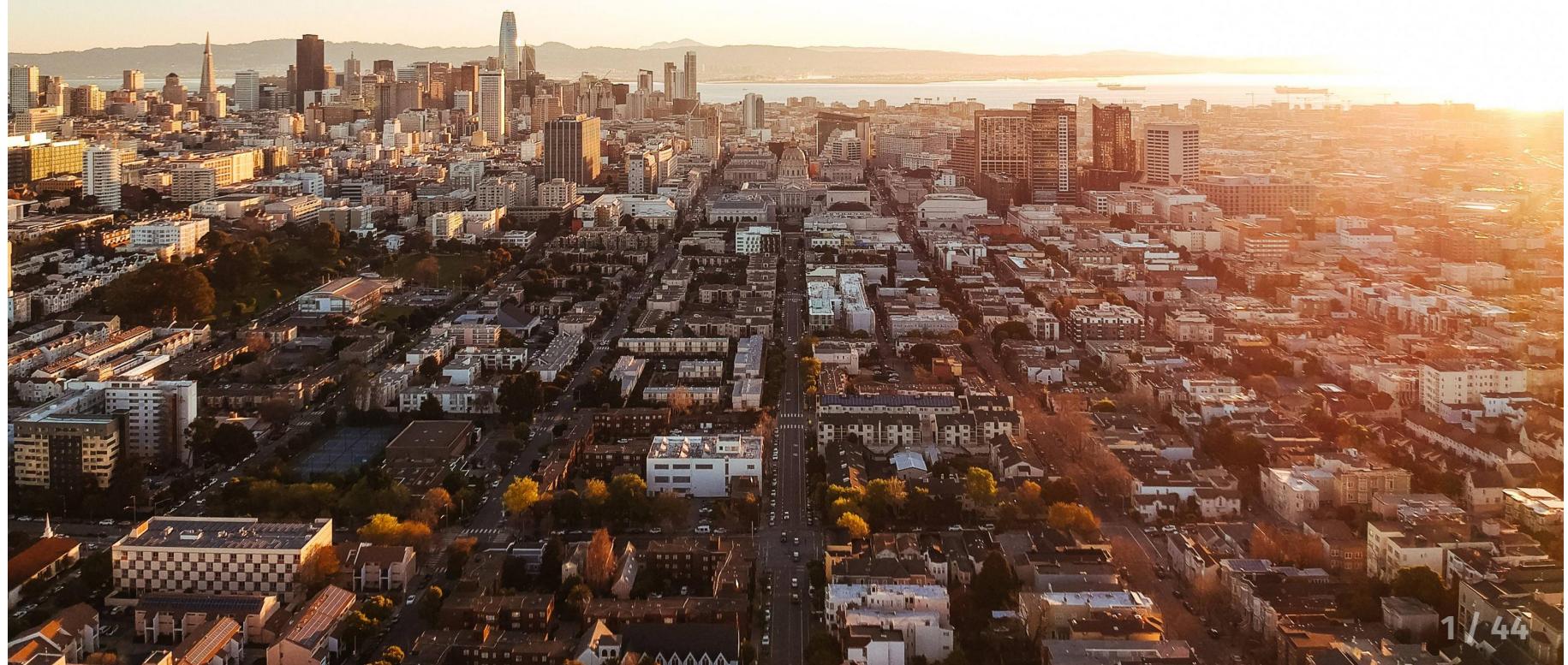


# My Organization's First R package

Setup R Packages

`rstudio::conf(2020L)`



# devtools

Tools to make an R developer's life easier

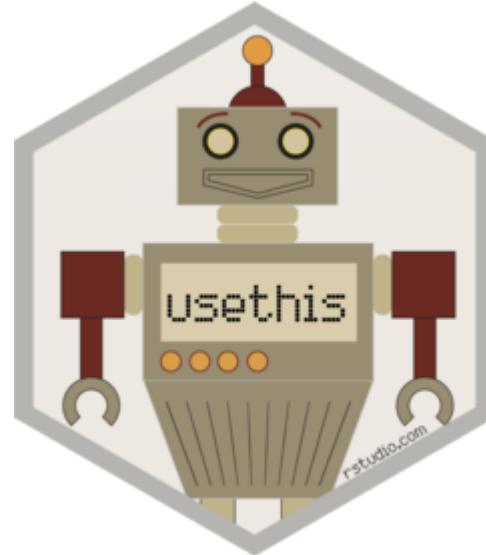
We'll be using functions like `load_all()`, `build()`, `document()`, `test()`, and `check()` throughout the day.



