The switchr package

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Reproducing results

- Use same version as original author(s)

Developing packages

- Program against latest/devel versions of dependencies

Collaboration

- ▶ Have single set of versions used by all participants

Github

Package repositories

CRAN Archive

SCM commit history

Install the versions we need

- on command
- directly from where they live

Distinct, side-by-side package libraries

- Don't want to clobber our main install to reproduce old result
- Development and analysis

Recreate others' environments

Publish our environments

- So that others can recreate them

Generalized Package repository

- List of packages
  - where their source lives
  - info necessary to retrieve them
- Optional version restrictions

Creating a new library

switchTo("mynewlib")

```
Switched to the 'mynewlib' computing environment. 29 package
 To switch back to your previous environment type switchBac
```

Switching between libraries

switchBack()

Reverted to the 'mynewlib' computing environment. 29 package
 To switch back to your previous environment type switchBack

switchTo("mynewlib")

Switched to the 'mynewlib' computing environment. 29 package
 To switch back to your previous environment type switchBack

Creating a manifest

```
man = GithubManifest("gmbecker/fastdigest",
"gmbecker/RCacheSuite", "duncantl/CodeDepends") man

A package manifest (PkgManifest object)

Contains 3 packages and 5 dependency repositories

Packages:
          name type
1  fastdigest  git
2 RCacheSuite  git
3 CodeDepends  git
```

Installing from a manifest

install$_p$ackages("RCacheSuite", man)
head(installed.packages()[,c("Package", "Version")], 4)

```
                Package        Version
CodeDepends "CodeDepends" "0.3-5"
fastdigest  "fastdigest"  "0.5-1"
RCacheSuite "RCacheSuite" "0.0-1"
XML         "XML"         "3.98-1.1"
```

Generating a manifest from a library

man2 = libManifest() man2

```
A seeding manifest (SessionManifest object)

Describes a cohort of 4 package versions.
4 packages are listed in the underlying package manifest

Package versions:
          name   version
1 CodeDepends     0.3-5
2  fastdigest     0.5-1
3 RCacheSuite     0.0-1
4         XML  3.98-1.1
```

Publishing a manifest to a Gist

library(switchrGist) publishManifest(man, Gist())

Traveling back in time

man3.0 = rVersionManifest("3.0.0") man3.0

```
 "..."          "..."
5006 "zmatrix"    "tarball"
5007 "zoeppritz" "tarball"
5008 "zoo"        "tarball"
5009 "zooimage"  "tarball"
5010 "zyp"        "tarball"
```