Problem Set 5

(Due Mar. 6, 1:00 PM)

Instructions

1. Work on git. Fork the repository found at `https://github.com/minheeseo/PS5` and add your code, committing and pushing frequently. Use meaningful commit messages – these may affect your grade.

2. You will need to submit a complete github repository containing the package and a development file. The development file should walk through the entire process of building the package and include some example code showing how each function works.

3. You will be graded on:

   - Comments
   - Correct/frequent use of GitHub with lots of commits.
   - Elegance of code (e.g., apply rather than loops, speed of functionality, etc.)
   - Readability of the code/stability of naming conventions
   - Documentation/full completion of package structure

4. If you have any questions regarding the Problem Set, contact the TA or use her office hours.

Create S4 Package

1. To prepare you for your midterm, your goal here is to use `devtools` to create an S4 R package named `integrateIt`. Background of Trapezoidal rule and Simpsons rule can be found in the lecture *R Package 3* slide page 11-15.

2. The package should include appropriate functions and appropriate documentation

3. The package should have two classes, `Trapezoid` and `Simpson`

4. The package should have one generic, `integrateIt`

5. The package should contain three methods, `integrateIt`, `print`, and `plot`. Detailed explanations on `integrateIt`, `print`, `plot` methods can be found in the lecture *R Package 3* slide page 16-18.

6. You need to create an appropriate error message, and the error message should be intuitive. Test the error message on your development file.

7. GRADS ONLY: create an extra generic/method called `tolTest`. `tolTest` method can be found in the lecture *R Package 3* slide page 19.

8. Again, your development file should document the the entire process. This file should contain codes to check whether your functions work.