

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

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

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

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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.