



Practicum in Statistical Computing

2021 Fall / APSTA-GE.2352

Lab week 1

Kwan Bo Shim

Sep 6, 2021

P A R T 0 1

Intro

General Information

Lecture: **Tuesday (4:55-5:45 PM)**

Lab: **Tuesday (8-9AM)**

Office hour: **Tuesday (9-10AM, same link)**, Friday (1-2PM)

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General Information

- Lab is **synchronous** / **attendance** is taken
- **Code snippets from the book** and some supplemental material; you are expected to **review the text** and concept portion of the **R-shiny apps** posted on Brightspace before lab.
- **Lab assignment.** These build the skills for all homeworks and projects. Several will be turned in (syllabus has due dates). Review before lab.
- First HW1 (Datacamp) due next Tuesday

General Information

Course Description:

- This course will introduce the student to modern statistical programming and simulation using the language R. The core skills are oriented around first understanding variables, data structures, program flow (e.g., conditional execution, looping) and functional programming, then applying these skills to answer interesting statistical questions involving the comparison of groups, which is core to statistical practice. Most statistical analysis will be motivated via simulations, rather than mathematical theory. The course content (programming and data analysis) requires significant outside reading and programming.

General Information

- **Expectations:**
- Programming, and particularly debugging, requires substantial persistence, creative exploration and problem solving skills. For the student who is new to this type of work, we suggest spending some time prior to the first class exploring basic programming (any language) with online tutorials such as those developed by the Khan Academy.
- Be open to making mistakes! Programming requires many attempts, patience and perseverance.

Week 1

- 1. Basic mathematical computation**
- 2. Intro to vector, and computation**
- 3. Intro to matrix, and computation**
- 4. Some more useful functions**