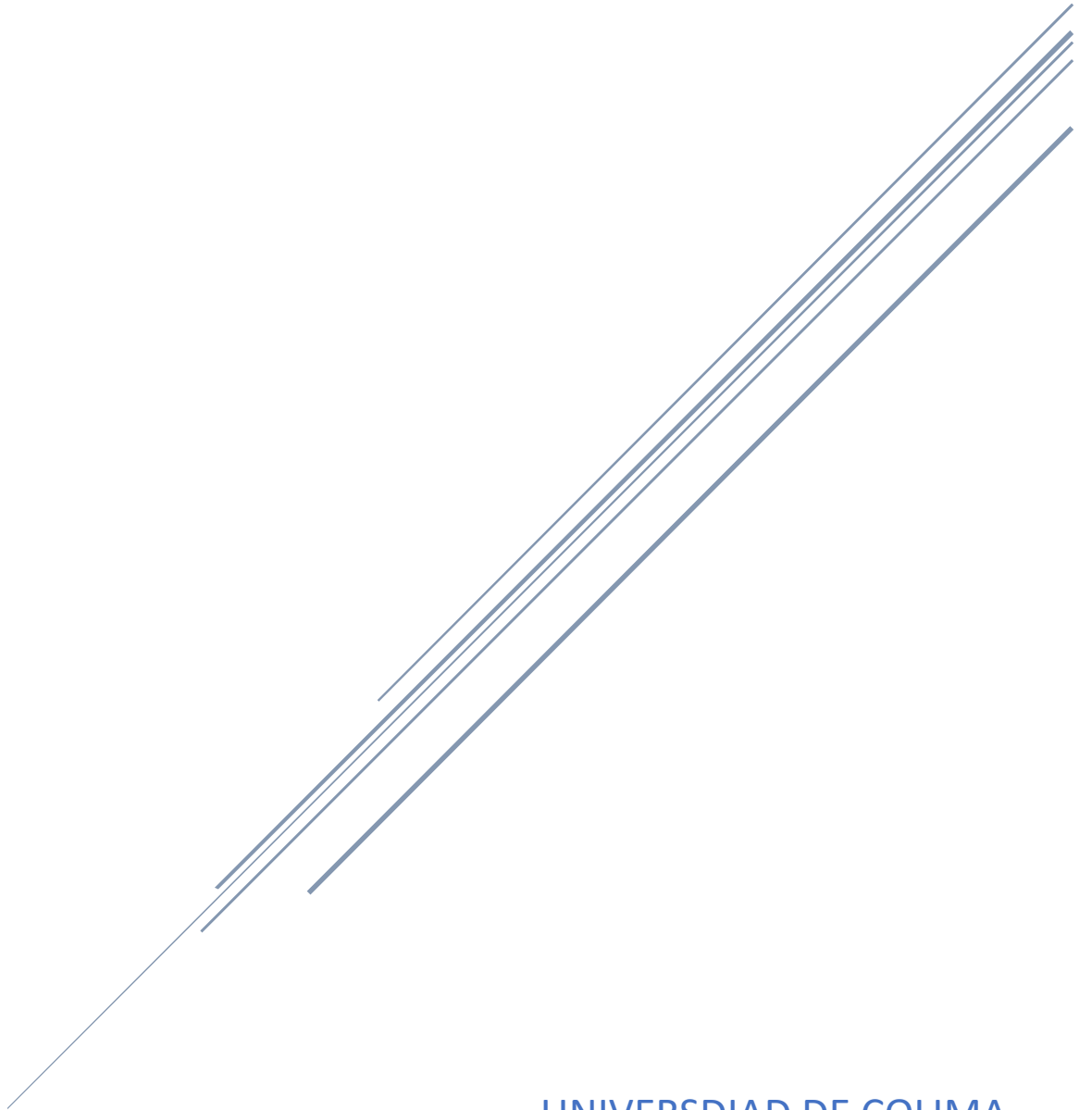


# REPORTE

Programas básicos



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## Programa1:

```
int numero = 0;
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  Serial.print("Ingrese un valor n mero entero: ");
}
```

```
void loop() {
  // put your main code here, to run repeatedly:
  if(Serial.available() ){
    char n = Serial.read();
    numero = String(n).toInt();

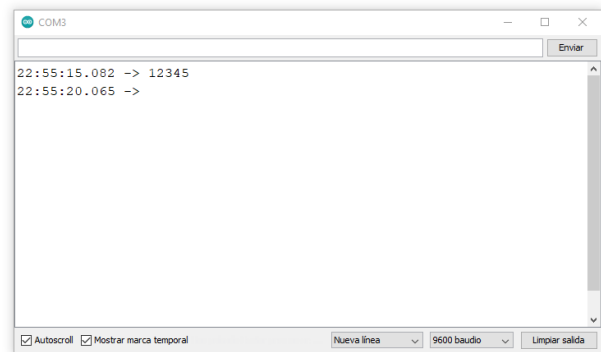
    for(int i = 1; i <= numero; i++){
      Serial.print(i);
      delay(1000);
    }
    Serial.println();
  }
}
```

Programa1 Arduino 1.8.20 Hourly Build 2021/12/20 07:33  
Archivo Editar Programa Herramientas Ayuda

```
Programa1
int numero = 0;
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  Serial.print("Ingrese un valor n mero entero: ");
}

void loop() {
