Universiti Malaysia Pahang examination timetabling problem: scheduling invigilators

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ABSTRACT
This paper presents a real-world examination timetabling problem from Universiti Malaysia Pahang (UMP), Malaysia. The problem involves assigning invigilators to examination rooms. This problem has received less attention than the examination timetabling problem from the research community partly because no data sets are available in the literature. In modelling, and solving, this problem we assume that there is already an examination timetable in place (this was the subject of our previous work) and the task is to assign invigilators to that timetable. The contributions of this paper are to formally define the invigilator scheduling problem and to present a constructive algorithm that is able to produce good quality solutions that are superior to the solutions produced when using the university's current software. We also include additional constraints taking into account the comments made by the invigilators, which the current system fails to capture. The model we present, we believe, accurately reflects the real-world problem, capturing various aspects of the problem that have not been presented before in the scientific literature. Moreover, the proposed approach adheres to all hard constraints, which the university's current system fails to do.

KEYWORDS:
Optimisation; Timetabling; Invigilator; Scheduling