```
#include
//source: https://www.electroschematics.com/9540/arduino-fan-speed-controlled-temperature/
LiquidCrystal lcd(7,6,5,4,3,2);
int tempPin = A1;   // the output pin of LM35
int fan = 11;       // the pin where fan is
int led = 8;        // led pin
int temp;
int tempMin = 30;   // the temperature to start the fan
int tempMax = 70;   // the maximum temperature when fan is at 100%
int fanSpeed;
int fanLCD;

void setup() {
  pinMode(fan, OUTPUT);
  pinMode(led, OUTPUT);
  pinMode(tempPin, INPUT);
  lcd.begin(16,2);
}

void loop() {
   temp = readTemp();     // get the temperature
   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 minimum temp
      fanSpeed = map(temp, tempMin, tempMax, 32, 255); // the actual speed of fan
      fanLCD = map(temp, tempMin, tempMax, 0, 100); // speed of fan to display on LCD
      analogWrite(fan, fanSpeed); // spin the fan at the fanSpeed speed
   }
   if(temp  > tempMax) {        // if temp is higher than tempMax
     digitalWrite(led, HIGH);  // turn on led
   } else {                    // else turn of led
     digitalWrite(led, LOW);
   }

   lcd.print("TEMP: ");
   lcd.print(temp);      // display the temperature
   lcd.print("C ");
```

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    lcd.setCursor(0,1);   // move cursor to next line
    lcd.print("FANS: ");
    lcd.print(fanLCD);    // display the fan speed
    lcd.print("%");
    delay(200);
    lcd.clear();
}

int readTemp() {  // get the temperature and convert it to celsius
  temp = analogRead(tempPin);
  return temp * 0.48828125;
}
```