  // put your main code here, to run repeatedly:
  if(Serial.available() ){
    char n = Serial.read();
    numero = String(n).toInt();

    for(int i = 1; i <= numero; i++){
      Serial.print(i);
      delay(1000);
    }
    Serial.println();
  }
}
```



## Programa2:

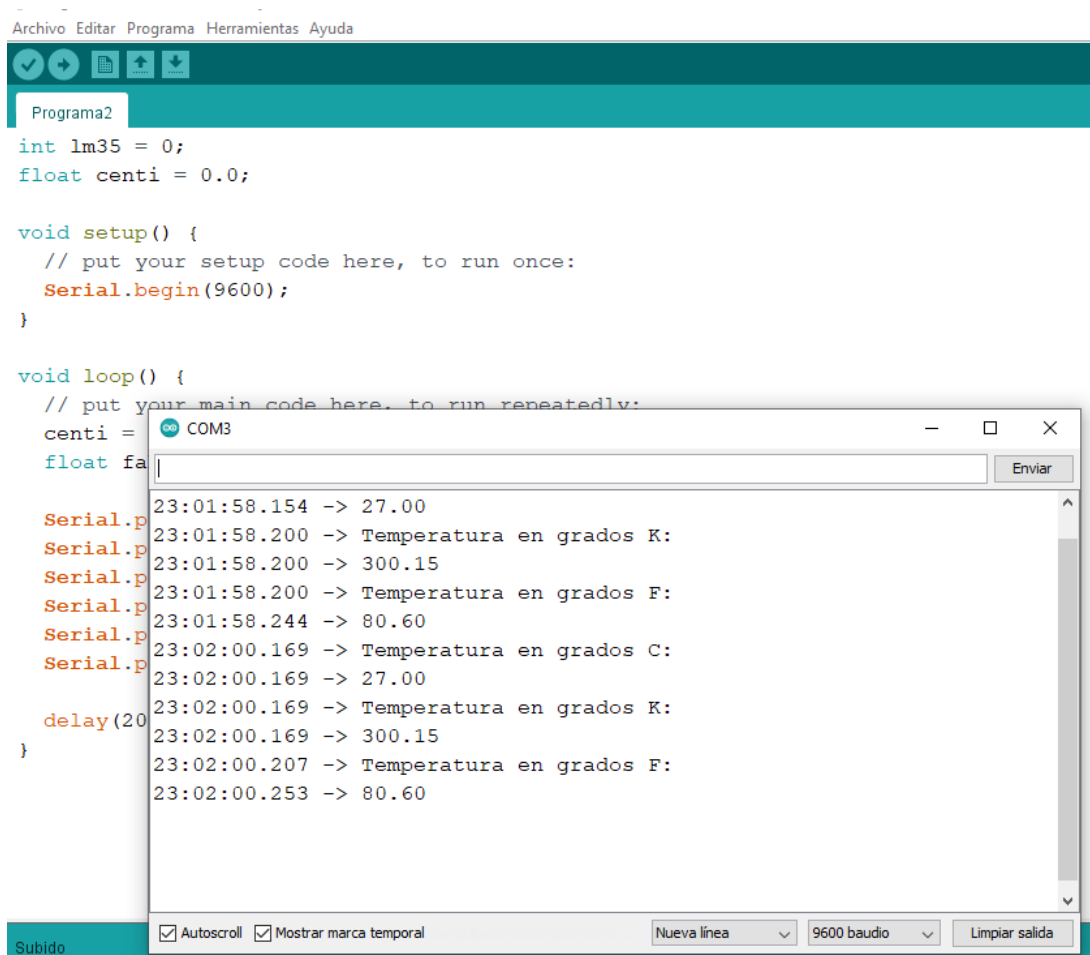
```
int lm35 = 0;
float centi = 0.0;
```

```
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
}
```

```
void loop() {
  // put your main code here, to run repeatedly:
  centi = (( lm35 * (500.0 / 1023.0)/2));
  float fahrenheit = (centi * 9/5) + 32;
```

```
  Serial.println("Temperatura en grados C: ");
  Serial.println(centi);
  Serial.println("Temperatura en grados K: ");
  Serial.println(centi + 273.15 );
  Serial.println("Temperatura en grados F: ");
  Serial.println(fahrenheit);
```

```
  delay(2000);
}
```



