UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

MAXIMIZING TIMESLOTS' PREFERENCE OF SCHOOL TIMETABLING PROBLEM USING INTEGER LINEAR PROGRAMMING

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(P35M23)

Report submitted in partial fulfillment of the requirement for the degree of
Bachelor of Science (Hons.) (Mathematics Management)
College of Computing, Informatics and Mathematics

AUGUST 2023

ACKNOWLEDGEMENTS

IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

Firstly, we are grateful to Allah S.W.T for giving us the strength to complete this study successfully.

We would like to express my sincere gratitude to my supervisor, Dr. Nurul Liyana binti Abdul Aziz for her tremendous support and guidance in helping us to complete our final year project. She had given not only essential theories and ideas in completing this study but also informally guided us in developing our personal values to make us a better person.

For all her time and work over the course of the year, our lecturer, Miss Nur Lina binti Abdullah deserves a particular word of appreciation. During the execution of the assignment, we found her tips and recommendations to be beneficial. We will always be thankful to you in this regard.

Additionally, we want to express my gratitude to our friends for always being willing to offer their thoughts and real criticism. They gave us support and encouragement, and we will always cherish those memories.

Finally, an honourable mention should also go to our family, who have consistently prayed for my success and provided the highest level of moral support throughout my life.

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ABSTRACT

The school timetabling problem is a complex task that requires the allocation of resources and scheduling of classes to meet the preferences of both students and teachers. In this study, integer linear programming (ILP) is proposed as a method for maximizing timeslot preference in school timetabling. This approach involves modelling the problem as an ILP formulation, where the objective is to generate a secondary school timetable model based on integer linear programming while maximizing the timeslot's preference of the secondary school timetable using Excel solver. This study will demonstrate how well the ILP method works at generating the school timetable that maximizes the timeslot's preference while complying with all the limitations. The school timetable data from a secondary school in Kedah is taken into consideration. The finding demonstrates that ILP technique is able to generate a timetable at the most preferred timeslot. As a result, the generated timetable by Excel Solver produced a secondary school timetable without any clashes and all the class meetings are assigned to the most preferred timeslots at 100%. All constraints are satisfied and all class meetings successfully allocated to the specific timeslot.