VIVEKANAND EDUCATION SOCIETY'S

INSTITUTE OF TECHNOLOGY

ELECTRONICS AND TELECOMMUNICATION DEPARTMENT.

MINI PROJECT ON

Topic: - Floor Mounted Cloth Drying System.

Subject: - Microelectronics

Class: - D14C.

Under Guidance of: - Mr. Mrugendra Vasmatkar

Team Members:-

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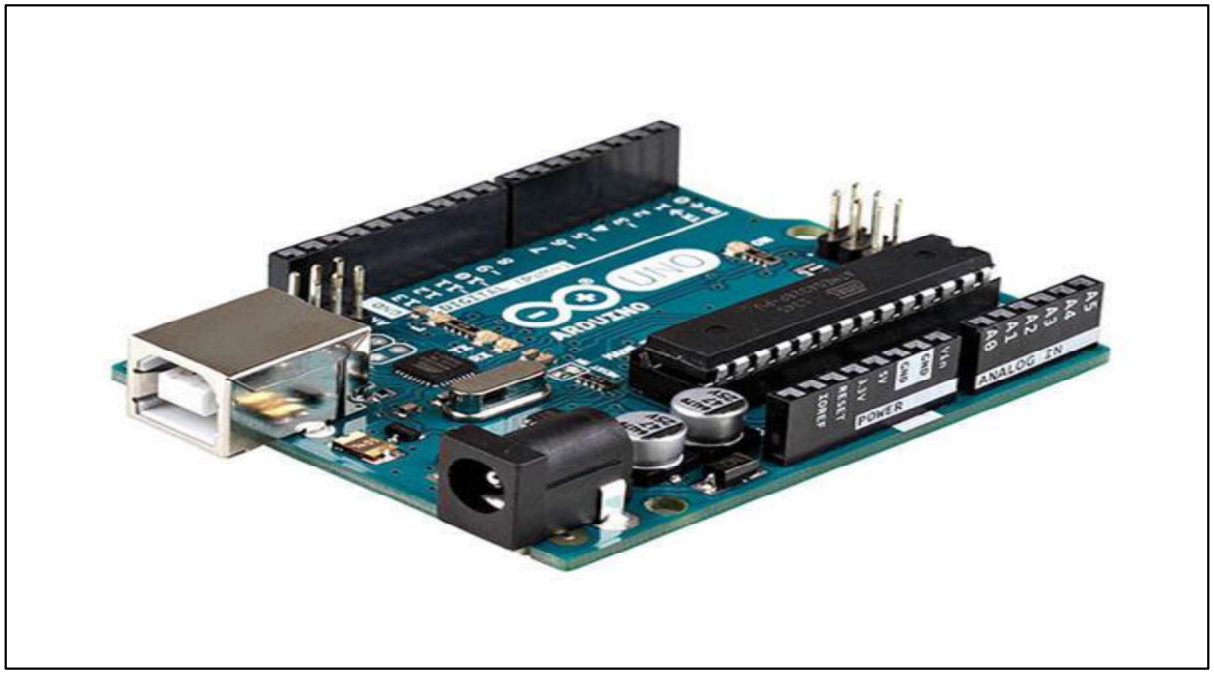
- **Title of the project:-** Floor Mounted Cloth Drying System (DC Supply)
- **Project Requirement:-** Arduino Uno
- **Hardware Required:-**

1. Arduino Uno
2. Two Motors (18000 RPM)
3. Floor Mounted Wooden Stand
4. MD-L298 Motor Driver

- **Project Description:-**

1. **ARDUINO UNO-:**



Arduino Uno is a microcontroller board based on the ATmega328P (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. It is an open-source platform, means the boards and software are readily available and anyone can modify and optimize the boards for better functionality.

