UNIVERSITI TEKNOLOGI MARA

DESIGN ANAYLYSIS AND FABRICATE ROBOTIC ARM PART FOR ROBOTIC ARM CAR

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ABSTRACT

The title of this project is design and manufacture robot arm parts for robot arm cars. The theme for this project is to focus on the kindergarten and the kindergarten environment so that this robotic arm car can help teachers in terms of hygiene where this robotic arm car can help teachers pack things or toys in the kindergarten. For this project, my study focuses on the robotic arm which is an important part of the robotic arm car. In addition, the objective of this project is to design analysis and fabricate a robotic arm capable of reaching and lifting light objects. In addition, with collaboration with teammates who are responsible for ensuring that each part is able to function and move well. To produce a robotic arm is not an easy matter because there are several challenging processes, among which is choosing dimensions that are suitable for the kindergarten environment, the movement of the arm whether can turn forward or backward and the precision of the robotic arm movement to perform the task. The prototype produced has 3DOF for movement and is able to move according to the instructions given and successfully lift light items.

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TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Robotic arm car are constantly being used in industries nowadays from manufacturing to automotive. Robot arms are also known as articulated robotic arms because they are efficient or fast and accurate. In addition, robotic arms can also be programmed to perform tasks to facilitate work in industry, for example robotic arms car are widely used in the manufacturing industry. [1]

In addition, Robotic arm car can also be found in many places or countries that have advanced technology that is becoming more advanced such as in Dubai. Most restaurants in Dubai use advanced technology to serve customers such as a robotic arm that provides meals to customers. In addition, hospitals in some countries also use robotic arms to help them in performing rather difficult surgeries.[2] The use of robotic arm car in modern times is widely used in industry and entertainment, but not widely used in schools and kindergartens that can work to help teachers. So, why don't we make a robotic arm car project that focuses on the kindergarten environment that is able to help teachers in terms of cleaning.

The project robot arm car for kindergarten is very challenging because it needs the right size because the environment for kindergarten is not big and there are items. In addition, the environment in the kindergarten is very limited to the robotic arm car because it requires precision when moving to avoid any accidents or injuring the children in the kindergarten while doing its job. The material used to make a robotic arm must be durable to avoid any damage and not heavy so that it is easy to lift or move to the appropriate place. [3]

To address some issues in the project of making a robot arm car so that it is suitable for use in kindergarten. Designing a robot arm project is very important to get the right design and size by using solidwork software to design this robot arm project. The challenging thing about using this solidwork is that it requires skill and knowledge of this software to be able to create it more easily and to capture the right size. Also, use a motor that fits the kindergarten environment and is safe for children in kindergarten.