

LED Hologram Fan

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Abstract

We have assured that the image created by our project is clear and it is visible to the human eyes and which does not effect human eyes, and our project is so durable and so much cost effective which does not require so much money to create it and it is easily affordable normal person, it also can be used for bill boards advertising purpose and also it can be used in schools and colleges for educational purpose. The pervious projects where unable to create a perfect images but we used much higher rpm generating fan and it will increase the quality of the images. And by using the defused high lumens emitting led the image created will be brighter and bolder.

Key Words: LED, Arduino Nano, Capacitor, Resistor, DC Motor.

INTRODUCTION

Holographic fans are types of displays that produce a holographic-like image seemingly floating in the air, by having strips of RGB LEDs attached to the blades of the fan and a control-unit lighting up the pixels as the fan turns around, to produce the full picture. This will trick the observer's brain to see the image as a whole and perceive the displayed object floating in the air as the observer can see through the fast spinning display.

LED is a semiconductor device and this is emits light when electric light are passed it. And it is light produced that are carry the particles they are also known as electron and holes combine together within the semiconductor material. when current I base forward and applied through the P-N junction diode, the minority carrier electron injected into P-region and also corresponding Minority carrier electron are that injected into N-region. In P-region recombination are electron hole.

Electron energy transitions a cross the energy gap are also called radiative recombination produce photons. while light is shunt energy transitions it called non-radiative recombination are produce phonons.

Electric motor is a electric machine convert the electrical energy into mechanical power. Electric motor operate through interact between electric power and magnetic motor in the wires winding. it in interaction generates a forces using faraday's law form torque and it is applied for motor's shaft. DC motor of four basic classification that are mention in above, it is a one and only driven through direct electric current and also it is a more primitive version of electric motor, they rotating torque are produced to flow of current through by the conductor inside a magnetic field.

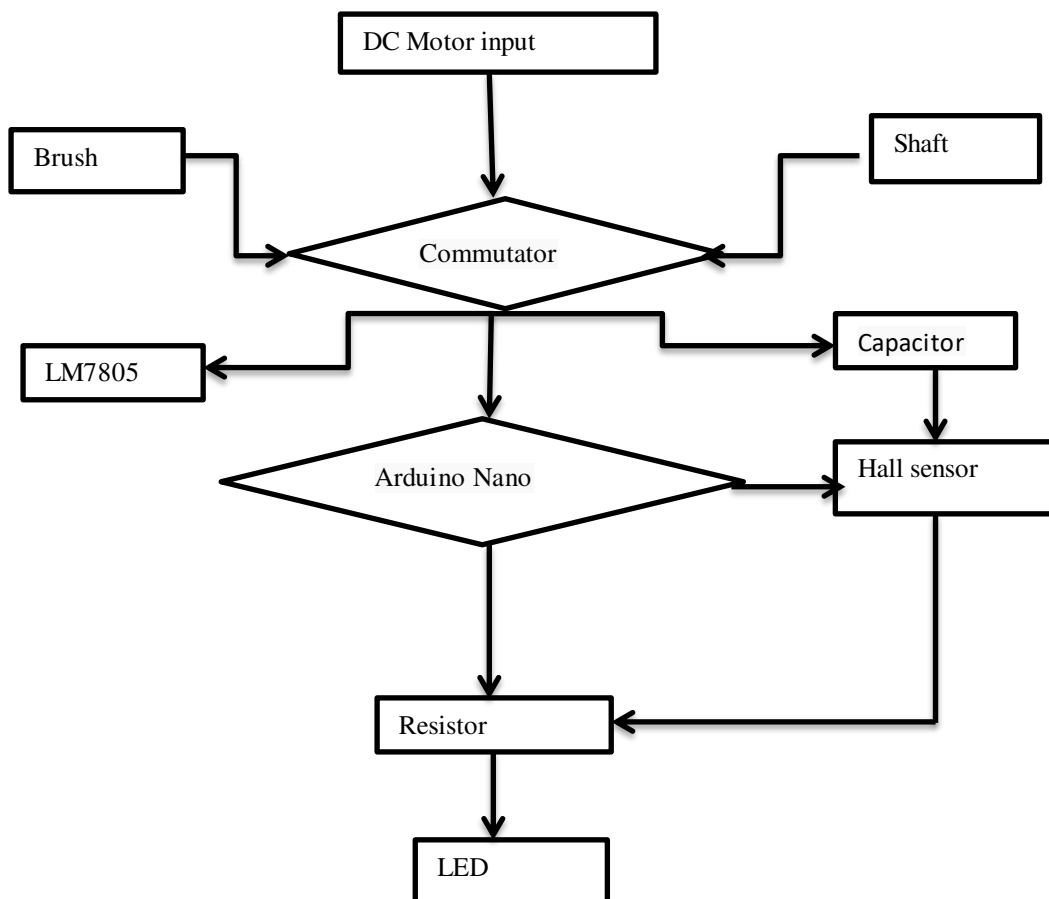
Resistor is passive electric comment that are create resistance in electric current flow, In resistor almost all electric circuit and network can be found. Current proportional voltage across to the terminal ends and also we Can use this resistor at many purpose, like such as some example are voltage division, heat generation, matching, loading circuits, control gain and electric current

METHODOLOGY

In this circuit we are going to apply DC current which also known as direct current and opposite of alter net current DC current will trigger the DC motor which is connected through brush and commutator the current will flow through commutator and brush to words. The LM7805 is an IC which required DC input to work as voltage regulator then we need two capacitor with the power of 16v 470uf 10v 100uf this capacitor is required because the distance between IC regulator and filter power supply is higher but the capacitor in this circuit is optional because this helps in transient response.

