

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 voltage 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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