Assignment Instructions: Final Exam

Purpose

The objective of this assignment is to define, formulate, and solve a mathematical optimization model. In addition, this will help you master the following module outcome:

- Integrate your learning on mathematical modeling.

Directions

You have been tasked with the objective of forming groups. Assume that your class consists of 12 students, and you would like to form 4 groups of 3 students each. Your primary objective is to ensure that you maximize the chance that each group will do well on a class project. Here are the requirements to form groups:

1. Each group should have exactly 3 students
2. The objective is to maximize the chance of success for each group on a class project

Before you can solve this problem, there are several issues that must be addressed. Some of these being:

- What factors affect the success of groups? Define three factors, e.g., GPA, gender, etc., that you feel affect the contributions that students make towards project success.
- How do the above factors combine to define success? For example, is a person with high GPA the same as one with a more relevant background? Decide on how each of the factors contribute toward your definition of success.
- How will you collect data for these factors? For this assignment, randomly generate sensible data for each of the above three defined factors.
- What are your decision variables?
- What is your objective function?
- What are your constraints?

Formulate and solve the problem. Provide the corresponding R markdown file, and a narrative recorded presentation justifying your approach to the choice of factors, data collection, and formulation.

Requirements

All due dates are included in the Assignment Schedule.

General Submission Instructions

All work must be your own. Copying other people's work or from the Internet is a form of plagiarism and will be prosecuted as such.

Upload an R markdown file, along with any required .lp files to your git repository. Also upload a narrative presentation justifying your model. Name your file Username_F.ext, where Username is your Kent State User ID (the part before @).

Provide the link to your git repository for the assignment.