In Arduino Nano VIN is connected with IC LM7805 and GND pin is connected with hall sensor which is used to detect presence and the magnetic field in the circuit, +5,A6,A7 pins are connected to the negative terminals of the capacitors, the current is provided through the capacitor towards arduino ,and the negative terminal of capacitor is sent towards hall sensor which works as detection system of magnetic field which interrupts between this circuit, the positive terminal of hall sensor is connected with the analog pin A0 and the negative terminal is connected with GND ground pin in arduino.

Flow chart:



MODELING AND ANALYSIS

Model and Material which are used is presented in this section. Table and model should be in prescribed format.

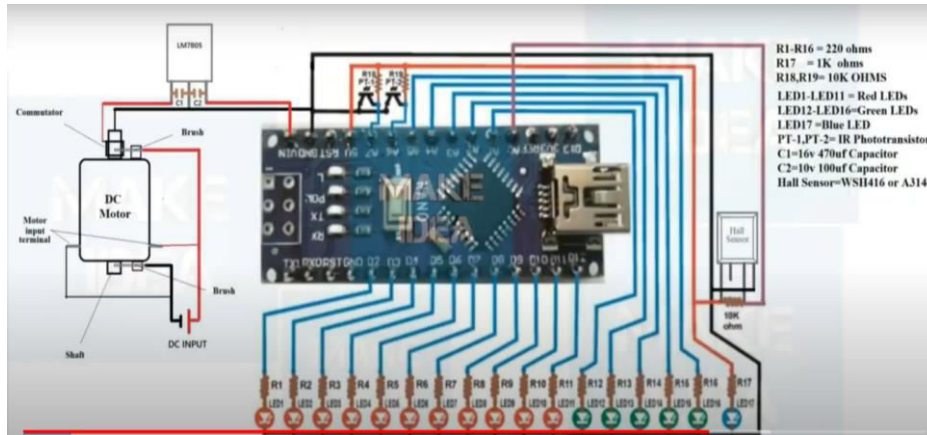


Figure 1: circuit Diagram.

Arduino Nano: Arduino Nano are flexible, small, compatible for every one and easy to understand that’s why breadboard friendly microcontroller board. In this Arduino Nano 2 reset pins, 14 digital pins, 8 analog pins and 6 power pins.

In Arduino Nano A0 TO A7 pins are analog pin these are used for measure analog voltage at 0-5V and D0-D13 pins are digital pin these is used for as input or output pin from 0 to 5V.in this Arduino Nano 2 reset pins this is used for reset the program. and also have one USB port that port we are used for check the Arduino are work or not and as well as use for insert the program.

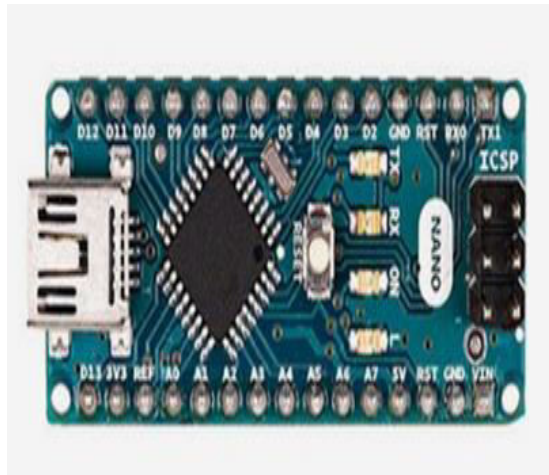


Figure 2: Arduino Nano

Capacitor: The capacitor are store the electric power in electric filed and that is also passive electric comment, and also known as capacitance. A some capacitor exists between the two electrical conductor in proximity in an circuit it was originally such known as an condenser and condenser, it is also used to store electric current that it can carry forward store current when it is required. Nonconducting dielectric are more increase the capacitor charge capacity, In dielectric commonly used material like such as plastic film, paper, air and ceramic.



Figure 3: Capacitor

RESULTS AND DISCUSSION

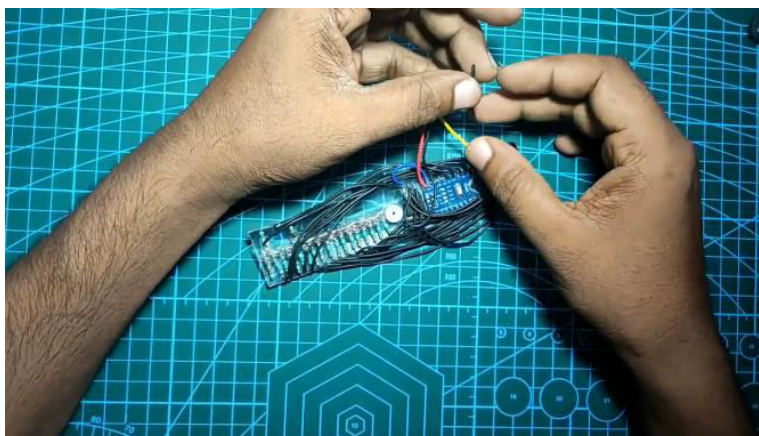


Figure:3 output

CONCLUSION

There are more advanced project then we have made but the rotations per minute speed of the fan is lower in the markets advance project which leads to the poor quality of the image which is produce by advance fan but we try to make higher rotations per minute speed of the fan in our project which is improves the quality of the image using higher quality of led lights Our project has the low cost and it is easy to use for any human being can easily operate and understand.

This project can be used as marketing strategy such as home to home marketing ,shops schools. This has so much scope in marketing field. In This project we have implemented with basic experiment and it can be improved in future we can do 3D image set in the project as well as we can also watch the movie and it will use for security purpose like we can will watch the camera recording videos and also use for advertisement such as road side digital marketing.

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