

Prácticas de arduino y visual

Cervantes Martínez Erick Daniel

Morales Pérez Marcos Gabriel

Suárez García Arbi Rafael

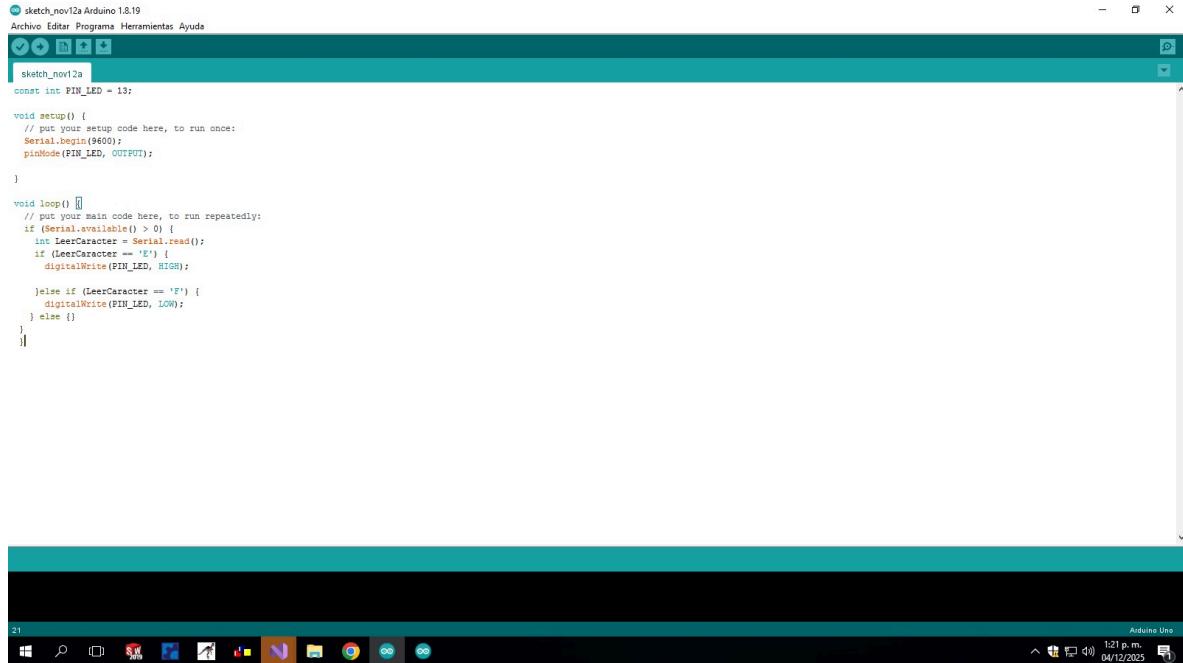
Aldama Longinos Karol Ociel

Alonso Vega Dominic Caleb

García Hernandez Víctor Yahir

Frausto Paniagua José Roberto

Practica 1



```
sketch_nov12a Arduino 1.8.19
Archivo Editar Programas Herramientas Ayuda
sketch_nov12a
const int PIN_LED = 13;

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

void loop() {
  // put your main code here, to run repeatedly:
  if (Serial.available() > 0) {
    int LeerCaracter = Serial.read();
    if (LeerCaracter == 'E') {
      digitalWrite(PIN_LED, HIGH);
    } else if (LeerCaracter == 'F') {
      digitalWrite(PIN_LED, LOW);
    } else {}
  }
}
```

The screenshot shows the Arduino VS practice 1 interface. The menu bar includes Archivo, Editar, Ver, Git, Proyecto, Compilar, Depurar, Prueba, Analizar, Herramientas, Extensiones, Ventana, Ayuda, and Buscar (Ctrl+Q). The toolbar has icons for file operations like New, Open, Save, and Build. The main window displays the code for `Form1.cs` under the tab `Arduino VS practice 1`. The code uses System.IO.Ports and System.Runtime.InteropServices.Marshal classes to interact with an Arduino connected via serial port. It initializes a serial port named "Arduino" at COM5, 9600 bps. The `button1_Click` event sends an "F" command to turn off an LED, and the `button2_Click` event sends an "E" command to turn it on. The code editor shows syntax highlighting for C# and the Arduino library. Below the code editor is a status bar with "Linea 30" and "Carácter: 2". The taskbar at the bottom shows the Windows Start button, File Explorer, Task View, and other pinned applications.

```
1 using System.IO.Ports;
2 using System.Runtime.InteropServices.Marshal;
3
4 namespace Arduino_VS_practica_1
5 {
6     public partial class Form1 : Form
7     {
8         System.IO.Ports.SerialPort Arduino;
9         //SerialPort serialPort;
10        public Form1()
11        {
12            InitializeComponent();
13
14            Arduino = new System.IO.Ports.SerialPort();
15            Arduino = new SerialPort("COM5", 9600); // Asegure de que el puerto COM sea correcto
16
17            Arduino.Open();
18
19        }
20
21        private void button1_Click(object sender, EventArgs e)
22        {
23            Arduino.Write("F"); // Enviar señal para apagar el LED
24        }
25
26        private void button2_Click(object sender, EventArgs e)
27        {
28            Arduino.Write("E"); // Enviar señal para encender el LED
29        }
30    }
31}
```

