MAST 90014 - Optimisation for Industry Individual Assignment 2025

Student Name
Student ID
Course Name

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1 Problem 1

1.1 Problem Description

Provide a clear and concise written description of the problem.

1.2 Model

Define the mathematical model, including:

- Parameters

- Decision variables

Use the `align` environment to format equations neatly:

$$\min \quad f(x) \text{ (Objective function)} \tag{1}$$
$$\text{s.t.} \quad g(x) \leq b \text{ (Constraints)} \tag{2}$$

Explanation of the meaning of the objective function and of each constraint in your model.

1.3 Numerical answers

The optimal objective function for instance 1 is:
The optimal objective function for instance 2 is:

1.4 Disclosures

- I discussed with student John Smith, ID 123456, about the meaning of the demand in the problem definition (example).

- I discussed with student Mary Smith, ID 654321, about the best strategies to read the data file. We did not share any piece of code, as requested (example).

- I used chatGPT to help me code the solution. This is the link to the conversation: https://chatgpt.com/share/67b2598a-b558-8009-8aed-46add7da2b22

2 Problem 2

2.1 Problem Description

Provide a clear and concise written description of the problem.

2.2 Model

Define the mathematical model, including:

- Parameters

- Decision variables

Use the `align` environment to format equations neatly:

$$
\begin{align}
\min \quad & f(x) \text{ (Objective function)} \\
\text{s.t.} \quad & g(x) \leq b \text{ (Constraints)}
\end{align}
$$

Explanation of the meaning of the objective function and of each constraint in your model.

2.3 Numerical answers

The optimal objective function for instance 1 is:
The optimal objective function for instance 2 is:

2.4 Disclosures

- I discussed with student John Smith, ID 123456, about the meaning of the demand in the problem definition (example).

- I discussed with student Mary Smith, ID 654321, about the best strategies to read the data file. We did not share any piece of code, as requested (example).

- I used chatGPT to help me code the solution. This is the link to the conversation: https://chatgpt.com/share/67b2598a-b558-8009-8aed-46add7da2b22

3 Problem 3

3.1 Problem Description

Provide a clear and concise written description of the problem.

3.2 Model

Define the mathematical model, including:

- Parameters

- Decision variables

Use the `align` environment to format equations neatly:

$$
\begin{align}
\min \quad & f(x) \text{ (Objective function)} \\
\text{s.t.} \quad & g(x) \leq b \text{ (Constraints)}
\end{align}
$$

Explanation of the meaning of the objective function and of each constraint in your model.

3.3 Numerical answers

The optimal objective function for instance 1 is:
The optimal objective function for instance 2 is:

3.4 Disclosures

- I discussed with student John Smith, ID 123456, about the meaning of the demand in the problem definition (example).

- I discussed with student Mary Smith, ID 654321, about the best strategies to read the data file. We did not share any piece of code, as requested (example).

- I used chatGPT to help me code the solution. This is the link to the conversation: https://chatgpt.com/share/67b2598a-b558-8009-8aed-46add7da2b22