TITLE OF THE PROJECT:

AUTOMATIC FAN SPEED CONTROLLER FOR DOMESTIC PURPOSE

COMPONENTS:

- Arduino uno
- LM35 DZ
- 12V power supply/adapter
- Breadboard
- Jumper wires
- Zbotic DHT11 Digital Temperature Humidity Sensor Module
- Lcd Display
- Motor withFan

COMPONENTS:

- Resistors
- Capacitors
- Transistors
- Diodes

ABSTRACT

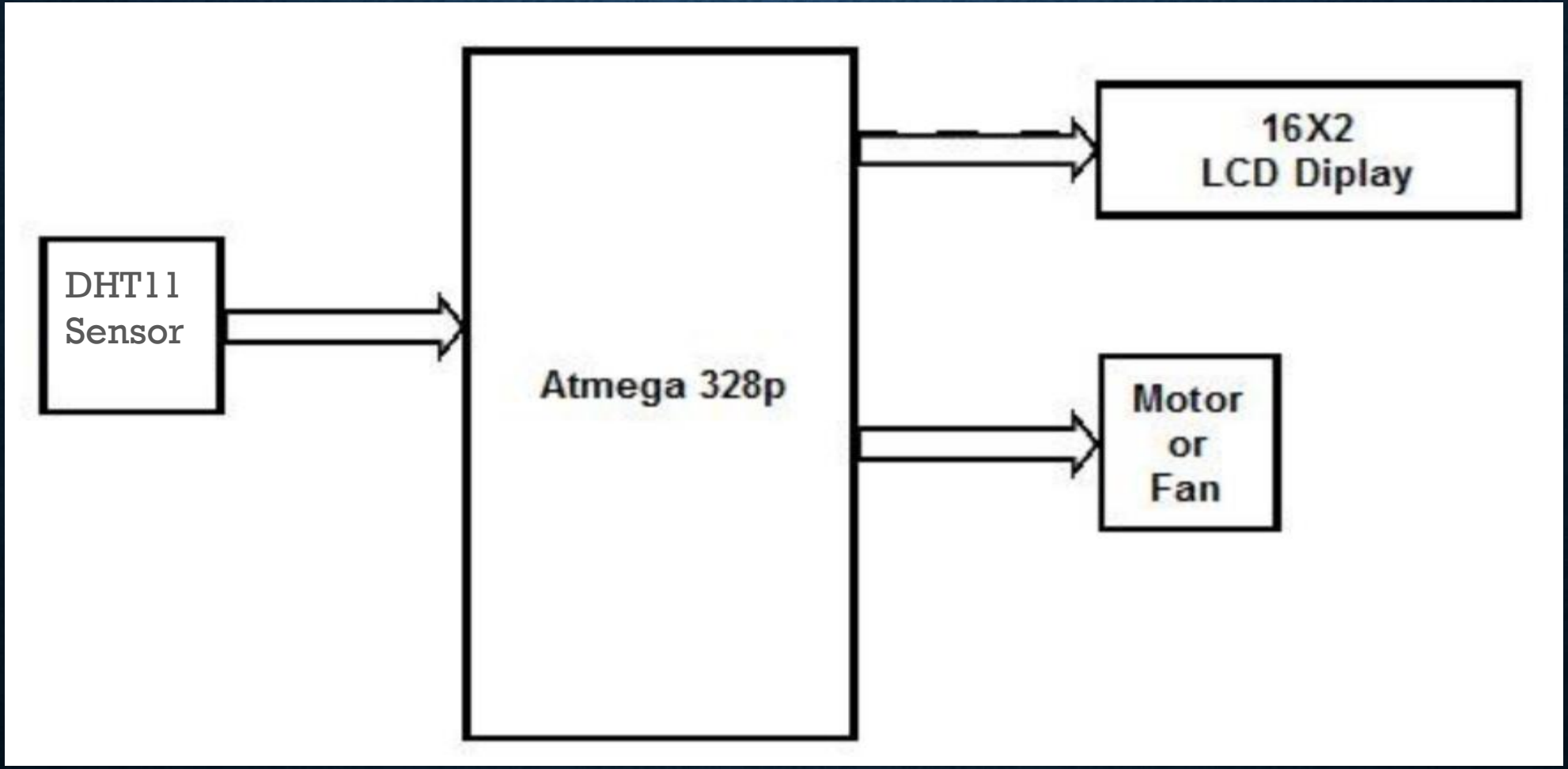
This project is about automatic fan speed controller that controls the speed of an electric fan according to our requirement. Use of Arduino that is embedded system makes the project simple and more efficiency. The sensed temperature and fan speed level values are simultaneously displayed on the LCD panel. It can be implemented for several applications including air-conditioners, Waterheaters, snow-melters, ovens, heat-exchangers, mixers, furnaces, incubators, thermal baths and veterinary operating tables.

ARDUINO micro controller is the heart of the circuit as it controls all the functions. The temperature sensor LM35 senses the temperature and converts it into an electrical (analog) signal, which is applied to the microcontroller.

