Assessment: Fundamentals of Data Analysis

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Winter 22/23

These are the instructions for the assessment of Fundamentals of Data Analysis in Winter 22/23. These cover the full 100% of the assessment for this module.

Submission

- The deadline for submission is January 7th, 2023.

- Your whole submission must be in a single GitHub repository.

- Use the form on the Moodle page to submit your repository.

- All you need to do is submit the repository URL.

- You should submit the URL as soon as possible.

- Commits in GitHub on or before the deadline will be considered.[1]

What to submit

This assessment has three overlapping components, as follows.

GITHUB REPOSITORY (20%):

- Your repository should be presentable in job interviews.

- Include an informative and concise README.

- Organize your repository — no unnecessary files or clutter.

- Work regularly, adding reasonably-sized commits.

REGULAR TASKS (40%):

- The lecture notes suggest concepts you should explore[2].

- You should complete these in notebooks each week[3].

- Plots explaining main concepts.

- Code demonstrating key algorithms.

- Well-written explanations[4].

[2] The lecture notes themselves are presented in Jupyter notebooks.

[3] You don't need to have a notebook for each individual small topic. It is up to you to choose how you organize the notebooks. Aim for one notebook per topic.

[4] Pitch all your work at your classmates as the audience.

NORMAL DISTRIBUTION NOTEBOOK (40%):

- Create a notebook about the normal distribution.

- Define and explain the main concepts.

- Pitch the notebook at your classmates.

- Use visuals like plots to explain concepts.

Marking Scheme

Each component will be marked using the four categories below. To receive a good mark in a category, your submission needs to provide evidence of meeting each of the criteria listed under it[5].

Research (25%)*:* evidence of research on topics; appropriate referencing; building on work of others; comparison to similar work.

Development (25%)*:* clear, concise, and correct code; appropriate tests; demonstrable knowledge of different approaches and algorithms; clean architecture.

Documentation (25%)*:* clear explanations of concepts in notebooks; concise comments in code and elsewhere; appropriate, standard README for a GitHub repository.

Consistency (25%)*:* tens of commits, each representing a reasonable amount of work; literature, documentation, and code evidencing work on the assessment; evidence of reviewing and refactoring.

Advice

- Students sometimes struggle with the freedom given in an open-style assessment.

- You must decide where and how to start, what is relevant content for your submission, how much is enough, and how to make the submission your own.

- This is by design — we assume you have a reasonable knowledge of programming and an ability to source your own information.

- Companies tell us they want graduates who can (within reason) take initiative, work independently, source information, and make design decisions without needing to ask for help.

- The point of this assessment is to demonstrate you can do that.

- You need a plan, you cannot just start coding straight away.

Policies

- You are bound by all ATU policies and any GMIT policies that have not yet been replaced by new ATU policies.

- Review the GMIT Quality Assurance Framework [6].

- Pay particular attention to the Policy on Plagiarism and the Code of Student Conduct.

- If you have any doubts about what is permissible, email me to ask[7].

[5] In line with ATU policy, the examiners' overall impression of the submission may affect individual marks in each category.

[6] GMIT. Quality Assurance Framework. `https://www.gmit.ie/general/quality-assurance-framework`

[7] `ian.mcloughlin@atu.ie`