# **Abstract:**

# In this project, designs and simulations for a DC fan control system based on high temperatures are presented. This solution integrates an Arduino Controller, the DHT11 temperature and humidity sensor. The temperature of the room will be reduced by using the fan. We will utilize a DTH11 Humidity Sensor to construct the fan. The sensor will continuously monitor the temperature. The fan will be in "On" mode when the temperature rises above a certain threshold. The LCD monitor will show the current temperature of the fan.

1. **Introduction:**

Every day, scalable systems are being introduced as a result of technological innovation. Everything is becoming more complicated and accessible. Modern technology and intelligent electronic systems are in more demand. As the brain of the system, micro-controllers are crucial to the development of smart systems.

It should be noted that a microcontroller cannot deliver the current necessary for a DC motor to function, hence the DC motor is really not directly linked to the microcontroller. In many fields of life nowadays, micro-controllers are employed to perform automated activities more precisely.

Due to its benefits of cheap cost and power consumption, the electric fan is one of the most popular electrical devices. An automatic control system that responds to environmental factors.

And providing a comfortable and energy-efficient space is among the most logical things to do. The fan is still on the market and has been there for a considerable length of time.

In order to keep the environment comfortable, there is a necessity for precise temperature regulation. Automated systems are used to further automation and the pursuit of simplicity. primitive feeling of switching on and off a fan and adjusting the speed controller. In this manner, the only way the fan speed may be altered by the temperature is by manual adjustment. Therefore, a fan speed control system that changes automatically based on temperature measurement is required.

Utilizing the capabilities of the Arduino, the automatic temperature regulated fan offers a speed control mechanism for the fan that is independently controlled by temperature. The fan measures the ambient temperature using an Arduino, a motor, cables, sensors, and other gear, and then adjusts its speed automatically based on that information. One useful use is the incorporation of a microcontroller in such a temperature controller that may be used to automatically regulate a room's temperature by automatically regulating the fan's speed.