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AUTOMATIC ROBOTIC MOP

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ABSTRACTS:

The present day scenario all the members of family are busy with their work and are getting proper time to clean the house. The cleaning robot helps to clean and mop the floor. This is done by simply pressing a switch and the robot does the work. This also cuts down the labor used in factories for cleaning floor. Above being the case, motivated for the design and development of an automatic cleaning and mopping robot that does all the cleaning and mopping work with a simple press of a button. This robot can be controlled manually with the help of a mobile Bluetooth. The main moto of the project is to make this affordable and suitable for the Indian users and factories. The development of the robot starts with the design of a simple and most effective chassis for the robot which is a very important part as it has to carry all the weight on the robot. The electronics part where, the type of motor and its specification that should be used to run the bot, the sensors to be used, the microcontroller, the motor drivers, the wheels and other electronic components to be used on the robot are decided. Further, the assembling of the components will be done and finally testing and calibrating the device. A robot which is capable of efficient dust cleaning and moping of the floor of a given room is the main aim of the robot. It is aimed to make the robot economic and feasible for the economic class society. The target time of operation of the robot is one hour. The developed robot will be useful for the household application and industries. This helps to keep the workspace and house clean without the physical labour. Also, the device will clean the room with a single switch of button.

Index term : automatic robot, Object monitoring, wet moping, Arduino . ultrasonic sensor.

1. INTRODUCTION

Robots are machines which are programmable and are able to carry out complex tasks with minimal human interventions. Robots find applications on many domains, even for household applications Robots for domestic application have been rising. Vacuum cleaning robots are especially famous Among various robots present in the world only some robots can be used especially for doing the household chores of man. Among those robots, one special kind of robot that is very useful for everyone is cleaning and mopping robot . A simple automatic robot that uses some prefixed algorithms and programs to clean the specified area is called a cleaning robot.

The main use of this robot is to reduce the human interaction in the cleaning process which can be a time taking process . These robots can be used anywhere i.e., in offices, houses, industries etc. These robots can be activated with the press of a single button or can be pre-set to activate at a particular time.

2. PROPOSED SYSTEM

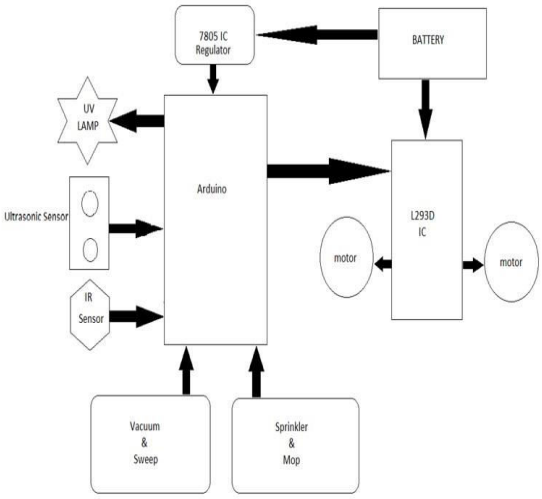

Figure.1. Block diagram of the Proposed System

Automatic floor cleaner is an autonomous robotic machine that helps the user in cleaning their places. Arduino microcontroller is used for the processing and connection of different components like sensors, motors, another IC (L293D) etc. It uses IR sensor and ultrasonic sensors for the detection of objects and distance and the Arduino gives the signals to the motors to take turn according to the position. For sweeping, it makes the use of brushes and vacuum pump and provides wet cleaning via the combination of water sprinkler and roller. At last, it also kills the germs of the floor via UV lamp present at the tail end of the machine.

3. CONCLUSION

There are so many cleaning and mopping robots present in the market but only some of them are affordable and economic. There are very fewer robots that include both cleaning and mopping. With this work, we tried to reduce the cost of the robot and make it more compatible with the Indian Users and the Industries. To further enhance the navigation performance of the robot, feedback sensors such as optical encoders can be integrated. Cleaner brushes can be added to vacuum cleaning mechanism to increase the efficiency of dust collecting. Lithium polymer batteries can be used to reduce the weight of the robot.

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