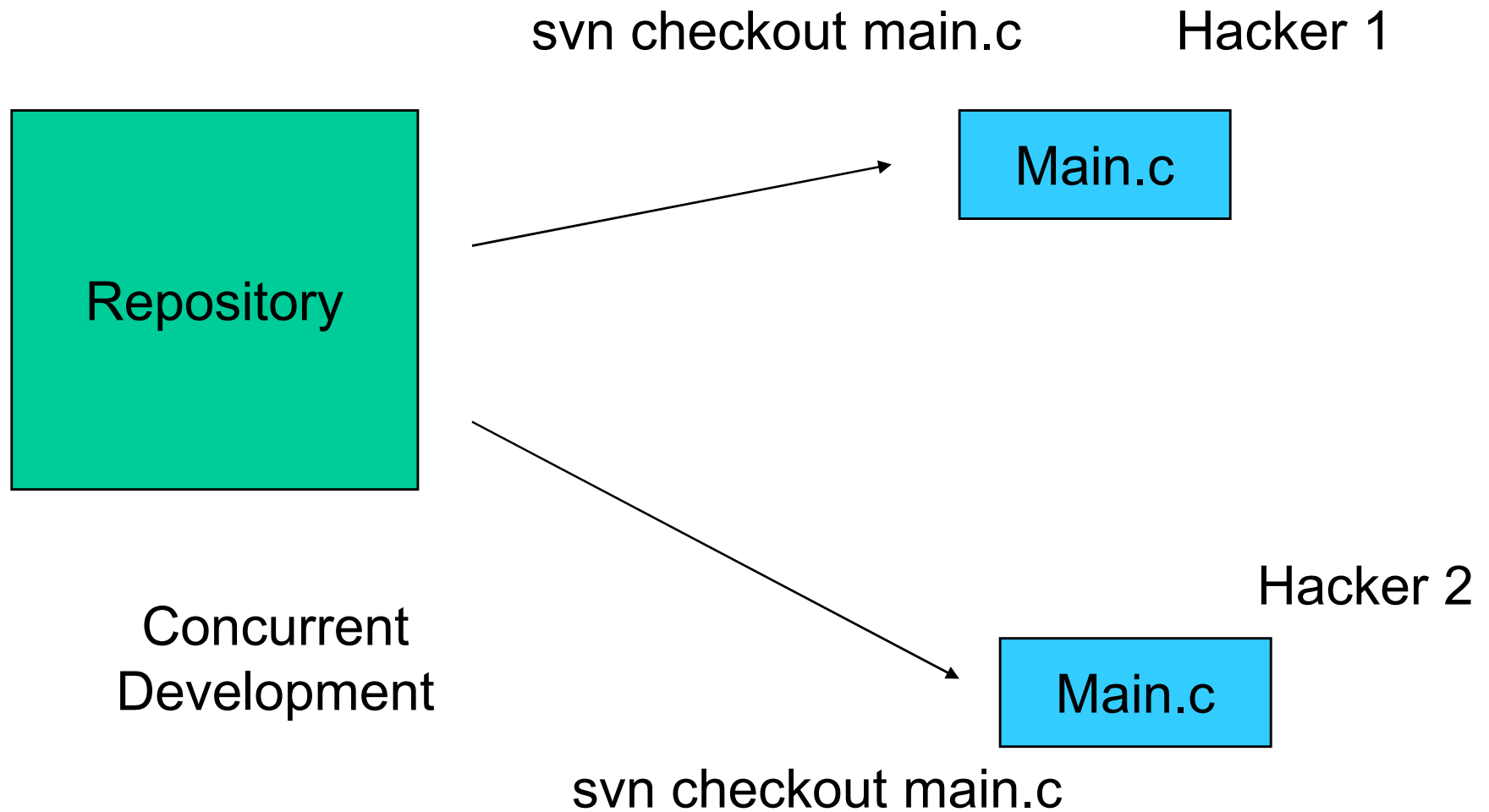Main.c

Main.c

Multiple Files

Versions are based on commits

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SVN Development Model

svn checkout main.c   Hacker 1

Repository

Main.c

Concurrent
Development

Hacker 2

Main.c

svn checkout main.c

SVN Development Model

Hacker 1

svn commit

Main.c

Repository

svn update

How do we handle
when Hacker 1
commits a copy and
hacker 2 becomes
out of date?

