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AUTOMATIC WHITE BOARD ERASER

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Abstract: *The principle point of our task is to spare time. It's exceptionally difficult to invest our energy dependably in cleaning of the white board. Rather than this, we can control the D.C engine so that the white board to be cleaned. This without a doubt spares our profitable, valuable time. We can do this gigantic work, simply by utilizing forward/reverse switch control. It is exceptionally valuable, as it have different favorable circumstances. Our goal is to plan and build up an electric framework typically "AUTOMATIC WHITE BOARD ERASER". In this project we are using these hardware components Whiteboard, Swapper, Microcontroller, PIC, LCD, and DC motor. Since our adolescence the day we entered school first thing we have seen are blackboards. They established the fundamental frameworks of our insight from the essential ABC's to what we realize even today. India being a nation underscoring on instruction since ages. In any case, the chalks we use on writing boards or the markers on whiteboards should be deleted if next thing is to be taught. This dark or whiteboard eradicating strategy is a repetitive occupation. So to lessen a smidgen time and vitality of the instructors who should raise the cutting edge we have attempted to design the automatic blackboard erasing mechanism. Essentially it is a straightforward Duster connected on a vertical Shaft. The development is finished by the utilization of 2 DC engines and they can be controlled by means of switches given. The Duster might be put in the midsection of the load up so to lessen time to move towards any side of the load up effectively. In this manner the instructors will have the capacity to delete half of the board effectively. To reduce the work and time required to erase the whiteboard so as to ease the problems of teachers as well as students.*

Keywords*: Whiteboard, Swapper, Microcontroller, PIC, LCD, DC motor.*

1. INTRODUCTION

Since our youth the day we entered school first thing we have seen are blackboards. They established the essential frameworks of our insight from the fundamental ABC's to what we

realize even today. India being a nation underscoring on instruction since ages. In any case, the chalks we use on slates or the markers on whiteboards should be eradicated if next thing is to be taught. This blank or whiteboard eradicating technique is a monotonous occupation. So to diminish a tiny bit time and vitality of the educators who might raise the cutting edge we have attempted to design the automatic blackboard erasing mechanism. Essentially it is a basic Duster connected on a vertical Shaft. The development is finished by the utilization of 2 DC engines and they can be controlled by means of switches given. The Duster might be set in the midsection of the load up so to diminish time to move towards any side of the load up effortlessly. In this way the educators will have the capacity to delete half of the board effortlessly. This is a period of robotization where it is comprehensively characterized as substitution of manual exertion by mechanical force in all degrees of mechanization. The operation remains a fundamental piece of the framework in spite of the fact that with changing requests on physical info as the level of motorization is expanded.

Degrees of mechanization are of two sorts, viz.

- Full mechanization.
- Semi mechanization.

In semi mechanization a mix of manual exertion and mechanical force is required though in full mechanization human cooperation is extremely negligible.

2. LITERATURE SURVEY

Deepanjan Majumdar [1] Primitive blackboard erasers were at first wet materials or wood boards appended with eraser materials. They were compelling yet made the client open to the chalk dust which may not be deadly but rather could bring about hypersensitivities and issues to persons influenced by asthma or some other breathing issues. The fundamental construction modeling constantly incorporated the chalkboard itself as a critical part and additionally the duster put in diverse behavior yet with a solitary goal to delete the board.

Billie R. Crisp [2] proposed a framework in 1971, a programmed duster eradicating mechanical assembly for classroom use. The development of the pole altered with the eraser was fundamentally done by manual switches. Yet, the most particular piece of the component was the plural dusters installed on the pole in order to expand the duster reach and in addition cleaning the blackboard turned out to be much simpler. The electric engines compass the entire slate in order to move the duster along it. The rollers at top and base cross movement.

In 1993 Solomon Forst [3] planned a board deleting framework. The blackboard is mounted with the cleaning mechanical assembly fitted to the divider; it incorporates a different duster contraption instead of the cleaning material which was utilized as a part of the past models. They recommended that somewhat expanding the costs on an intricate component and in addition custom assembled vertical erasers we ought to utilize the typical dusters fitted on a different piece which then movers around the entire writing board deleting it.

In 2002 Chirag Shah [4] attempted to make the blackboard framework with Sensors to the engines to start engine development. The component control switches were with the client. The duster moved back and forth to eradicate the writing board. When the engine begins

moving the apparatus and counter rigging associated with the strung pole which then moves the pole.

The most developed blackboard model was outlined by Jinzan Liu, Zhong Zeng and Lang Xu .This blackboard deleting framework was the most progressive slate eradicating component which utilized cameras and advanced picture preparing to delete the erasable markings present on the blackboard. This was equipment and programming associated framework.

