AUTOMATIC RAIN SENSING WIPER AND HEADLIGHT CONTROL IN THE VEHICLE

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ABSTRACT

Wiper is an essential component that used to wipe raindrops or any water from the vehicle's windscreen and Head light is used to safety purpose during night. The previous system used to activate the wiper manually and the process of pulling up the wiper is difficult to be handled and now a days the headlight also glows in a day time. This day time AHO reduce the vehicle mileage. Thus, this method is planned to unravel these issues. The objectives of this project are to upgrade the older cars system by providing automatic wiping and headlight system , to improve the system by using sensor with actuator and to style a basic program that may totally operate with the system. The thought of this planned wiper system is comparable with alternative existing standard wiper. In spite of removing water from windscreen, this system also will be upgraded to an automatic control system by using a arduino UNO, rain detecting and intensity sensor, fog sensor and day night sensor.

Keyword : - *Rain sensor, Arduino uno, LDR, Head light, wiper motor*

1. INTRODUCTION

All the four wheelers area unit equipped with the wipers. These wipers are used to wipe the water on the windshield during rainy seasons so as to obtain clear vision. The wipers invented previously used to oscillate at a slow speed. Sometimes this cause the distraction to the driver's visibility. This diode to the invention of various speed wiper motors. The previous system accustomed activate the wiper manually and also the method of propulsion up the wiper is tough to be handled.To provide tension free driving, automatic wipers were enforced.Now a day the headlight also glows in a day time.

This day time AHO reduce the vehicle mileage. During night driving tons of glare is intimate by the motive force of the vehicle. He may sometimes face the Toxler Effect and this may lead to accident.The objectives of this project are to upgrade the older cars system by providing automatic wiping and headlight system. This project which will provide ease of operation and look after the human comfort.

2.HARDWARE DESCRIPTION

2.1 Arduino Uno

The Arduino UNO could be a wide used ASCII text file microcontroller board supported the ATmeg328Pmicrocontroller and developed by Arduino.cc the board is provided with sets of digital and analog

input/output (I/O) pins that will be interfaced to varied enlargement boards (shields) and alternative circuits. The board options fourteen Digital pins and six Analog pins.

It is programmable with the Arduino IDE(Integrated Development Environment) via a sort B USB cable. It are often high-powered by a USB cable or by associate degree external nine V battery, although it accepts voltages between seven and twenty volts.

2.2 Rain Detecting Sensor

The rain sensing element detects water that completes the circuits on its sensing element boards written leads. The sensor board acts as a variable resistor that will change from 100k ohms when wet to 2M ohms when dry. In short, the water the board the more current that will be conducted.

2.3 Motor

DC motor is rotary electrical machines that coverts direct current electrical energy into mechanical energy. Geared dc motor includes a gear assembly connected to the motor. this concept wherever gears scale back the speed of the vehicle however increase its torsion.

2.4 Motor Driver

Motor driver is associate degree computer circuit chip that is sometimes wont to management motors. Motor driver act as an interface between arduino and the motors.The mostly used motor driver IC's are L293, L293D, L293NE and L298N.

2.5 LDR Module

LDR is the abbreviation for Light Dependent Resistor. As the high intensity lightweight falls on that its resistance changes. In LDR candlepower and therefore the resistance area unit reciprocally proportional. Thus the resistance decreases because the high intense lightweight is incident on that. Further the signal from LDR is given to junction transistor.

The LDR detector Module is employed to find the presence of sunshine /measuring the intensity of sunshine. The output of the module goes high within the presence of sunshine and it becomes low within the absence of sunshine. The sensitivity of the reception will be adjusted victimization potentiometer.

2.6 Head Light

A light could be a lamp connected to the front of a vehicle to lightweight the road ahead. Headlamps are usually referred to as headlights, however within the most precise usage, light is that the term for the device itself and light source is that the term for the beam of sunshine created and distributed by the device.

Headlamp performance has steady improved throughout the car age, spurred by the good inequality between daytime and nighttime traffic fatalities: the North American nation National road Traffic Safety Administration states that just about half of all traffic-related fatalities occur within the dark, despite solely twenty fifth of traffic traveling throughout darkness.

2.7 Connecting Wires

Connecting wires permits Associate in Nursing electrical current to travel from one purpose on a circuit to a different as a result of electricity desires a medium through that it will move. Most of the connecting wires area unit created from copper or metallic element. Copper is cheap and good conductivity. Instead of the copper, we are able to conjointly use silver that has high physical phenomenon however it's too expensive to use.

