

**UNIVERSITI TEKNOLOGI MARA**

**TECHNICAL REPORT**

**KNAPSACK PROBLEM ON ITEMS FOR LUGGAGE FITTING  
FOR LIGHT TRAVELLERS**

**AMIRUR RIDHWAN BIN JALALLILMUBIN – 2019230262  
RAJA MOHD ILHAM SYAFIQ BIN RAJA SEMAN – 2019219636  
MUHAMMAD MUHSINUL MURSYID BIN MOHD NASIR – 2019627662  
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## **ABSTRACT**

One of the most frequent issues encountered by travellers is their inability to pack too much stuff in a single bag without going over the permitted weight limit and incurring additional costs. Typically, they would roughly add and remove a few items to make room for others that were deemed more crucial for the journey. However, by using the knapsack problem paradigm, this issue can be mathematically resolved. The main goal of this technique is to fill the knapsack as full as possible without exceeding the weight restriction. Varied travel objectives also have different effects on the knapsack. Due to the potential for severe consequences, it is crucial to enter the precise limits for each item.