

Design and Development of Remote Operated Car Door Opening and Closing System

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Abstract: Remote operated door opening and closing system is widely used now in the equipment such as television, radio and are one more example used in transports system as a keylock system. Remote operated system is divided to two categories; device based and activity based. Door is a portable obstacle that can be opened and closed. The combination between tool of system remote operated and door will produce one security system. This project will focused the design of the safety system for house especially house door. This system is constitute from the extension of remote operated device to main system as a signal recipient from it and activate or deactivate the keylock system at the door. The objective of this design is to invent the keylock system that easy to used and easy to maintain. Besides that this invention also focusing for commercialization. So the invention of this project will be considering budget expenditure of the component and raw material that will be used to produce one product that can be commercialized.

Keywords: Remote Operated Door Opening and Closing, DC Motor, Linkage Mechanism, Limit switch

I. INTRODUCTION

The system consists of a modified standard household deadbolt lock, a central lock and a remote operated. People who have limited use and control of their hands would use this system to simplify the complicated procedure of using a key to lock and unlock their homes at the touch of a button. The purpose of this project was to simplify the tasks of locking and unlocking a conventional door for people who use wheelchairs and have limited use of their hands and arms. By incorporating the use of a remote operated, the inconvenience of using a key was eliminated. With just a push of a button, the locking mechanism in the door can be activated or deactivated. There are several door-locking systems that do not use a conventional key. There is a "credit card" type used in many hotels and the push-button combination lock used in many businesses. Both of these and similar systems did not address the inability of our client to grasp the card key or push the tiny buttons. There are also variations of remote operated led doors and gates, but these tend to be large and expensive systems more suitable for industrial use. To design a remote operated door lock system for user to lock and unlock a conventional door. To commercialize this product to people.

II. LITERATURE REVIEW

The first vehicle to feature scissor doors was the 1968 Alfa Romeo Caribou concept car, designed by Bertone's Marcello Gemini. The door style was dictated by Gemini's desire for an innovative design, and by his concern over the car's extremely poor rear visibility. In order to reverse the car, the driver would be able to lift the door and lean his upper body out of the hatch in order to see behind the car. The first production car to feature the doors was a Lamborghini, Gemini's Contach; the sports car's wide chassis created similar problems to those found on the Caribou, calling for the unusual door configuration. The doors were used on the Contach's successor, the Diablo, on its replacement, the Mucilage, and on a low-production run derivative of the Mucilage called the Revenson. The Aventador is the latest Lamborghini car to feature the trademark doors. Having used the exotic door style for several of its cars, the Italian manufacturer has become synonymous with the implementation of scissor doors, which are sometimes colloquially referred to as "Limbo doors". Today many aftermarket companies are specialized in production of scissor door conversion kits for regular production cars that originally come with regular doors. A common scissor door conversion kit (also known as a "Limbo-door" kit) includes model specific redesigned door hinges and gas filled shocks. Such kits are usually bolt-on or weld on and require some modifications to front bumpers and door panels. Original door panels are not replaced, so a vehicle looks standard from the outside, when the doors are closed.

III. PROBLEM STATEMENT

The problem statement of this project is divided into several aspects. In remote operated car door opening and closing system, the construction of circuit for remote operated is one of the important aspects. In remote operated system, it is divided into two part; transmitter circuit and receiver circuit. If either one or both circuit is not function, the full system would not work well. The central lock system is the main connector which connecting the remote sensor to solenoid valve (actuator) and alarm indicator. If the central lock is not developed, the system is not fully complete. Design and Development Of Remote Operated Car Door Opening and Closing System To design a remote operated car door system for user to open and close a conventional door. To commercialize this product to people. Opening and closing of car door is always a tedious job. So, the circuit must be constructed first in electronic software. For my final project, the circuits are developed and simulated by using Multisim, Proteus

7 Professional. From this software, the specification of the circuits can be determined easily. For the design of the door and wiring diagram, the Autocad software will be used to develop its.

3.1 Objectives

- To design a remote operated car door system for user to open and close cars door automatically.
- To give user more secure yet cost-efficient way of door locking system.
- To commercialize these products to people
- To familiarize with car door opening System.
- To identify and locate the different components of car door opening System with their operation.
- To understand the concept and working principle of car door opening System.

3.2 Scope

Study about the locking mechanism. Study and research about the usage of remote operated system. Study on the system that will be linked between remote operated and the mechanical locking system of the door. Simulate and investigate the additional circuit in order to apply remote operated doorlock system. Apply the electrical wiring technique to door lock system, testing and troubleshooting.

