

STAT 133 Final Study Notes

*** Make sure to review the following links carefully!!!**

*** Don't forget to study materials taught before midterm, they are also important.**

- **- R basics: data types, vectorization, atomicity, recycling, coercion rules -- Review HW1**
 - ☐ Common data types: Integers (1L), double(3.7), Boolean, Character
 - ☐ Atomic structure: the value inside this structure should be of the same type. (example : vector, matrix)
 - ☐ Coercion-- implicit coercion: Boolean < Integer < double < character
-- explicit coercion: as.logical(); as.integer(); as.numeric()
 - ☐ Vectorization: any computation that when applied to a vector operates on all of its elements.
 - ☐ Recycling: occurs when vectorized computations are applied but two vectors are of different length.

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/labs/lab02-vector-basics.md>

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/labs/lab01-R-basics.md>

- **- Manipulation of tabular data -- Review HW1**
 - ☐ Vector/matrix subsetting
 - ☐ Data frame subsetting

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/labs/lab04-data-frame-basics.md>

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/slides/14-data-frame-basics.pdf>

- **- Functions: creation, evaluation, and tests**
 - ☐ Given a formula, write a function to implement it
 - ☐ Be able to inspect errors given a function
 - ☐ Know the elements required for functions

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/labs/lab07-simple-functions.md>

- - Loops: for, while, repeat

- ☐ Be able to inspect errors given a loop
- ☐ Know the difference among for, while, repeat loops and when to use which.
- ☐ Know the elements required for loops

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/labs/lab08-simple-loops.md>

- - Strings and regular expressions (cheat sheet provided) -- **Review HW4**

- ☐ Be able to find out the matching patterns given regex and strings
- ☐ Be able to write down your own regex code given strings and matching patterns

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/cheatsheets/regular-expressions-cheatsheet.pdf>

https://bcourses.berkeley.edu/courses/1467905/files/folder/Lab%20101_108?preview=72942036

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/tutorials/15-intro-to-regex.md>

- - Graphics (cheat sheet provided) -- **Review HW2**

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/cheatsheets/ggplot2-cheatsheet-2.1.pdf>

- - Dplyr (cheat sheet provided) -- **Review HW 2 & lab05**

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/cheatsheets/data-transformation-cheatsheet.pdf>

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/labs/lab05-dplyr-ggplot-basics.md>

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/tutorials/05-dplyr-pipes.md>

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/slides/17-dplyr-tutorial.pdf>

- - **File-system, paths, organizing directories and files -- Review Lab 3 & Midterm**

- ☐ pwd: print working directory
- ☐ ls: list files and directories
- ☐ cd: change directory (move to another directory)
- ☐ mkdir: create a new directory
- ☐ touch: create a new (empty) file
- ☐ cp: copy file(s)
- ☐ mv: rename file(s) (when is moving file? When is renaming files?)
- ☐ rm: delete file(s)
- ☐ Given file structures, know how to write command lines manipulating files

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/slides/10-working-with-files.pdf>

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/slides/08-file-system-basics.pdf>

- - **Shell commands, redirection, and pipes -- Review HW3**

- ☐ cut : select columns
- ☐ grep: filter rows
- ☐ sort: arrange lines / group by lines / count occ
- ☐ uniq: count occurrences
- ☐ cat : display the contents
- ☐ Given file contents, know how to write command lines display required lines.

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/tutorials/08-shell-filters.md>

- - **Markdown syntax -- Review Warmup 01**

<https://github.com/ucb-stat133/stat133-spring-2018/blob/master/hws/up01-markdown.pdf>

- - **Review notes for midterm.**

https://bcourses.berkeley.edu/courses/1467905/files/folder/Lab%20101_108?preview=72740224

<https://bcourses.berkeley.edu/courses/1467905/files/folder/Lab105%26109?preview=72790192>