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ET491: Final Project

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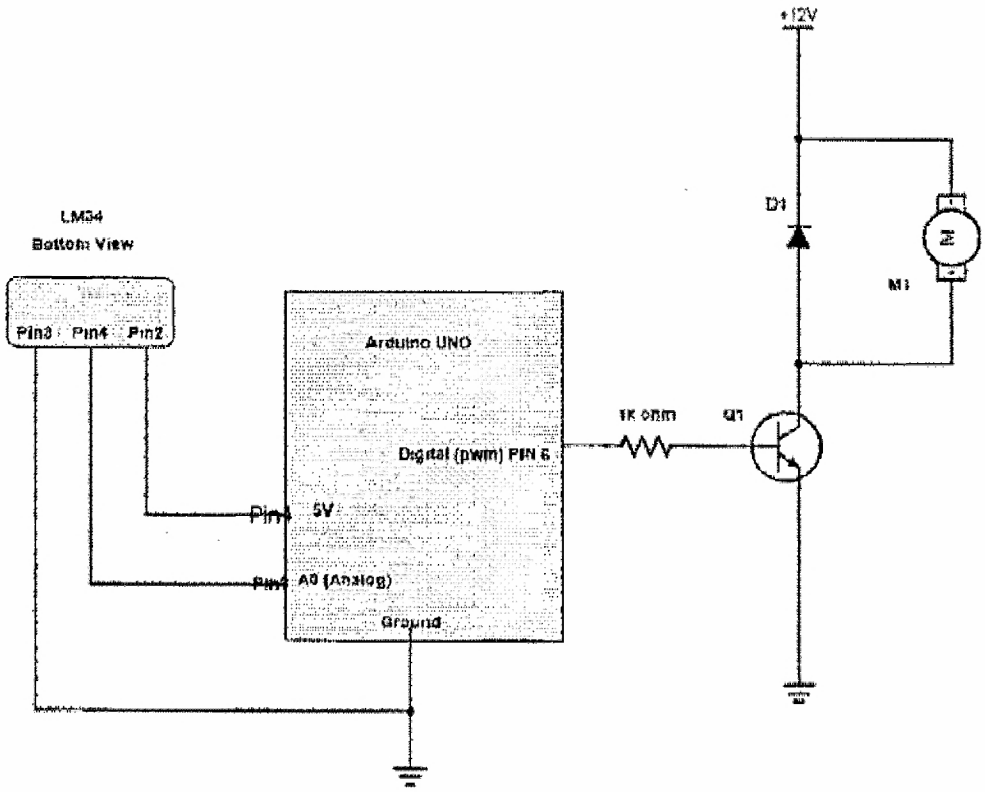
## INTRODUCTION

In this lab, we used Arduino UNO to implement the use of a temperature sensor (LM34) to control the speed of a D.C motor. The objective of this lab is as the temperature increases the motor will spin faster and as the temperature decreases the motor will spin slower.

## LIST OF COMPONENTS

- Arduino UNO
- 1k resistor
- Diode
- Transistor
- Temperature sensor (LM34)

## SCHEMATIC



APPENDIX

```
float temp;
int tempPin = A0; //arduino pin used for temperature sensor
int tempMin = 70;   // the temperature (F) to start the motor
int tempMax = 100; //maximum temperature
int fan = 6;       // the pin where fan is connected
int fanSpeed = 0; //initial fan speed

void setup() {
  pinMode(fan, OUTPUT);
  pinMode(tempPin, INPUT);
  Serial.begin(9600);
}

void loop() {
  temp = analogRead(tempPin);
  temp = (temp * 5.0 * 100.0) / 1024.0;
  Serial.println(temp);
  delay(2000);       // delay in between reads for stability
  if (temp < tempMin) {  // if temp is lower than minimum temp
    fanSpeed = 0;      // fan is not spinning
    digitalWrite(fan, LOW);
  }
  if ((temp >= tempMin) && (temp <= tempMax)) //if temperature is higher than the minimmum
range it will spin accordingly
```

```
  {
    fanSpeed = map(temp, tempMin, tempMax, 32, 255); // the actual speed of fan
    analogWrite(fan, fanSpeed);  // spin the fan at the fanSpeed speed
  }
}
```