3. OBJECTIVE

To reduce the work and time required to erase the blackboard so as to ease the problems of teachers as well as students.
This Project can be further modified into a gesture controlled eraser by using camera and DSP processors so as to identify the position or changing location of the users hand and make the duster do so. This project can also be modified to clean board as present in colleges, conference and seminar hall which is a technical job for any human to perform.

4. PROPOSED SYSTEM

We propose a framework to interface the mechanical parts of the mechanical erasing framework with micro controllers to upgrade it into automation as opposed to manual. We are utilizing small scale controller to interface the board deleting component. The principle segments of the framework can be recognized as 8051 Microcontroller, encoder and decoder (remote transmission) and L293d engine driving IC. The beginning stage incorporates the switches which will be utilized for course of the duster with the encoder IC in order to encode the given input by the client into appropriate configuration for transmission. The microcontroller utilized is 89C51.The yield created by encoder at the transmitter is after it gives to the microcontroller port. Whenever someone presses the switch then it gives the data to the encoder which encodes it into legitimate arrangement. The sign is transmitted to the collector segment. The info is then decoded utilizing decoder. The location lines of encoder and decoder are set at 0 in order to empower the data exchange between them. The decoded bits are after gives to microcontroller which then correct it for the course given by the client and produces appropriate yield for the L293d to execute. The L293d then gives the supply to the engines as indicated in the yield of the microcontroller and the development begins**.** Whenever someone give the voice command then its gives the data to the encoder. The command is then decoded utilizing decoder**.** The decoded command is after gives to microcontroller and swapper can move.

5. ADVANTAGES

- Its construction is simple and requires less maintenance.
- Low cost
- Portable in size and Easy transportable
- No external devices are used here to control it.
- Less Manual Work
- Time saving Project

6. SYSTEM ARCHITECTURE

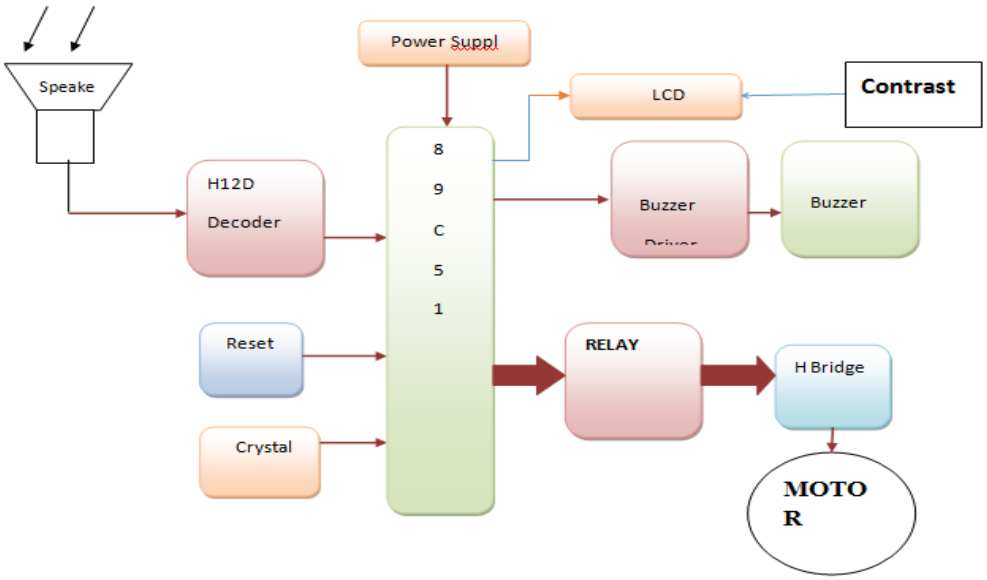

Fig.1: Architecture of proposed system

7. DESCRIPTION

The block diagram of Automatic board cleaner is shown in figure, it consist of a 2V battery, D.C. motor, pulleys and frame stand. The forward and reverse switch is used to control the D.C motor so that it's run in both the direction. The motor and pulley driving mechanism is used to clean the board with suitable arrangement.

8. CONCLUSION AND FUTURE SCOPE

Automatic blackboard erasing mechanisms have been examined and actualized for eradicating the blackboard consequently. It gives a superior answer for the health issues, time limitations in the learning halls. We can take in the principle philosophy to utilize DC engines to start development of shaft and microcontroller to control the development of the pole. Future Scope This Project can be further changed into a gesture controlled eraser by utilizing camera and DSP processors in order to recognize the development of the clients hand and make the duster do as such. This venture can likewise be changed to clean glass as present on high structures which is an extremely dangerous employment for any human to perform.

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