Gisma University of Applied Sciences

Assessment Brief

M602 Computer Programming

Winter 2024

Assessment Summary

Title:	Individual Final Project
Weighting:	70% Primary Task + 15% Online Assessments + 15% Class Participation
Created on:	September 12, 2024
Deadline:	December 19, 2024 at 18:00 Berlin Time
Submission Method and Length:	This assignment must be submitted as a report (converted to a *.pdf file) in the corresponding submission folder to be found on Canvas. The report must contain a GitHub repository link, where you keep the well-documented implementation of the project. Note that by submitting your assignment, you automatically sign the Assessed Submission Form and take responsibility for your submission. Please keep the size of your report below 3000 words.

Assessment Details

Primary Task Topic

As the new intern programmer, you have been tasked with developing a Carbon Footprint monitoring tool for the organization's clients. The program will allow users to input data and generate reports providing suggestions on how to reduce it. For the task, you may use either C++ or Python.

The PDF report should contain the following information:

- A problem statement discusses the business problem and the importance of solving it with respect to the identified stakeholders.

- Screenshots of your code, explaining how it works with examples of input/output.

- Summaries of the analysis (e.g., tables/visualizations).

- Conclusions including suggestions for future work (e.g., research and optimization).

The GitHub repository should contain the following:

- A folder that contains generated Carbon Footprint reports.

- Either C++ or Python code which does the following:

  - Generate reports based on user inputs.

  - Handles errors such as incorrect user inputs.

  - Generate summaries across reports to understand trends across clients.

As well as the GitHub repository link, the submitted PDF report should contain screenshots of your code with descriptions of how it works (e.g., designed functions/classes). The text and code should be written in a clear and easy-to-follow manner. Textual discussion should outline and justify the design decisions in a professional and comprehensive manner, including screenshots of code outputs.

Guidelines:	Mind the structure of your submission and its quality of writing. The texts and codes should be written in a clear and easy-to-follow manner. All the design decisions should be made in a principled and well-justified manner, either by explaining the intuition or by conducting empirical experiments. You can get inspired from any public resources (e.g., blogs, documentation, open-source projects). But the design and implementation of your project should be yours. Your submission should reflect your complete understanding of what you do. Otherwise, it could be a sign of academic misconduct. The use of generative AI technologies (such as ChatGPT) in your final assignments is not allowed unless the assessment guidelines explicitly clarify, under which terms, you are allowed to use these technologies. Any violation of this rule will result in an investigation of academic misconduct. [Only applies when the assignment is data-driven:] When you need to choose a dataset, choose a new dataset that was not used in the exercises. Mention the URL of your dataset in your submission, so we can find it on the web. [Only applies when the assignment title is group work:] When the assignment type is group project, make sure all group members contribute equally and transparently. The size of the group must be 2 unless it is explicitly permitted by the tutor upfront. The group composition cannot be changed after week 7. Every group member must contribute to every task, including both technical and documentation. The contribution of all group members must be visible in both the report and the GitHub repository. In the report, a section must declare the contribution of each group member (who has done what). On the GitHub repository, the accounts of both group members must have contributed.
Purpose:	Designing and implementing such a project is one of your key responsibilities in your career. This assignment is designed to assess your ability in that regard. We are especially interested to see that you can apply various concepts that you have learned in the module in a systematic and principled way.
Links to Learning Outcomes:	The assignment relates to all the intended learning outcomes of the module.

Additional Components:	GISMA University rewards in-class participation, and engagement with asynchronous content, at a rate of 30% per module.
	Students participating $\geq$ 80% (factoring on possible extenuating circumstances) of their synchronous classes as per their due mode of delivery will gain 15% towards their final module mark.
	Students successfully engaging with asynchronous material on the gamification/microlearning path and completing all summative assessments in the asynchronous environment will equally gain 15% towards their final module mark.
	Designated asynchronous tasks should be completed by the deadlines specified by the tutors. Do note that all tasks must be completed by the deadline applicable for the principal assessment task.
	The above also entails that students falling below 80% of participation, although they will still be allowed to submit, will have their final mark capped at 85/100. Equally, if they fail to engage with the asynchronous material and complete the short summative assessments included in specific checkpoints during each term (usually 4), their module mark, irrespective of their engagement and participation in synchronous delivery, will drop by a maximum rate of 15%.

Marking/Assessment Criteria for the Primary Task

Mark Weight (100%)	Fail (0 - 49%)	Sufficient (50 – 59%)	Satisfactory (60 – 74%)	Good (75-89%)	Very Good (90-100%)
Marking Criteria	Does not fulfil the requirements of the assessment.	Demonstrates acceptable knowledge and understanding of the subject-matter and achievement of learning outcomes at low to average level of performance.	Demonstrates substantial knowledge and understanding of the subject-matter and achievement of learning outcomes at average to above average performance levels.	Demonstrates a comprehensive knowledge and understanding of the subject-matter and achievement of learning outcomes at well above average levels of performance.	Demonstrates a comprehensive knowledge and understanding of the subject-matter and achievement of learning outcomes at high (highest) levels of performance.

Assessment Criteria:	
	• The correctness, completeness, and conciseness of runnable codes. (35%)
	• The structure of the report, quality of writing, and critical evaluation of codes and results in the text. (35%)

General Tips

Answer the Question:	It may seem obvious, but make sure you are answering the question you have been set, not the question you would prefer to answer. If the brief has a number of tasks or parts, answer all of them. Parts that involve evaluation or analysis are usually longer and worth more marks than parts that ask for description or explanation. Keep the brief in front of you and check it regularly.
How to Use Assessment Criteria:	The assessment criteria document is not usually a guide to the structure of your assignment. Each section of the criteria is not a separate paragraph in your assignment, but qualities that you need to demonstrate throughout. Treat the assessment criteria as a checklist at the end not as a plan at the beginning. Also, the criteria document often tells you what to demonstrate (e.g., critical analysis) but not necessarily how to do it. For how to do it, look back at the skills and activities you have covered in the rest of the module. Above all, remember this is not a test of how much you know or how much you have read about the topic. It is a test of how well you can use your knowledge to answer the specific question set.
Planning and Preparation:	Make sure you attend the lectures, especially the first and the last one, where we will be 'unpacking' this assignment in greater detail.
Referencing:	Gisma University of Applied Sciences requires that students use Harvard Referencing.
Plagiarism and Cheating:	Your attention is drawn to the University's stated position on plagiarism. THE WORK OF OTHERS THAT IS INCLUDED IN THE ASSIGNMENT MUST BE ATTRIBUTED TO ITS SOURCE (a list of references and bibliography must be submitted). Please note that this is intended to be an individual piece of work. Ensure that you read through your work prior to submission. Action will be taken where a student is suspected of having cheated or engaged in any dishonest practice. Students are referred to the University regulations on plagiarism and other forms of academic misconduct. Students must not copy or collude with one another or present any information that they themselves have not generated. For more information on Plagiarism, please see the relevant section in your Programme Handbook.