

# Réaliser un thermomètre (tmp 36) avec affichage

## Le code

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

*Décl des pins const int sensorPin = A0; const int switchPin = 13 ; int previousTmpSensorVal = 0 ; float voltage = 0.0; float temperatureC = 0.0; int switchState = 0 ; Constantes du LCD*

```
const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);
```

```
void setup() {
```

```
pinMode(13, INPUT);
lcd.begin(16,2);
lcd.print("Affichage");
lcd.setCursor(0,1);
lcd.print("Temperature");
delay(1000);
```

*Reinitialisation LCD lcd.clear(); } void loop() { Lecture de la valeur du capteur*

```
int tmpSensorVal = analogRead(sensorPin);
```

*Lecture de l'interrupteur switchState = digitalRead(switchPin); lcd.setCursor(15,1); lcd.print(switchState); Valeurs Fixes du LCD*

```
lcd.setCursor(8,0);
lcd.print("V:");
lcd.setCursor(0,1);
lcd.print("Temp.");
lcd.setCursor(12,1);
lcd.print("C");
```

```
// Si changement capteur, on (re)calcule la temperature
if (tmpSensorVal != previousTmpSensorVal ) {
// Calcul du volatge et conversion en degré Celsius
voltage = tmpSensorVal * 5.0;
voltage /= 1024.0;
temperatureC = (voltage - 0.5) * 100 ;
previousTmpSensorVal = tmpSensorVal ;
}
// Affichage sur demande (appui switch)
if (switchState == 1) {
// Affichage LCD
```

```
    lcd.display();  
    lcd.setCursor(0,0);  
    lcd.print(tmpSensorVal);  
    lcd.setCursor(10,0);  
    lcd.print(voltage);  
    lcd.setCursor(7,1);  
    lcd.print(temperatureC);  
    delay(10000);  
} else { // On éteint le LCD  
    lcd.noDisplay();  
}
```

```
delay(500); }
```

## Le schéma

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