3.3 Methodology

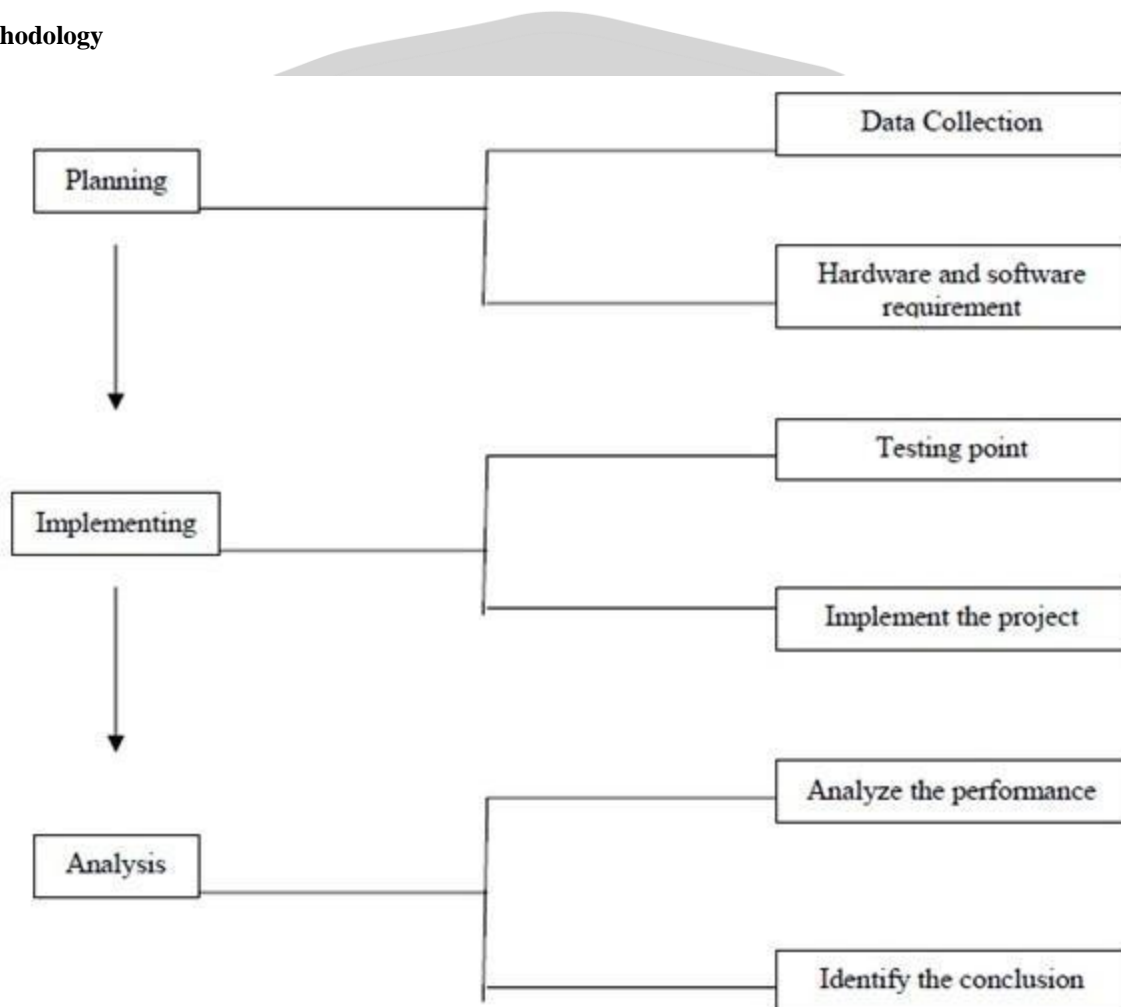


Fig.3.3: Methodology chart

IV. LINKAGE MECHANISM

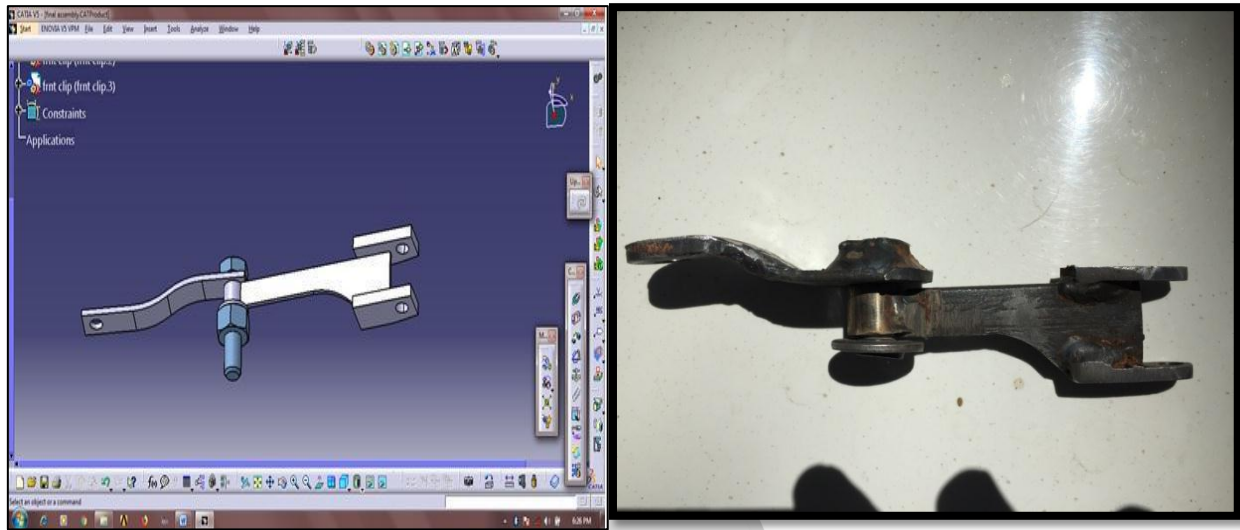


Fig.4.1: Linkage Mechanism

V. ACTUAL SYSTEM



Fig.5.1: Actual System

VI. CONCLUSION

While concluding this part, we feel quite contented in having completed the project Assigned to our group well on time which was a simple model of innovative car door opening system. In this, all the equipment's were mounted on a simple metallic body. We had enormous practical experience on various automobile equipment's. We are therefore, happy to state that our project has helped us in many ways to gain detail knowledge of each and every component of car door opening system. We hope that, the project would be very useful for the students to get familiarized with the basic working of the demonstrated system. The Demonstration Model of the system was an important aspect of this study because a Strong interaction between the different automobile components was needed. For Demonstration purpose, we have used the metallic component which is systematically

explored on metal casting. So overall, we are satisfied with our Project work. The basic objective of this project work is to help let everyone understand each and every System which is used in this project.

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