

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN, ANALYSIS AND  
FABRICATION OF AUTOMATED  
FORKLIFT**

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## **ABSTRACT**

A forklift is a powerful industrial vehicle used for lifting, moving, and stacking heavy objects in various settings, such as warehouses, distribution centers, manufacturing facilities, and construction sites. Even though a forklift is already efficient, there are problems such as less licensed operators, slow and unoptimal usage of forklift and dangerous collision that can occur while using forklift. So, the objective of this project is to design and fabricate a prototype of automated forklift to counter the problems. The method for fabricating this project will be based on the machine that have in the faculty. This prototype is expected to carry out the task of lifting and putting down the carriage with the help of torque motor.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

A forklift is a powerful industrial vehicle used for lifting, moving, and stacking heavy objects in various settings, such as warehouses, distribution centers, manufacturing facilities, and construction sites. Overall, forklifts are essential tools in material handling operations, offering a reliable and efficient solution for lifting and moving heavy loads. They play a crucial role in improving productivity, streamlining warehouse operations, and ensuring the safe and efficient movement of goods.

Nowadays, the rise of industrialization and mass production created a need for more efficient and mechanized methods of handling materials. Manual material handling methods, such as carrying heavy loads by hand or using basic tools like pulleys, were time-consuming and physically demanding. Forklifts have significantly transformed material handling operations in various industries, improving productivity, safety, and overall efficiency in warehouse and industrial settings.

Although forklift may be efficient so a lot of ways, it can be involved in accidents, leading to injuries or fatalities if not being careful. Operating a forklift requires specialized training and certification. Manually operated forklift seems to be today's solution due to its difficulties. The use of automation on forklift has seems to be the most efficient way as it does not need special training to operate and just needs to troubleshoot if anything happens.