NUS Learning Festival 2019

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This course is taught to second-year Data Science (DSA) majors. It is typically their first in-depth exposure to R. Half of the class is on R. The second half focuses on visualisation techniques.
Course Expectations

It is a lofty ambition, but at the end of the course, we hope that the students will be:

- Able to use R efficiently.
- Able to manipulate data efficiently using tidyverse.
- Able to visualise data well.
- Able to explore data independently and confidently.
Assessment

- Weekly R markdown submissions to LumiNUS.
- Digital assessment through Examplify.
- DataCamp assignments.
- Tutorial participation.
autoharp R package
nus specific functions

- LumiNUS filename matcher.
- Examplify code extractor.
autoharp R package
non-nus specific functions

- A shiny interface to provide immediate feedback to students before submission.
- Perform batch rendering of Rmd submissions.
- Check if solutions are correct using unit tests. (see alternatives)
  - gradescope
  - markmyassignment
  - datacamp api / r package
  - coursemology
- Check run-time efficiency.
- Static code analysis
- A grading interface for code ported from Examplify.
Examples of static code analysis

1. Did they duplicate (cut-and-paste) code instead of writing a function?
2. Did they use for loops instead of apply, dplyr tools?
3. Do they have unused items in their workspace?
4. Did they use the pipe operator well?
5. Did they load too many unnecessary packages?
6. Did they copy code from one another?