Guidelines for oral presentations & exercise reports

TMA4300: Computer Intensive Statistical Methods

(Spring 2024)

If you have questions, . . .

. . . do not hesitate to ask!

Guillermina is the main contact person regarding exercises

1. You get help in the assigned exercise classes. Guillermina, and/or I will be present to answer your specific questions.
2. You can discuss with others. Also questions and discussions after/during the oral presentations are encouraged.
3. You can send an email to Guillermina or me or post your question on Discourse at `https://mattelab2023v.math.ntnu.no/c/tma4300/53`

General points

- The exercises have to be done using the statistical package R.
- Comment your code (ideally in English). There should be almost as many comments as code.
- Use reasonable variable names.
- Do operations on vectors instead of using for-loops.
  For example

```
x = log(runif(n))
```

  runs much faster than

```
u = runif(n)
for (i in 1:length(u))
    x[i]=log(u[i])
```

- Check your code!!! Does it run? Is it correct?

Do computations on log-scale

- Probability calculations often involve taking the ratio of very big numbers to produce a moderate-sized number. Calculating this may cause overflows.
- Take the logarithm of the expression you want to evaluate and then exponentiate the result.
- Example:

$$\frac{200!}{190! \cdot 10!} = \exp(\log(200!) - \log(190!) - \log(10!))$$

In R:

```
> lfactorial(200)
[1] 863.232
> log(factorial(200))
[1] Inf
```

Report I

- Please be careful that the file size does not get too big, for example by avoiding high resolution figures.
- The solution should be one pdf file, one per group!
- The solution should specify your names, not student numbers!
- The solution should contain:
  - Answer to the questions and discussion of the results. It should look like a report, so use full sentences!
  - Your R-code, with comments to make it easier to read.
  - Do not put the code in an Appendix!
  - Use reasonable variable names to make it easier to read.
- Presentation of your simulation output in (informative) plots.

Report II

- It should be possible to read the delivered exercise without having to read also the questions!
- All plots should have a caption, be referenced in the text and should be explained and discussed.
- Markdown and LaTeX are good ways to keep the code and report on the same place, but they are not obligatory. Templates for Markdown and LaTeX are provided on Blackboard.

Oral presentation

- Each presentation should be about 7 minutes.
- Give a rough overview of the solution (not all details are needed)
- Emphasize tricky points and show how you handled them.
- Use a presentation ($\leq$ 5 slides) to show figures and results.
- Practice and time your presentation.
- There should be some discussion/interaction between the presenting group and the audience. **This is the chance to discuss your solution!**
- Do not make the slide too full (This slide is too full!!).
- Take care of:
  - the font size (not too small)
  - Colours and text in figures must be visible!
    (Do not use yellow, or too tiny axis labels, . . .)

Evaluation criteria

All handed-in exercises must be found acceptable to be admitted to the exam. That means there must be a resonable attempt to solve all exercises (If you have problems ask!!!) Each of the exercises counts 10% of the final mark. Thus, in total the exercises account for 30% of the final mark.