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Q) Display Temperature in Celsius and Fahrenheit on LCD use TMP36 sensor. Also make the LED bar which turn on as temperature increases. Watch recorded video for detail description.

ANSWER:

```
#include <LiquidCrystal.h>
```

```
int pinTemp = A0;
```

```
int yellow = 13;
```

```
int orange = 10;
```

```
int blue = 9;
```

```
int green = 8;
```

```
int red = 7;
```

```
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
```

```
void setup() {
```

```
    lcd.begin(16, 2);
```

```
    pinMode(pinTemp, INPUT);
```

```
    pinMode(yellow, OUTPUT);
```

```
    pinMode(orange, OUTPUT);
```

```
    pinMode(blue, OUTPUT);
```

```
    pinMode(green, OUTPUT);
```

```
    pinMode(red, OUTPUT);
```

```
    analogReference(INTERNAL);
```

```
    delay(1000);
```

```
}
```

```
void loop() {
```

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```
int reading = analogRead(A0);
```

```
float tempC = reading/9.31;
```

```
float tempF = (tempC * 9.0 / 5.0) + 32.0;
```

```
lcd.setCursor(0,0);
```

```
lcd.print(tempC);
```

```
lcd.println("C");
```

```
lcd.setCursor(0,1);
```

```
lcd.print(tempF);
```

```
lcd.println("F");
```

```
delay(100);
```

```
if(tempC == 9 || tempC < 29)
```

```
{
```

```
    digitalWrite(yellow,HIGH);
```

```
    digitalWrite(orange,LOW);
```

```
    digitalWrite(blue,LOW);
```

```
    digitalWrite(green,LOW);
```

```
    digitalWrite(red,LOW);
```

```
}
```

```
else if (tempC == 29 || tempC < 49)
```

```
{
```

```
    digitalWrite(yellow,HIGH);
```

```
    digitalWrite(orange,HIGH);
```

```
    digitalWrite(blue,LOW);
```

```
    digitalWrite(green,LOW);
```

```
    digitalWrite(red,LOW);
```

```
}
```

```
else if (tempC == 49 || tempC < 69)
```

```
{
```

```
    digitalWrite(yellow,HIGH);
```

```
    digitalWrite(orange,HIGH);
```

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```
    digitalWrite(blue,HIGH);

    digitalWrite(green,LOW);

    digitalWrite(red,LOW);

}

else if (tempC == 69 || tempC < 89)
{
    digitalWrite(yellow,HIGH);

    digitalWrite(orange,HIGH);

    digitalWrite(blue,HIGH);

    digitalWrite(green,HIGH);

    digitalWrite(red,LOW);

}

else if (tempC == 89 || tempC < 109)
{
    digitalWrite(yellow,HIGH);

    digitalWrite(orange,HIGH);

    digitalWrite(blue,HIGH);

    digitalWrite(green,HIGH);

    digitalWrite(red,HIGH);

}

}
```

Q1) What is the range that lm35 can read temperature between?

**ANSWER:**

LM35 can read Temperature between -55°C to 150°C.

Q2) Is LM35 digital or analog sensor?

**ANSWER:**

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LM35 is an Analog sensor.

Q3) What is meant by ADC?

ANSWER:

ADC means ANALOG TO DIGITAL CONVERTER. This device can take analog signals like electric signals and digitize them into binary format.