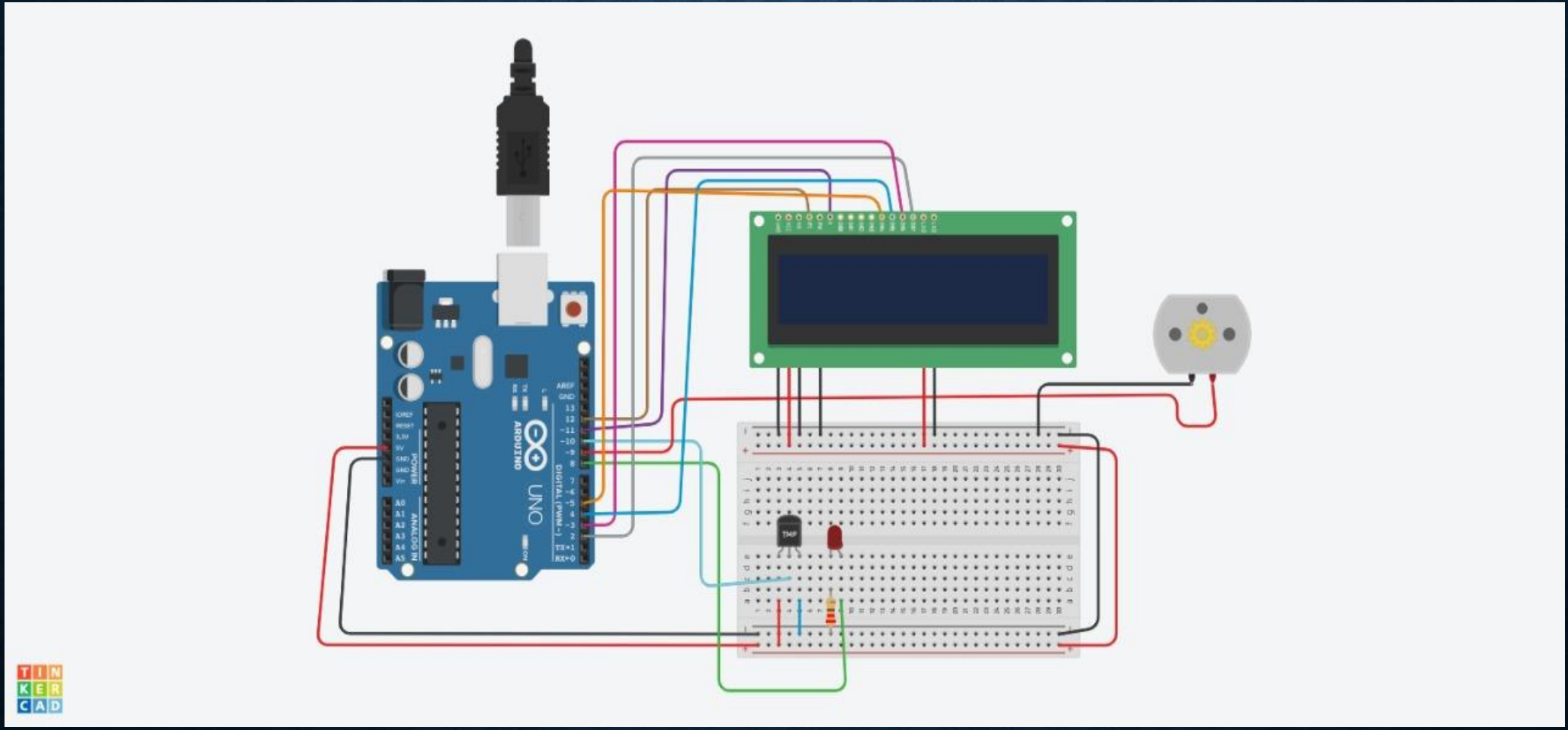
INTRODUCTION

With the advancement in technology, intelligent systems are introduced every day. Microcontrollers play a very important role in the development of the smart systems as brain is given to the system. Microcontrollers have become the heart of the new technologies that are being introduced daily. The increase in technology leads to many automatic innovations that are taking place. In many ways the power is getting wasted as of our laziness or carelessness as we switched on ac and forgets to switch off in the afternoon times, So this project is Automatic fan speed controller which decreases the speed and even power offs if the condition satisfies

BLOCK DIAGRAM



DIAGRAM



DESCRIPTION

- We used Arduino Uno 3 as it has more efficient microcontroller that helps in working of this project.
- LCD display is used to display the temperature and the fan speed.
- LM35 temperature sensor is taken and provided with Arduino voltage that is 5V.
- The pins of fan, sensor, display are connected to the Arduino to respective pins as mentioned in the code.
- The most important thing is to set the temp Min and temp Max as your desired values.
- Temp Min is the value where the fan starts to spin and temp Max is the value where the red light glows as it indicates the speed of the fan reached maximum.
- If() condition checks the temperature condition whether it is greater than temp Min and lesser than temp Max.

APPLICATIONS

- Temperature based fan speed controller is useful for cooling the processor in the laptops and personal computers “more efficiently”. Generally fan in laptop comes with only two or three possible speeds. So it results in more power consumption.

- The fan designed in this project, has different values of speed according to temperature change. This can be also used in small scale industries for cooling the electrical/mechanical equipment. The whole circuit except motor and fan can be manufactured on a single PCB, and it can be used for temperature based control operations