# usethis

Set up commonly used 📦 components

We'll be using functions like `create_package()`, `use_r()`, `use_test()`, and many more throughout the day.



# shinRa

An R package for the data science team at the Shinra Electric Power Company, also known as Shinra, Inc.

What will it do? Custom ggplot2 themes, reports, data connections and filtering, and more.



# create\_package("shinRa")

```
library(usethis)
create_package("shinRa")
```

```
library(usethis)
create_package("shinRa")
```

```
## ✓ Creating '/var/folders/03/9x7925g54mncswxx06wpkx100000gn/T/Rtmps6CMKz/_file14b3d54cf1ad2/shinRa'
## ✓ Setting active project to '/private/var/folders/03/9x7925g54mncswxx06wpkx100000gn/T/Rtmps6CMKz/_file14b3d54cf1ad2/shinRa'
## ✓ Creating 'R/'
## ✓ Writing 'DESCRIPTION'

## Package: shinRa
## Title: What the Package Does (One Line, Title Case)
## Version: 0.0.0.9000
## Authors@R (parsed):
##   * First Last <first.last@example.com> [aut, cre] (<https://orcid.org/YOUR-ORCID-ID>)
## Description: What the package does (one paragraph).
## License: `use_mit_license()`, `use_gpl3_license()` or friends to pick a
##   license
## Encoding: UTF-8
## LazyData: true
## Roxygen: list(markdown = TRUE)

## ✓ Writing 'NAMESPACE'
## ✓ Writing 'shinRa.Rproj'
## ✓ Adding '.Rproj.user' to '.gitignore'
## ✓ Adding '^shinRa\\.Rproj$', '^\\.Rproj\\\\.user$' to '.Rbuildignore'
## ✓ Setting active project to '<no active project>'

## /var/folders/03/9x7925g54mncswxx06wpkx100000gn/T//Rtmps6CMKz/_file14b3d54cf1ad2/shinRa
```

```
create_package("shinRa")
```

```
shinRa
├── .Rbuildignore
├── .gitignore
├── DESCRIPTION
├── NAMESPACE
└── R/
    └── shinRa.Rproj
```

```
create_package("shinRa")
```



```
create_package("shinRa")
```



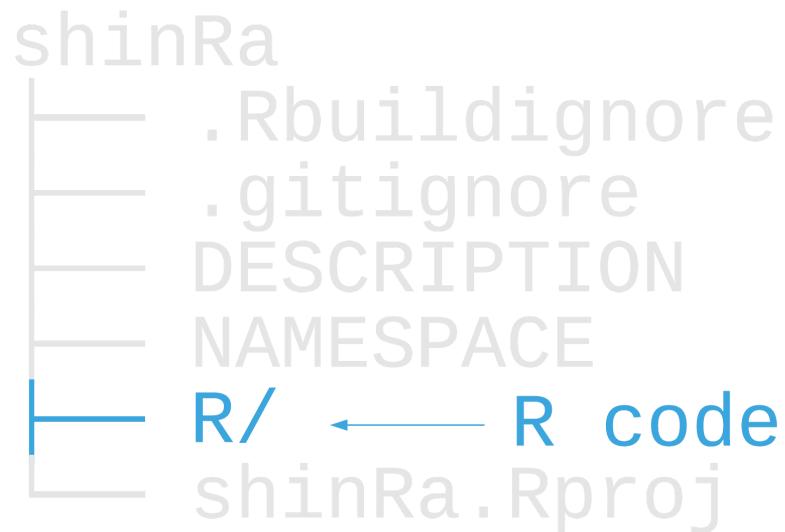
```
pkg info  
author info  
dependencies
```

```
create_package("shinRa")
```



export  
functions

```
create_package("shinRa")
```



```
create_package("shinRa")
```



## Your Turn 1

**Load usethis and devtools if you haven't.**

**Open the DESCRIPTION file and take a look. It's very generic!**

**Run edit\_r\_profile(). Copy and paste this code into your R profile, but change it to your name and email. If you would like to add your ORCID ID see ?use\_description for an example for an example that includes that.**

