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FALL, 2017

WEEK 01
LECTURE 01B

QUANTITATIVE ANALYSIS

INTRO TO R

AGENDA

1. Working with Packages
2. Working with Projects
3. Exploring Data Frames

1 WORKING WITH PACKAGES

WHAT IS A PACKAGE?

- Packages are collections of:
  - ✓ functions
  - ✓ data
  - ✓ compiled code
- Most packages for R are available through CRAN (https://cran.r-project.org), which contains peer reviewed software that can easily be downloaded and installed by end users.

INSTALLING PACKAGES

```
utils::install.package("packageName")
```

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```
utils::install.package("packageName")
```

Example - installing the `tidyverse` package:

```
install.package("tidyverse")
```

Packages only need to be installed once *per profile*. This method only works for packages available on CRAN.

UPDATING PACKAGES

```
utils::update.packages()
```

This will update *all* packages. There is a separate function for updating just one package.

LOADING PACKAGES

```
utils::library("packageName")
```

Example - loading the `tidyverse` package:

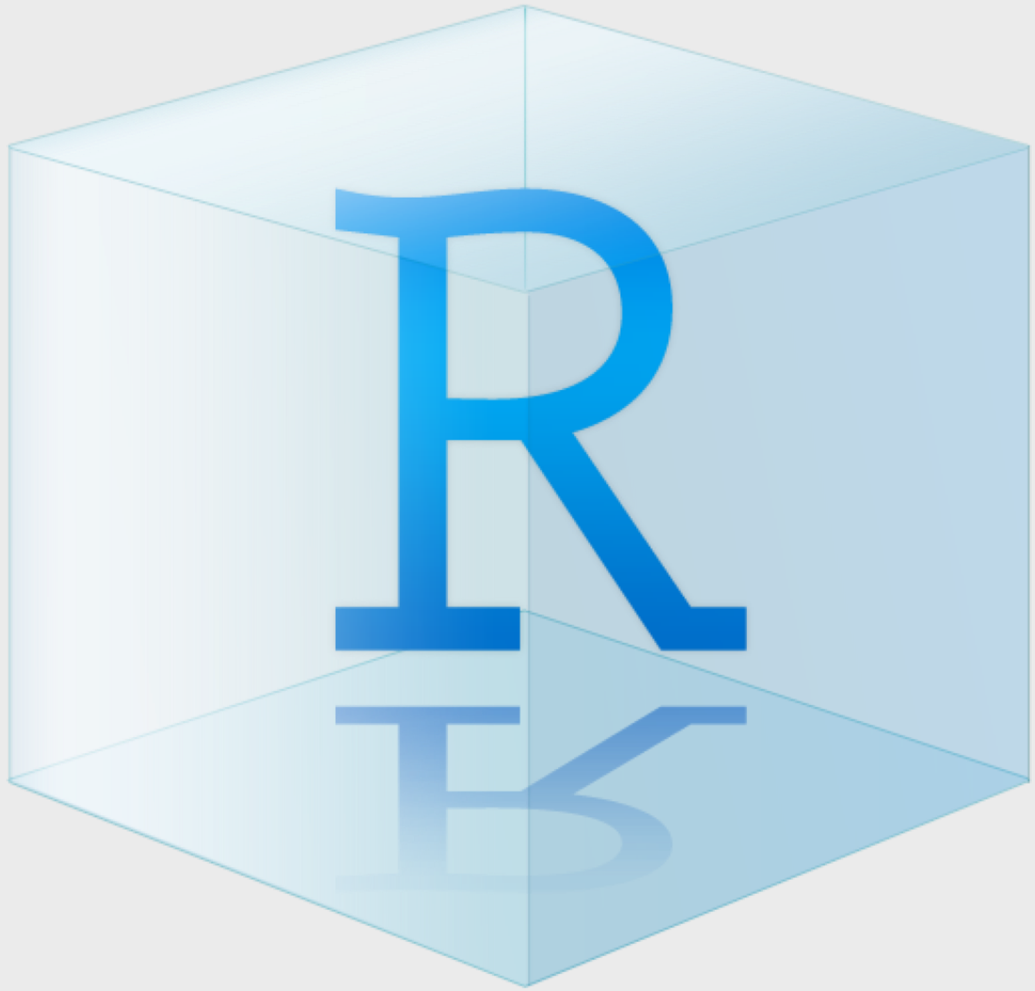
```
library("tidyverse")
```

Packages need to be loaded at the start of *every* session.

2 WORKING WITH PROJECTS

WHAT IS A PROJECT?

- Projects in RStudio are used for organization purposes.
- They automatically change the working directory to the project's folder, and all output are automatically saved to them.
- This characteristic means that your code never has to be dependent on specific file paths.
    - Projects make your work *portable*.



3 EXPLORING DATA FRAMES

ASSIGNING DATA

`<-`

Example - assigning the `mpg` data from `ggplot2` to a data frame:

```
autoData <- mpg
```

This symbol is referred to as the “assignment operator”

Sometimes you will see example code that uses the equal sign for this purpose - do not follow this practice!

LISTING A DATA FRAME'S CONTENTS

`utils::str(dataFrame)`

Example - the `mpg` data from `ggplot2`:

```
str(autoData)

# Classes ‘tbl_df’, ‘tbl’ and 'data.frame': 234 obs. of  11
# variables:
#  $ manufacturer: chr  "audi" "audi" "audi" "audi" ...
#  $ model       : chr  "a4" "a4" "a4" "a4" ...

                        <<< output omitted >>>
```