

Intermediary Report for the Design of Experiments Project

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In this intermediary report, we expect students to present their work on modeling two switches both statistically and theoretically. The report must be submitted in Moodle before Friday October 18. at 23:59. The report should be structured in a clear and logical manner, with the following sections included.

1 Introduction

This part is a presentation the problem and the structure of the document.

2 Statistical Model for Two Switches

Present the statistical (empirical) model you have developed to represent the behavior of the two switches. Clearly define the variables used, the type of statistical analysis performed, and any assumptions made in building the model. Discuss the relevance of the model and how it captures the switch behavior. Present your data for all the possible couples of switches on the extreme right column of the device.

3 Theoretical Model (Network of Resistors)

Present a corresponding theoretical model based on a network of resistors. Demonstrate that your theoretical model is able to represent well the behavior of two switches.

4 Link Between the Two Models

In this section, you should explore and explain the relationship between the statistical model and the theoretical model. Discuss how the two models align or differ and what insights can be gained from comparing them. If there are discrepancies, explain possible reasons for them.

5 Next Steps

Outline the next steps of the project. Specifically, you will need to extend your models to four switches and then generalize further to more switches. Provide a brief overview of how you intend to approach this generalization and what challenges you anticipate.

6 Conclusion

Summarize the work completed so far and any preliminary conclusions. Discuss the progress made and how this intermediary step contributes to the final goal of the project. Mention any unresolved issues or questions that you plan to address in the next phases of the project.

Length of the Report

While the number of pages is flexible, the report should be concise and to the point, with a maximum of 10 pages. Make sure that the report is well-structured and clearly communicates your work, findings, and next steps.