**Then, restart your R session (Session > Restart R).**

if you don't want to change your R profile, you can just run the code in the console without running `edit_r_profile()` or restarting

**When you've restarted, run `use_description()` to replace the DESCRIPTION file.**

**Open the DESCRIPTION file and take a look around.**

## Your Turn 1: Stretch Goal

**Read the help page for `use_usethis()`. If there are any of these that you'd like available in all interactive sessions, run the function to get the related code and add it to your R Profile.**

**avalanchr**

An R package for the data science team for the AVALANCHE ecological insurgency organization.



```
Package: shinRa
Title: What the Package Does (One Line, Title
Case)
Version: 0.0.0.9000
Authors@R:
  person(given = "Malcolm",
          family = "Barrett",
          role = c("aut", "cre"),
          email = "malcolmbarrett@gmail.com")
Description: What the package does (one
paragraph).
License: MIT + file LICENSE
Encoding: UTF-8
LazyData: true
Roxygen: list(markdown = TRUE)
```

## Package: shinRa

Title: What the Package Does (One Line, Title Case)

Version: 0.0.0.9000

Authors@R:

```
person(given = "Malcolm",
       family = "Barrett",
       role = c("aut", "cre"),
       email = "malcolmbarrett@gmail.com")
```

Description: What the package does (one paragraph).

License: MIT + file LICENSE

Encoding: UTF-8

LazyData: true

Roxygen: list(markdown = TRUE)

## Valid package names:

- 1 Consist of letters, numbers, or periods.**
- 2 Start with a letter.**
- 3 Do not end with a period**

**Use the available package to check your  
package name**

## Naming your package

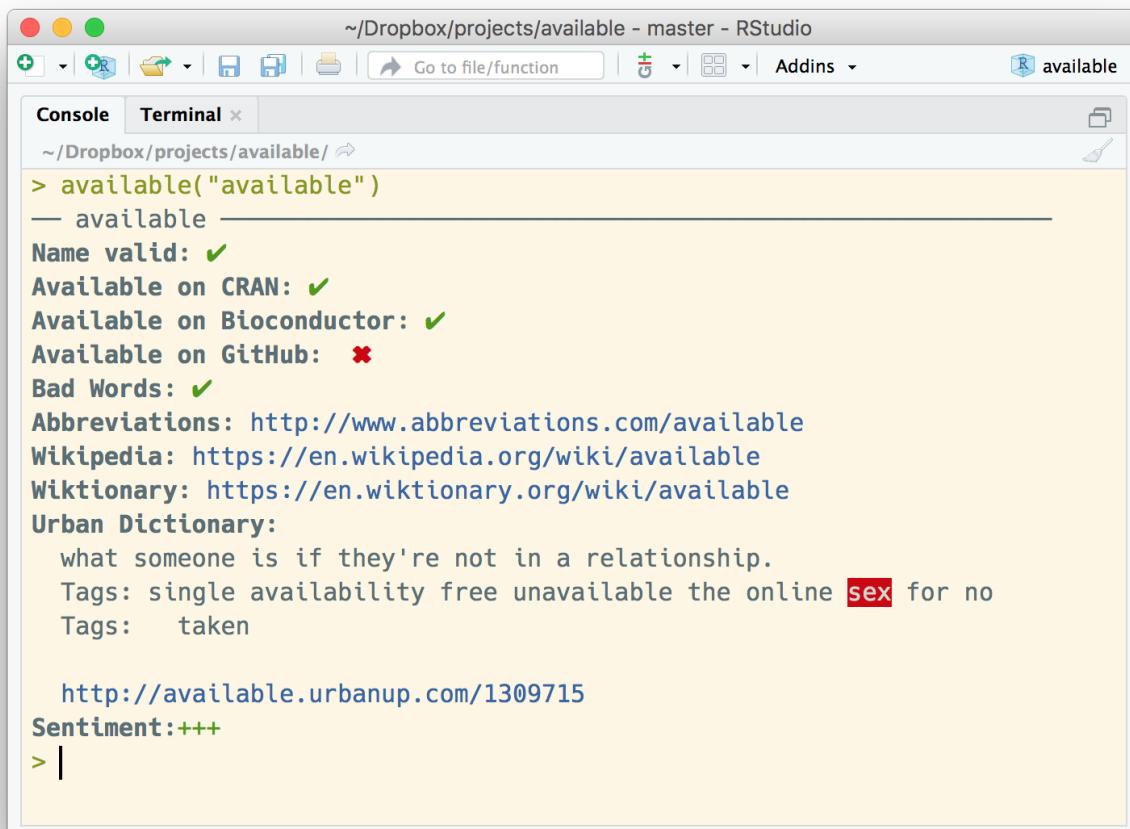
```
available::suggest("Shinra Electric Power")
```

```
## shinrar
```