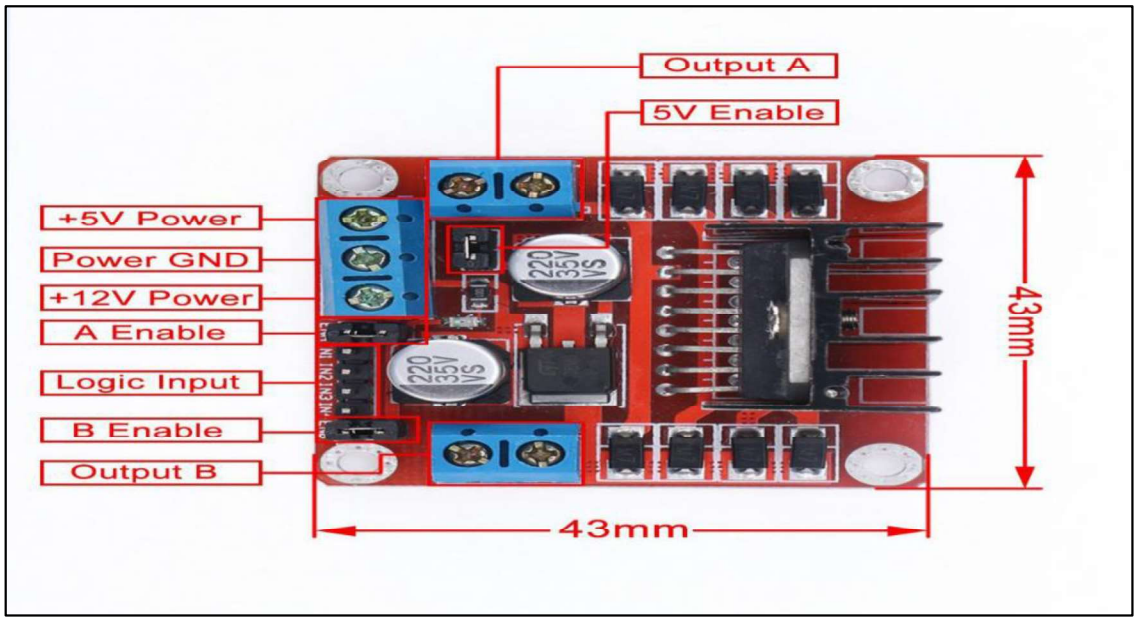
The software used for Arduino devices is called IDE (Integrated Development Environment) which is free to use and required some basic skills to learn it. It can be programmed using C and C++ language. Some people get confused between Microcontroller and Arduino. While former is just an on system 40 pin chip that comes with a built-in microprocessor and later is a board that comes with the microcontroller in the base of the board, bootloader and allows easy access to input-output pins and makes uploading or burning of the program very easy.

2. DC Motor-: DC Motor is connected to Fans which are used for drying clothes. DC Motor speed, timing is mainly controlled by Arduino Uno. This is working of DC Motor in Our Project.

3. Aluminum Coil-: We Aluminum Coil as a heater in our Project. We give a supply to coil and coil will get act as a Heater.

4. MD-L298 Motor Driver:- Arduino will drive the motors using a motor driver.

MD-L298 Motor Driver Description-:

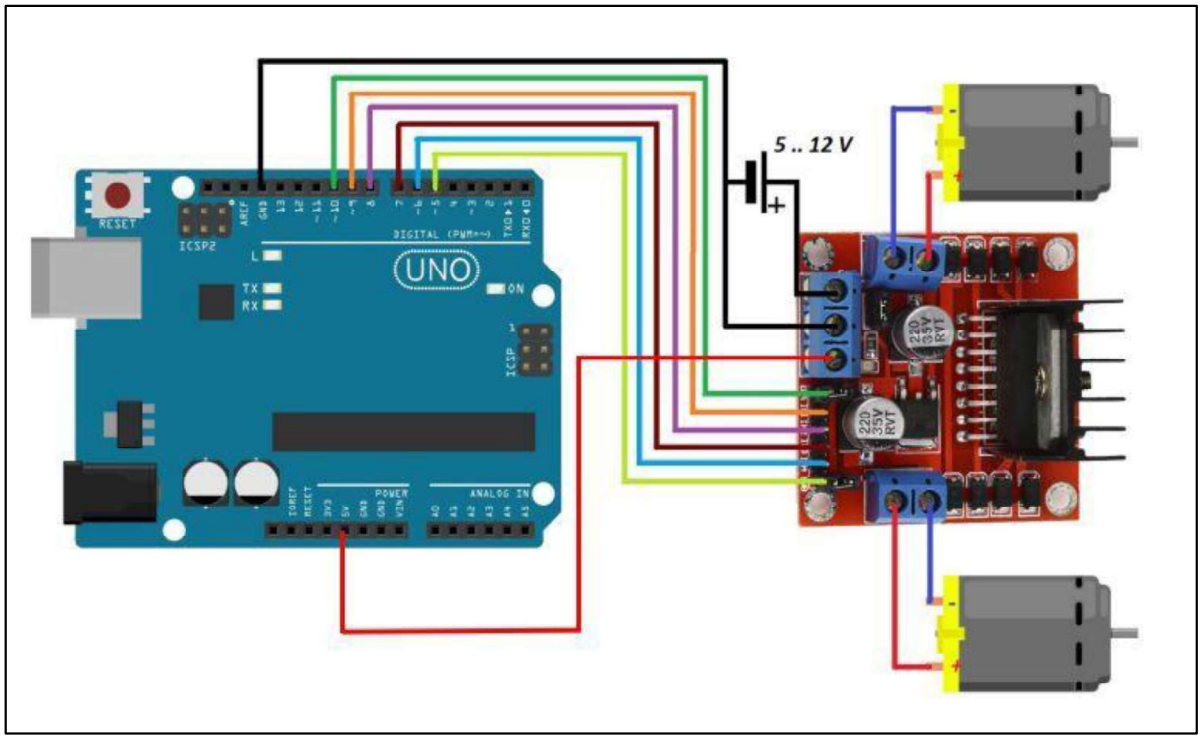


This dual bidirectional motor driver is based on the very popular L298 Dual H-Bridge Motor Driver IC. This module will allow you to easily and independently control two motors of up to 2A each in both directions.
It is ideal for robotic applications and well suited for connection to a micro-controller requiring just a couple of control lines per motor.

- **Features-:**

1. Driver: L298
2. Driver power supply: +5V to +46V
3. Logic power output Vss: +5 to +7V (internal supply +5V)
4. Logic current: 0~36mA
5. Controlling level: Low -0.3V to 1.5V, high: 2.3V~Vss
6. Dimension: 2.7 * 4.5 * 4.5 cm
7. Driver weight: 48g

- **Hardware Installation-:**



The diagram shows the hardware connection between Motor Driver Module and Arduino UNO. Besides Arduino, it may interface with any microcontroller such as PIC and etc.
Note: The Ground of battery, Motor Driver Module and Arduino should be connected together.
Connection between:-

IN1 > Arduino Pin 9
IN2 > Arduino Pin 8
ENA > Arduino Pin 10
IN3 > Arduino Pin 7
IN4 > Arduino Pin 6

- **Theory Of Operation-:**

IN1	IN2	Motor Rotation
0	0	Stop rotate
0	1	Clockwise
1	0	Anticlockwise
1	1	Stop rotate

IN3	IN4	Motor Rotation
0	0	Stop rotate
0	1	Clockwise
1	0	Anticlockwise
1	1	Stop rotate

Motor 1		
IN1	IN2	Motor Rotation
0	0	Stop rotate
0	1	Clockwise
1	0	Anticlockwise
1	1	Stop rotate

Motor 2		
IN3	IN4	Motor Rotation
0	0	Stop rotate
0	1	Clockwise
1	0	Anticlockwise
1	1	Stop rotate

- **Working:-**

1. Once you are ready with the hardware and program it's time to have some fun.
2. Make a connection as per the diagram. Now, hang wet clothes on Rope and turn ON the supply.
3. Also give supply to Aluminum coil for heating.
4. Now dry your clothes.

- **Application: -** It is used for Cloth Drying System.

- **Conclusion:-** In this Project we successfully made Floor mounted cloth drying system with DC Supply using Arduino. In this we attached a fan and also attached Aluminium coil as heater. We attached heater for quick drying. Hence, we successfully made Floor mounted cloth drying system based on DC Supply.

- **Reference:-**

https://www.instructables.com/id/Tutorial-for-MD-L298-Motor-Driver-Module/
https://drive.google.com/drive/folders/0ByfmRaocZIg0TGI2c3RmbEtmM1kv
https://www.ifuturetech.org/product/l298-module-l298n-dual-hbridge-dc-stepper-motor-driver-shield-expansion-controller-board-diy-kit/
https://www.banggood.in/Wholesale-Dual-H-Bridge-DC-Stepper-Motor-Drive-Controller-Board-Module-Arduino-L298N-p-42826.html