The screenshot shows the Arduino IDE interface. The top menu bar includes 'Archivo', 'Editar', 'Programa', 'Herramientas', and 'Ayuda'. Below the menu is a toolbar with icons for saving, running, and other functions. The main editor window displays the code for 'Programa2'. The code defines two variables, 'lm35' and 'centi', and implements 'setup()' and 'loop()' functions. The 'loop()' function calculates the temperature in Celsius, Kelvin, and Fahrenheit, and prints the results to the serial monitor. The serial monitor window is open, showing the output of the program. The output consists of two sets of three lines, each corresponding to a temperature reading in Celsius, Kelvin, and Fahrenheit. The first set of readings is at 23:01:58.154, and the second set is at 23:02:00.169. The output is as follows:

```
23:01:58.154 -> 27.00
23:01:58.200 -> Temperatura en grados K:
23:01:58.200 -> 300.15
23:01:58.200 -> Temperatura en grados F:
23:01:58.244 -> 80.60
23:02:00.169 -> Temperatura en grados C:
23:02:00.169 -> 27.00
23:02:00.169 -> Temperatura en grados K:
23:02:00.169 -> 300.15
23:02:00.207 -> Temperatura en grados F:
23:02:00.253 -> 80.60
```

The bottom status bar of the IDE shows 'Subido' and several checkboxes: 'Autoscroll' (checked), 'Mostrar marca temporal' (checked), 'Nueva línea' (dropdown), '9600 baudio' (dropdown), and 'Limpiar salida' (button).

## Programa3:

### Archivo .ino

```
int lm35 = 0;
float temperatura = 0.0;

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
  lm35 = analogRead(A0);
  temperatura = (( lm35 * (500.0 / 1023.0)));
  Serial.println(temperatura);

  delay(500);
}
```

### Código js:

```
const { SerialPort, ReadlineParser } = require('serialport');

const port = new SerialPort({
  path: '/dev/cu.usbmodem145101',
  baudRate: 9600,
});

let cont = 1;
let array = new Array();

const parser = new ReadlineParser({ delimiter: '\r\n' });
port.pipe(parser);
parser.on('data', function (temp) {
  array.push({ "valor": temp });
  if (cont % 10 == 0) {
    let print = JSON.stringify({ array });
    print = JSON.parse(print);
    console.log(print);

    array.forEach(temp => {
      console.log(temp.valor);
    });

    array = [];
  }
  cont++;
})
```