Also see "Naming Things"

# Is the name available?

```
available::available("package.name")
```



The screenshot shows the RStudio interface with the title bar "~/Dropbox/projects/available - master - RStudio". The console tab is active, displaying the command > available("available") and its output. The output includes:

- Name valid: ✓
- Available on CRAN: ✓
- Available on Bioconductor: ✓
- Available on GitHub: ✘
- Bad Words: ✓
- Abbreviations: <http://www.abbreviations.com/available>
- Wikipedia: <https://en.wikipedia.org/wiki/available>
- Wiktionary: <https://en.wiktionary.org/wiki/available>
- Urban Dictionary:
  - what someone is if they're not in a relationship.
  - Tags: single availability free unavailable the online sex for no
  - Tags: taken
- <http://available.urbanup.com/1309715>

Sentiment:+++

> |

Package: shinRa

Title: What the Package Does (One Line, Title Case)

Version: 0.0.0.9000

Authors@R:

```
person(given = "Malcolm",
       family = "Barrett",
       role = c("aut", "cre"),
       email = "malcolmbarrett@gmail.com")
```

Description: What the package does (one paragraph).

License: MIT + file LICENSE

Encoding: UTF-8

LazyData: true

Roxygen: list(markdown = TRUE)

The screenshot shows a Mac OS X window titled "CRAN – Package ggplot2". The window has a title bar with three red, yellow, and green buttons. The main content area is divided into sections: "Title" and "Description" on the left, and detailed package information on the right.

**Title:** `ggplot2: An implementation of the Grammar of Graphics`

**Description:** An implementation of the grammar of graphics in R. It combines the advantages of both base and lattice graphics: conditioning and shared axes are handled automatically, and you can still build up a plot step by step from multiple data sources. It also implements a sophisticated multidimensional conditioning system and a consistent interface to map data to aesthetic attributes. See the [ggplot2](#) website for more information, documentation and examples.

**Version:** 1.0.0

**Depends:** R ( $\geq$  2.14), stats, methods

**Imports:** [plyr](#) ( $\geq$  1.7.1), [digest](#), grid, [gttable](#) ( $\geq$  0.1.1), [reshape2](#), [scales](#) ( $\geq$  0.2.3), [proto](#), [MASS](#)

**Suggests:** [quantreg](#), [Hmisc](#), [mapproj](#), [maps](#), [hexbin](#), [maptools](#), [multcomp](#), [nlme](#), [testthat](#), [knitr](#), [mgcv](#)

**Enhances:** [sp](#)

**Published:** 2014-05-21

**Author:** Hadley Wickham, Winston Chang

**Maintainer:** Hadley Wickham <h.wickham at gmail.com>

**BugReports:** <https://github.com/hadley/ggplot2/issues>

LGPL 2 | GPL-2

image from [R Packages, ed. 2](#)

```
Package: shinRa
Title: What the Package Does (One Line, Title
       Case)
Version: 0.0.0.9000
Authors@R:
  person(given = "Malcolm",
         family = "Barrett",
         role = c("aut", "cre"),
         email = "malcolmbarrett@gmail.com")
Description: What the package does (one
             paragraph).
License: MIT + file LICENSE
Encoding: UTF-8
LazyData: true
Roxygen: list(markdown = TRUE)
```

## Adding an author with desc

```
desc::desc_add_author(  
  given = "Rufus",  
  family = "Shinra",  
  role = "ctb",  
  email = "rufus@shinrainc.com",  
  comment = list("ORCID-ID" = "902348-439034"))
```

# Adding an author with desc

```
desc::desc_add_author(  
  given = "Rufus",  
  family = "Shinra",  
  role = "ctb",  
  email = "rufus@shinrainc.com",  
  comment = list("ORCID-ID" = "902348-439034"))  
)
```

