

# Day 2 Cheatsheet

## Basic R

### Major concepts

- **Package** - a package in R is a bundle or “package” of code (and or possibly data) that can be loaded together for easy repeated use or for sharing with others.
- The R console is a full calculator:
  - +, -, /, \* are add, subtract, divide and multiply
  - ^ or \*\* is power
  - parentheses – ( and ) – work with order of operations
  - %% finds the remainder
- # is the comment symbol; nothing to its right is evaluated.

### Functions

| Library/Package | Piece of code | Example of usage | What it does                                      |
|-----------------|---------------|------------------|---------------------------------------------------|
| Base R          | <-            | x <- 1           | Assigns a name to something in the R environment. |
| Base R          | c()           | x <- c(1, 3)     | Combines values into a vector or list.            |
| Base R          | str(x)        | str(x)           | Gets a summary of the object x structure.         |
| Base R          | class(x)      | class(x)         | Returns the type of the values in object x.       |
| Base R          | print(x)      | print(x)         | Prints out contents of x.                         |
| Base R          | length(x)     | length(x)        | Returns how long the object x is.                 |

## Data Input/Output

### Major concepts

- **Delimited file** - columns within the file have boundaries created with some type of punctuation - for example, a csv file stands for comma separated values, thus the columns are delimited or separated by commas. txt files often use tabs.
- **tibble** – a rectangular data frame, where data are split into rows and columns.
- **File path** - where a file lives on your computer (or on the internet) - File paths can be relative or absolute.
- **Getting help** - For any function, you can write ?FUNCTION\_NAME, or help("FUNCTION\_NAME") to look at the help file for that function.
- **R Projects** set the working directory where the .Rproj file is.
- **R Markdown** files look for file paths relative to where the .Rmd file is located

### Functions

| Library/Package | Piece of code | Example of usage                        | What it does                                                                                                                                     |
|-----------------|---------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| readr           | read_csv()    | df <-<br>read_csv("http://jhudatascienc | Reads in a TSV file<br>path. This function<br>can be tailored to read<br>in other common types<br>of files. i.e. read_csv(),<br>read_rds(), etc. |

| Library/Package | Piece of code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Example of usage                          | What it does |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------|
| TSA             | <pre>spec() spec(mtcars)  Gives specification of column types   readxl  [read_excel()] (<a href="https://www.rdocumentation.org/packages/readxl/versions/1.3.1/topics/read-excel">https://www.rdocumentation.org/packages/readxl/versions/1.3.1/topics/read-excel</a>) Read in an excel file.    BaseR  [getwd()] (<a href="https://www.rdocumentation.org/packages/base/versions/3.6.2/topics/getwd">https://www.rdocumentation.org/packages/base/versions/3.6.2/topics/getwd</a>) Finds the current working directory.    BaseR  [setwd()] (<a href="https://www.rdocumentation.org/packages/base/versions/3.6.2/topics/setwd">https://www.rdocumentation.org/packages/base/versions/3.6.2/topics/setwd</a>)</pre> | Changes the current<br>working directory. |              |

\* This format was adapted from the cheatsheet format from AlexsLemonade.