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Analyst Interview Assessment

Sep 2023

# Mr Haulage

## Background

1. This question is intended to give you a chance to demonstrate your problem solving, data analysis, and modelling skills. Please be prepared to provide a short answer to this challenge at your interview. While constructing the answer, please consider additional questions you might have for Mr Haulage and bring them to the interview.

## Their challenge

1. Mr Haulage runs a box delivery firm that has been in his family for generations. They run a contract with Defence to deliver supplies within the UK. His old fleet of vehicles to service this contract are starting to show their age and he wants to replace his current trucks with some new ones.  The firm gets two types of boxes to transport; a small box and a large box. The prices paid by the customer are shown below:

Table 1 – Delivery payments

|  |  |
| --- | --- |
| **Box size** | **Income per delivery** |
| Small | £20 |
| Large | £100 |

1. The manager of the firm is deciding on how many trucks to buy to transport these boxes.  There are two types of trucks on the market; both types can perform one delivery per day:

Table 2 – Truck details

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Truck size** | **Capacity** | **Driver cost per day** | **Fuel cost per day** | **Unit cost** | **Loading time** |
| Small | 1 small box | £5 | £5 | £2,000 | 1 hour |
| Large | 4 small boxes or 1 large box | £20 | £30 | £5,000 | 2 hours |

1. Mr Haulage has provided access to a dataset for about two years’ worth of orders (attached). What should Mr Haulage buy to replace his fleet?