## Adding an author with desc

```
desc::desc_add_author(  
  given = "Rufus",  
  family = "Shinra",  
  role = "ctb",  
  email = "rufus@shinrainc.com",  
  comment = list("ORCID-ID" = "902348-439034"))
```

## Adding an author with desc

```
desc::desc_add_author(  
  given = "Rufus",  
  family = "Shinra",  
  role = "ctb",  
  email = "rufus@shinrainc.com",  
  comment = list("ORCID-ID" = "902348-439034"))  
)
```

# R package roles

Code	Role
cre	Maintainer
aut	Author
ctb	Contributer
cph	Copyright-holder

Full list: <http://www.loc.gov/marc/relators/relaterm.html>

## Your Turn 2

Add a new author to `avalanchr` using `desc::desc_add_author()`. Set given to "Barret", family to "Wallace", and role to "aut".

In `DESCRIPTION`, change the title to "Tools for the Avalanche Data Science Team"

Change the Description field to "A set of tools to use within the Avalanche Data Science team. This package contains functions for connecting to data bases, R markdown templates, ggplot2 themes, and more."

Run `use_tidy_description()` to clean up the file.

```
Package: shinRa
Title: What the Package Does (One Line, Title
       Case)
Version: 0.0.0.9000
Authors@R:
  person(given = "Malcolm",
         family = "Barrett",
         role = c("aut", "cre"),
         email = "malcolmbarrett@gmail.com")
Description: What the package does (one
             paragraph).
License: MIT + file LICENSE
Encoding: UTF-8
LazyData: true
Roxygen: list(markdown = TRUE)
```

`use_*_licence()`

`use_mit_license("Company Name")`. Check the help page for more.

## use\_\*\_licence()

use\_mit\_license("Company Name"). Check the help page for more.

**Help with open-source licenses:**

<https://choosealicense.com/>

**Help with proprietary licenses:**

<http://www.binpress.com/license-generator/>

# Proprietary licenses

**Put this in your DESCRIPTION file:**

License: file LICENSE

**Put this in your LICENSE file:**

Proprietary

Do not distribute outside of Shinra, Inc.

**See also "Copyright in Closed-Source R Packages: The Right Way"**

## Your Turn 3

Run `use_mit_license("Shinra, Inc.")`. What changed?

## Your Turn 3: Stretch Goal

Add "Shinra, Inc." as an author with the role of copyright holder.

Change the license to use the proprietary license above.

```
Package: shinRa
Title: What the Package Does (One Line, Title
Case)
Version: 0.0.0.9000 ← use_version()
Authors@R:
  person(given = "Malcolm",
         family = "Barrett",
         role = c("aut", "cre"),
         email = "malcolmbarrett@gmail.com")
Description: What the package does (one
  paragraph).
License: MIT + file LICENSE
Encoding: UTF-8
LazyData: true
Roxygen: list(markdown = TRUE)
```

```
Package: shinRa
Title: What the Package Does (One Line, Title
       Case)
Version: 0.0.0.9000
Authors@R:
  person(given = "Malcolm",
          family = "Barrett",
          role = c("aut", "cre"),
          email = "malcolmbarrett@gmail.com")
Description: What the package does (one
             paragraph).
License: MIT + file LICENSE
Encoding: UTF-8
LazyData: true
Roxygen: list(markdown = TRUE)
```

documentation  
settings

```
Package: shinRa
Title: What the Package Does (One Line, Title
       Case)
Version: 0.0.0.9000
Authors@R:
  person(given = "Malcolm",
         family = "Barrett",
         role = c("aut", "cre"),
         email = "malcolmbarrett@gmail.com")
Description: What the package does (one
             paragraph).
License: MIT + file LICENSE
Encoding: UTF-8
→ LazyData: true
Roxygen: list(markdown = TRUE)
```

add data

# Setting up git and GitHub

# Setting up git and GitHub

`use_git(), use_github()`

# Setting up git and GitHub

`use_git(), use_github()`

`create_from_github() to clone`

# Setting up git and GitHub

`use_git()`, `use_github()`

`create_from_github()` to clone

`pr_init()` and **friends** to do pull requests

# Setting up git and GitHub

`use_git()`, `use_github()`

`create_from_github()` to clone

`pr_init()` and friends to do pull requests

Other `usethis` functions for setting up GitHub, e.g. labels, issues, contributing guidelines, etc