

Writing R Extensions

<http://cran.r-project.org/doc/manuals/R-exts.html>



ISA Advanced R Workshop

24.3.2010

Work Flow

1. Write your functions.
2. Add necessary package ingredients (usually using utility functions).
3. Publish.

Necessary Ingredients

- Package Directory: `.../foo/`
Named after the package, and includes...
- DESCRIPTION file
- Subdirectories:
 - R
 - man

DESCRIPTION file

- ***Package:** pkgname
- ***Version:** 0.5-1
- ***License:** GPL (≥ 2)
- ***Description:**
A short (**one** paragraph) description of what the package does and why it may be useful.
- ***Title:** My First Collection of Functions
- ***Author:** Joe Developer <Joe.Developer@some.domain.net>
- ***Maintainer:** Joe Developer Joe.Developer@some.domain.net
- **Date:**
- **Depends:** R ($\geq 1.8.0$), nlme
- **Suggests:** ggplot2
- **URL:** <http://www.r-project.org>, <http://www.another.url>
- ...

.../foo/R Directory

- Includes your functions as .R, .S, .q, .r, .s files.
- Only ASCII file names and contents!

.../foo/man Directory

- .Rd files for **all** user level objects:
 - \name{name}
 - \alias{topic}
 - \title{Title}
 - \description{...}
 - \usage{ fun(arg1,arg2,...) }
 - \arguments{...}
 - \details{...}
 - \value{...}
 - \references{...}
 - \note{...}
 - \author{...}
 - \seealso{...}
 - \examples{...}
 - \keywords{...}

Utility Functions

- **package.skeleton()**
- **prompt(), promptPackage(),
promptData(), promptClass(),
promptMethods()**
- **ROxygen**

Optional Ingredients

- NAMESPACES
- .First.lib ;
- Subdirectories:
 - data
 - demo
 - po (internationalization)
 - inst/man/index.html
- More options at:
<http://cran.r-project.org/doc/manuals/R-exts.html>

Publishing your Package

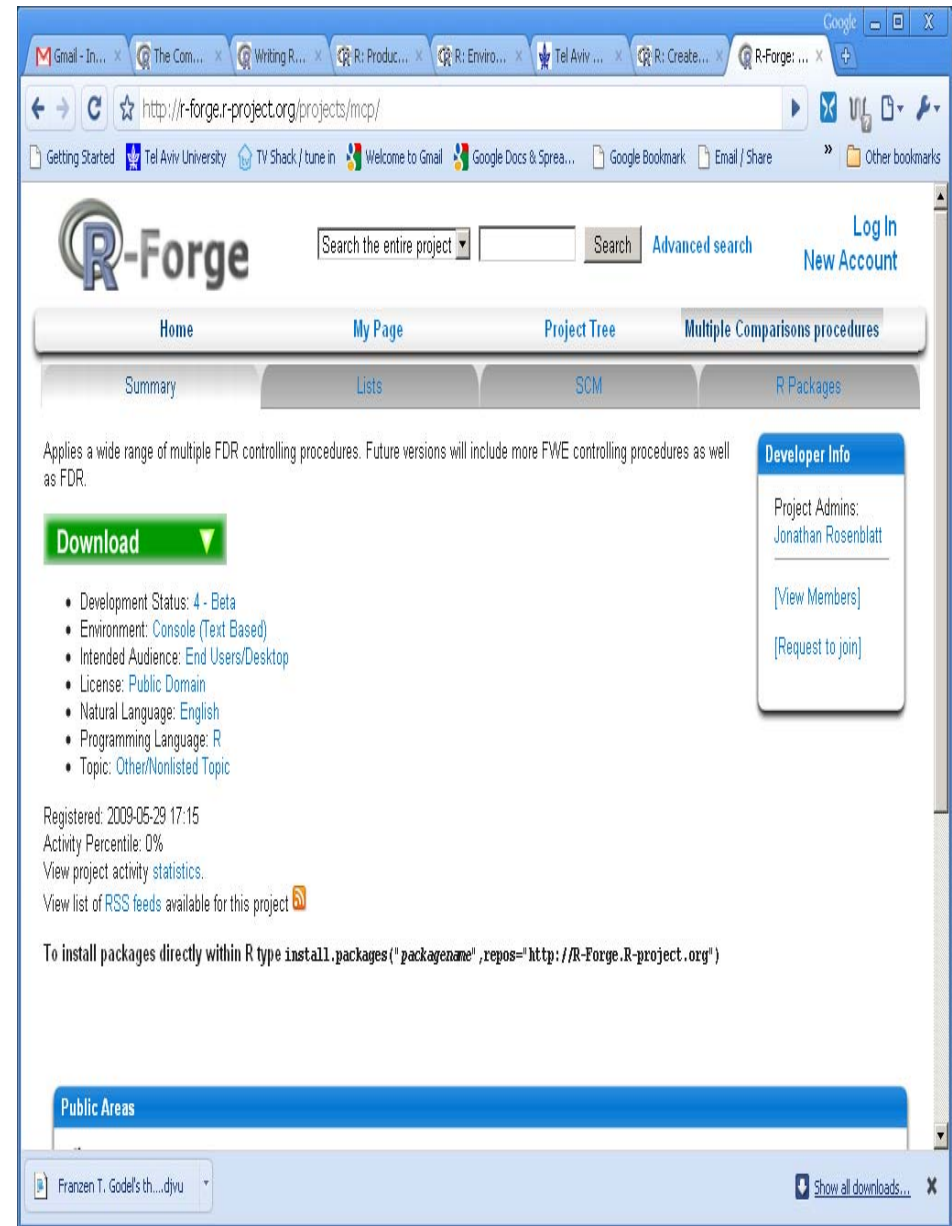
- Manually:
 - R CMD build –help
 - R CMD check –help
 - R CMD install--help OR install.packages()
- **CRAN**
- Announce at: R-packages, R Journal
- R-Forge (requires CVS, SVN)
- BioConductor

Publishing in CRAN

- Before Submitting:
 - R CMD build: Builds the tar.gz file.
 - R CMD check: Checks for errors.
 - Study example output in *foo.Rcheck/foo-Ex.Rout*
 - Proof read in-line help and manual in *foo.Rcheck/foo-manual.pdf*
- Submitting:
 - Upload to <ftp://CRAN.R-project.org/incoming/>
user: **anonymous**, pass: **your-email**
 - Send email notice to CRAN@R-project.org
- Note: No precompiled binaries allowed.

R Forge

- Like “Source Forge”.
- CVS/SVN repository for collaboration.
- Daily build.
- Direct download and install.
- Easy submitting to CRAN.
- Feature and bug tracking.
- Mailing list.



Intro Practice