## Programa4:

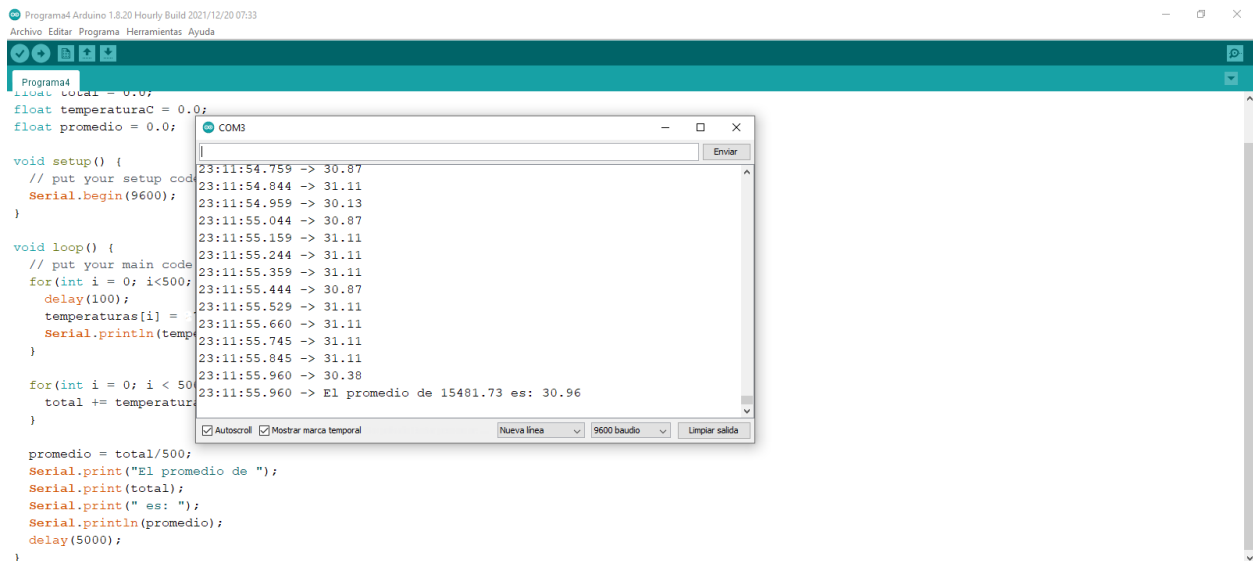
```
int Im35 = 0;
float temperaturas[500];
float total = 0.0;
float temperaturaC = 0.0;
float promedio = 0.0;

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
  for(int i = 0; i<500; i++) {
    delay(100);
    temperaturas[i] = (( analogRead(0) * (500.0 / 1023.0)/2) );
    Serial.println(temperaturas[i]);
  }

  for(int i = 0; i < 500; i++) {
    total += temperaturas[i];
  }

  promedio = total/500;
  Serial.print("El promedio de ");
  Serial.print(total);
  Serial.print(" es: ");
  Serial.println(promedio);
  delay(5000);
}
```



The screenshot shows the Arduino IDE interface with the code for Programa4 loaded. The Serial Monitor window is open, displaying the output of the program. The output shows a series of temperature readings (e.g., 30.87, 31.11, 30.13, etc.) and the final average calculation: "El promedio de 15481.73 es: 30.96".

```
Programa4
float total = 0.0;
float temperaturaC = 0.0;
float promedio = 0.0;

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
  for(int i = 0; i<500; i++) {
    delay(100);
    temperaturas[i] = (( analogRead(0) * (500.0 / 1023.0)/2) );
    Serial.println(temperaturas[i]);
  }

  for(int i = 0; i < 500; i++) {
    total += temperaturas[i];
  }

  promedio = total/500;
  Serial.print("El promedio de ");
  Serial.print(total);
  Serial.print(" es: ");
  Serial.println(promedio);
  delay(5000);
}
```

Serial Monitor Output:

```
23:11:54.759 -> 30.87
23:11:54.844 -> 31.11
23:11:54.959 -> 30.13
23:11:55.044 -> 30.87
23:11:55.159 -> 31.11
23:11:55.244 -> 31.11
23:11:55.359 -> 31.11
23:11:55.444 -> 30.87
23:11:55.529 -> 31.11
23:11:55.660 -> 31.11
23:11:55.745 -> 31.11
23:11:55.845 -> 31.11
23:11:55.960 -> 30.38
23:11:55.960 -> El promedio de 15481.73 es: 30.96
```

## Programa5:

String valor;

```
void setup() {  
  // put your setup code here, to run once:  
  pinMode(LED_BUILTIN, OUTPUT);  
  Serial.begin(9600);  
  delay(1000);  
  digitalWrite(LED_BUILTIN, HIGH);  
}  
  
void loop() {  
  // put your main code here, to run repeatedly:  
  if(Serial.available()){  
    valor = Serial.readString();  
  
    if(valor=="prender\n"){  
      Serial.println("¡Led encendido!");  
      digitalWrite(LED_BUILTIN, LOW);  
    }  
    if(valor=="apagar\n"){  
      Serial.println("¡Led apagado!");  
      digitalWrite(LED_BUILTIN, HIGH);  
    }  
  }  
}
```

