

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A PROTOTYPE
MECHANICALLY MOVEABLE AND
HEIGHT-ADJUSTABLE LADDER**

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ABSTRACT

This project is presenting an implement of mechanically moveable and height-adjustable ladder (MeMoHAL). By using MeMoHAL the cost of purchasing ladder can be save as it consists of two features on one particular product which preventing loss of money to purchase two different ladders with different feature. This project discusses about the ladder, the advantages of the MeMoHAL , the product implementation and results that obtained from the product. In conclusion based on the designed MeMoHAL, authors discussed the advantages and points need to be considered when working on the product.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Ladders are ancient technology and tool. A ladder is featured in a Mesolithic rock painting in a cave in Valencia, Spain [1]. A ladder is a climbing structure madeup of two long side sections connected by rungs or steps at regular intervals. It's critical to choose the appropriate gear for the job, which includes ladders, which come in a variety of styles and sizes to suit various uses. When operating a ladder,use extra caution because a fall from a ladder can result in serious damage or evendeath [2]. Some common causes which cause by ladder are losing one's balance, over-reaching while on the ladder and mis-stepping while climbing. In today society, ladder is widely used in many fields of work such as agricultural technicians, construction, and painters [3] however there are many problems facedwhen using ladder and one of them is leaning too far rather than moving the ladder[4]. People usually adopt the habit of leaning their body to reach further spot that they cannot reach. In view of the factors above, it is crystal clear that many individuals are facing problems when operating a ladder and an improvement needed to be done urgently in order to avoid lethal accident to the user in the future.

1.2 Problem Statement

The common problem faced by ladder user is that they find it difficult for them to reach further place when on a ladder and needed them to manually movethe ladder to designated area. The user also experiencing difficulty to reach higher place with the height of the ladder they are using. This statement can be proved by the statistics that have been collected from a survey that was done for this project.