Hacker 2

Main.c

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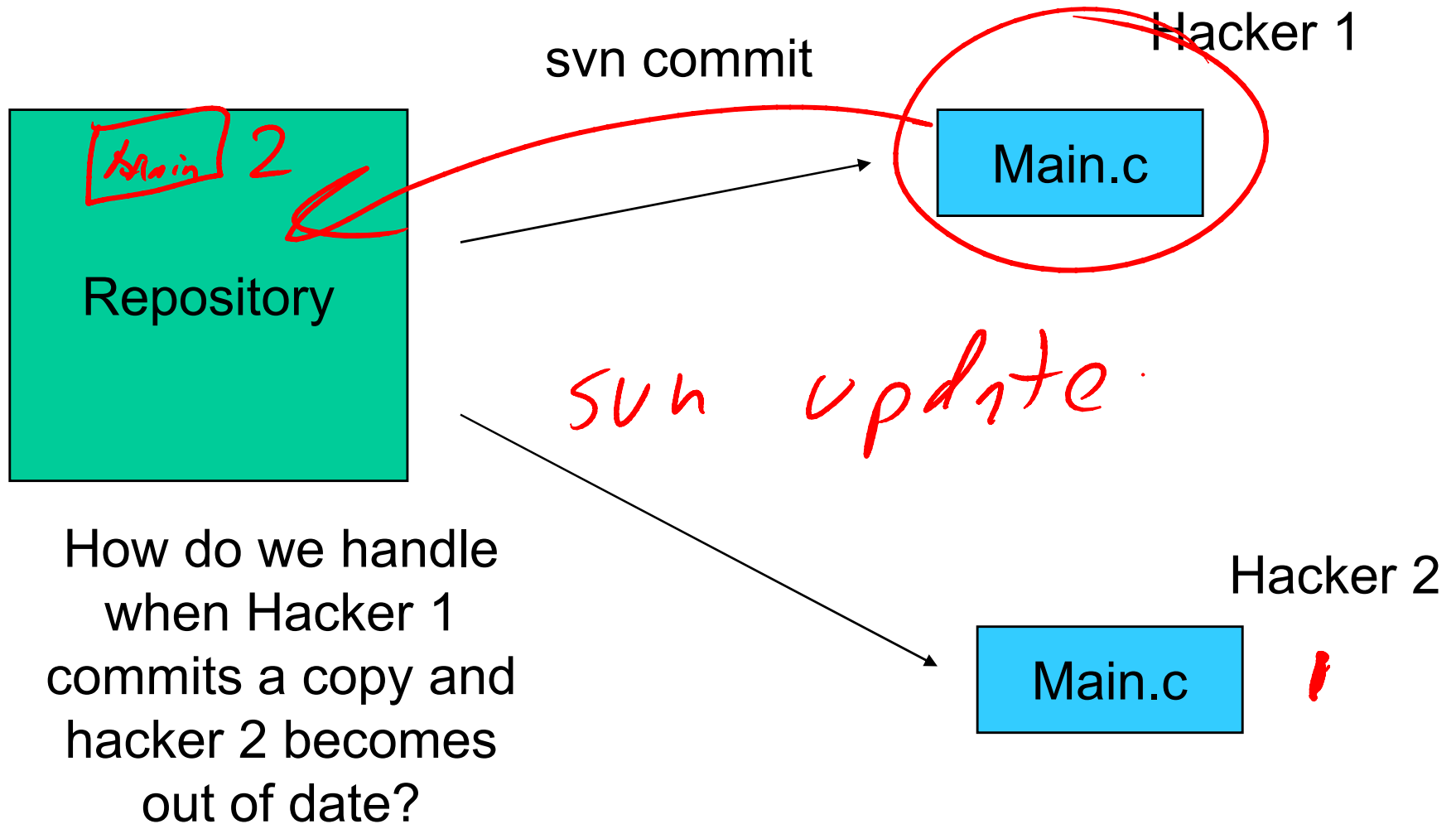
SVN update

- Brings the file (directory, or directory tree) up-to-date with a specified version

  - When no version is specified, it brings it up-to-date with the latest

- svn update

  - Update to latest release

- svn update –r 42 main.c

  - Update to version 42

SVN status

- SVN status provide the "status" of your files

```
?  scratch.c            # file is not under version control
A  stuff/loot/bloo.h    # file is scheduled for addition
C  stuff/loot/lump.c    # file has textual conflicts from an update
D  stuff/fish.c         # file is scheduled for deletion
M  bar.c                # the content in bar.c has local mods
```

Example: Reverting to previous version of a file

% svn revert main.c

removes any local changes you had

% svn diff main.c

displays local changes

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Adding and removing files

- svn add file.c

- svn delete file.c

- svn copy foo bar

- svn move foo bar
  - Note: Like always, you must *commit* to make the changes visible in the repository