2.8 Battery

An electric battery may even be a tool consisting of one or heaps of chemistry cells with external connections provided to power electrical devices like flashlights, smartphones, and electrical cars. When battery is activity wattage, its positive terminal is that the cathode and its negative terminal is that the anode.

3.BLOCK DIAGRAM
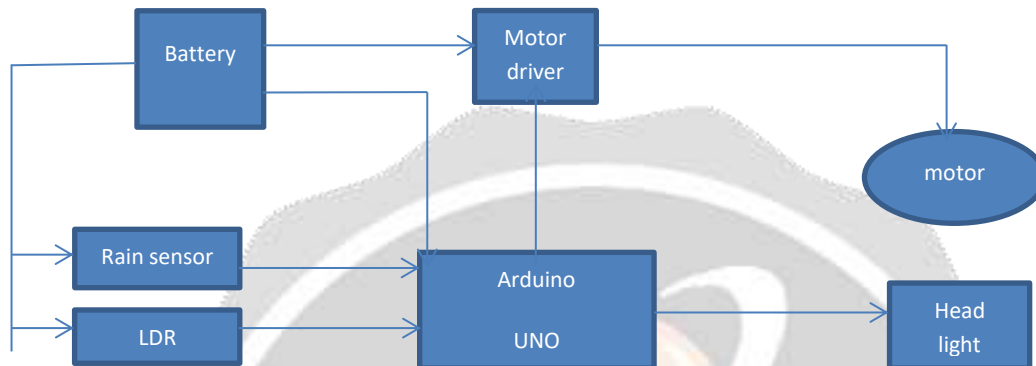
Battery: 12v and 5v dc power supply.
Arduino UNO: Microcontroller.
Input devices: Rain sensor, LDR module.
Output devices: Motor, Head light.

4.WORKING PRINCIPLE

When the rain is detected by rain sensing senor the wiper will be automatically ON and Headlight automatically ON and OFF at night and daytime. All the four wheelers area unit equipped with the wipers. These wipers are used to wipe the water on the windshield during rainy seasons so as to obtain clear vision. The wipers invented previously used to oscillate at a slow speed. Sometimes this cause the distraction to the driver's visibility. This diode to the invention of various speed wiper motors.

The previous system accustomed activate the wiper manually and also the method of actuation up the wiper is troublesome to be handled. To provide tension free driving, automatic wipers were enforced. Now a day the headlight also glows in a day time. This day time AHO reduce the vehicle mileage. During night driving a great deal of glare is fully fledged by the driving force of the vehicle. He may sometimes face the Toxler Effect and this may lead to accident.The objectives of this project are to upgrade the older cars system by providing automatic wiping and headlight system. This project which will provide ease of operation and look after the human comfort.
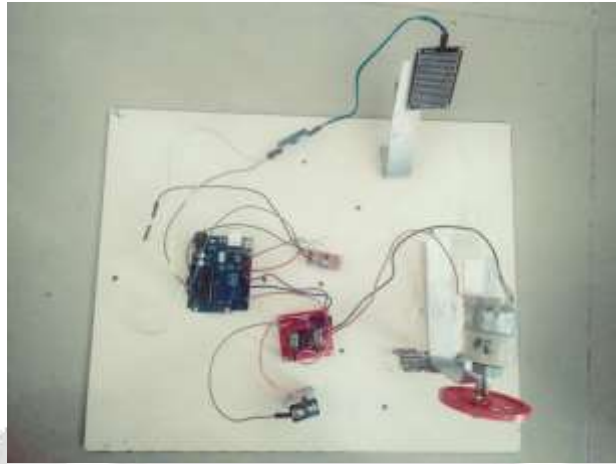
5.PHOTOGRAPH

Fig 3.Experimental Setup

6.ADVANTAGES

Reduces human effort by modifying the wind shield.
Makes the windshield free from wear adjustment.
Avoids the glare of light faced by the driver during night driving.
Reduces the accidents caused by 'Toxler Effect'.
Cheap and best.
Automatic Speed control of wiper is possible

7.CONCLUSION

The construct of Automatic Wipers with Mist management has been enforced with success. After the experimental setup the wiper motor was tested for all the following conditions drizzling, heavy rain, and medium rain. The check are conducted underneath mist on the wind protect. The mist has been removed with success from the wind protect. By the uses of automatic wipers one will drive the business vehicles with none distractions to work the wipe. Use of internal wipers ensures smart visibility to the motive force, that successively prevents the accident.

8. REFERENCES

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