NAME: Ali Salman Hassan.
S-ID: 63758.
C-ID: 105139.

Q) You have to design a circuit which shows distance in meter, cm and millimeter. It also shows the temperature in Kelvin, Fahrenheit and Celsius on 16x2 LCD. IR sensor will also be attached with arduino to receive the IR remote signal. Now you have to perform these functions on these buttons of remote.

By pressing 1 LCD show distance in centimeter.

By pressing 2 LCD show distance in meter.

By pressing 3 LCD show distance in millimeter.

By pressing 4 LCD show temperature in Kelvin.

By pressing 5 LCD show temperature in Fahrenheit.

By pressing 6 LCD show temperature in Celsius.

By pressing power button of remote LCD will show your name and SID.

Note: Submit code and one screen shot of your circuit. Also submit the simulation video. From circuit wiring to code efficiency everything will be checked.

CODE:

```
#include <IRremote.h>

#include <LiquidCrystal.h>


const int RECV_PIN = 6;


const int trigPin = 9;

const int echoPin = 8;
```

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```
int pinTemp = A0;


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


//Button 1
#define code1 2295
//Button 2
#define code2 34935
//Button 3
#define code3 18615
//Button 4
#define code4 10455
//Button 5
#define code5 43095
//Button 6
#define code6 26775
//Button Power
#define code7 255


IRrecv irrecv(RECV_PIN);
decode_results results;


void setup(){


  lcd.begin(16,2);


  irrecv.enableIRIn();
```

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```
  pinMode(trigPin,OUTPUT);
  pinMode(echoPin,INPUT);


  pinMode(pinTemp,INPUT);


  analogReference(INTERNAL);


  delay(1000);


}


float microsecondsToCentimeter(float microseconds){


  return microseconds / 29 / 2 * 2; //multiplying by 2 at the end because of
"irrecv.enableIRIn();" command the value is getting half by itself


}


float microsecondsToMeter(float microseconds){


  return microseconds / 29 / 2 * 0.01 * 2; //multiplying by 2 at the end because of
"irrecv.enableIRIn();" command the value is getting half by itself


}


float microsecondsToMillimeter(float microseconds){


  return microseconds / 29 / 2 * 10 * 2; //multiplying by 2 at the end because of
"irrecv.enableIRIn();" command the value is getting half by itself
```

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```
}

void loop(){

  float duration, cm, meter, millimeter;
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  cm = microsecondsToCentimeter(duration);
  meter = microsecondsToMeter(duration);
  millimeter = microsecondsToMillimeter(duration);

  int reading = analogRead(A0);
  float tempC = reading/9.31;
  float tempF = (tempC * 9.0 / 5.0) + 32.0;
  float tempK = tempC + 273.15;

  if (irrecv.decode(&results)){

    unsigned int value = results.value;

    switch(value){

      case code1: //For Distance In Centimeter
```

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```
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print(cm);
    lcd.print("CM");
    break;

    case code2: //For Distance In Meter
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print(meter);
    lcd.print("M");
    break;

    case code3: //For Distance In Millimeter
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print(millimeter);
    lcd.print("MM");
    break;

    case code4: //For Temperature In Kelvin
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print(tempK);
    lcd.print("K");
    break;

    case code5: //For Temperature In Fahrenheit
```

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```
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print(tempF);
    lcd.print("F");
    break;

    case code6: //For Temperature In Celsius
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print(tempC);
    lcd.print("C");
    break;

    case code7: //For Power Button
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("Ali Salman");
    lcd.setCursor(0,1);
    lcd.print("63758");
    break;

  }

  delay(500);
  irrecv.resume();

}
```

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}