Practica 2

The screenshot shows the Arduino Uno interface. The menu bar includes Archivo, Editor, Programa, Herramientas, and Ayuda. The toolbar has icons for sketch, upload, and preferences. The main window displays the sketch code for `sketch_nov13a`. The code initializes pin 6 for the DHT11 sensor and reads temperature and humidity values every 2 seconds. It prints the results to the serial monitor. The code editor shows syntax highlighting for C++ and the Arduino library. Below the code editor is a status bar with "1:38 p.m." and "04/12/2025". The taskbar at the bottom shows the Windows Start button, File Explorer, Task View, and other pinned applications.

```
#include<DHT.h>
#define DHTPIN 6 // Pin donde esta conectado al DHT11
#define DHTTYPE DHT11 // Tipo de sensor DHT
DHT dht(DHTPIN, DHTTYPE);
void setup(){
  Serial.begin(9600);
  dht.begin();
}
void loop(){
  delay (2000); // Espera 2 segundos entre lecturas
  float h = dht.readHumidity();
  float t = dht.readTemperature();
  if (isnan(h) || isnan (t)){
    Serial.println("Error al leer del sensor DHT11");
    return;
  }
  Serial.print(t);
  Serial.print(",");
  Serial.print(h);
}
```

Arduino VS práctica 2

```

Form1.cs  X  Form1.cs [Diseño]
Arduino VS práctica 2  -> Arduino_VS_práctica_2/Form1  -> Puerto_DataReceived(object sender, SerialDataReceivedEventArgs e)
Código de herramientas  Orígenes de datos
1  using System;
2  using System.IO.Ports;
3  using System.Reflection.Emit;
4  using System.Windows.Forms;
5  namespace Arduino_VS_práctica_2
6  {
7      4 referencias
8      public partial class Form1 : Form
9      {
10         SerialPort puerto = new SerialPort();
11         bool conectado = false;
12         1 referencia
13         public Form1()
14         {
15             InitializeComponent();
16             puerto.BaudRate = 9600;
17             puerto.PortName = "COM6";
18             puerto.DataReceived += Puerto_DataReceived;
19         }
20
21         1 referencia
22         private void Puerto_DataReceived(object sender, SerialDataReceivedEventArgs e)
23         {
24             try
25             {
26                 string data = puerto.ReadLine().Trim();
27                 string[] partes = data.Split(',');
28                 if (partes.Length == 2)
29                 {
30                     string temp = partes[0];
31                     string hum = partes[1];
32                     this.Invoke(new Action(() =>
33                     {
34                         TemperaturaLabel.Text = "Temperatura: " + temp + "°C";
35                         HumedadLabel.Text = "Humedad: " + hum + "%";
36                         listBox1.Items.Add("Temp: " + temp + "°C , Hum: " + hum + "%");
37                     }));
38                 }
39             }
40             catch (Exception ex)
41             {
42                 private void button1_Click(object sender, EventArgs e)
43                 {
44                     if (!conectado)
45                     {
46                         try
47                         {
48                             puerto.Open();
49                             conectado = true;
50                             botonConectar.Text = "Desconectar";
51                         }
52                         catch
53                         {
54                             MessageBox.Show("No se pudo abrir el puerto COM6");
55                         }
56                     }
57                     else
58                     {
59                         if (puerto.IsOpen)
60                             puerto.Close();
61
62                         conectado = false;
63                         botonConectar.Text = "Conectar";
64
65                         TemperaturaLabel.Text = "Temperatura: ";
66                         HumedadLabel.Text = "Humedad: ";
67                     }
68                 }
69             }
70         }
71     }
72 }

```

No se encontraron problemas.

Explorador de soluciones

Solución "Arduino VS práctica 2" (1 de 1 proyecto)

- Arduino VS práctica 2
 - Dependencias
 - Properties
 - Form1.cs
 - Program.cs

Activar Windows

Explorador de soluciones Cambiar vista Windows.

De los 5 muertos por... 10:17 a. m. 08/12/2025

Lista Buscar Agregar al control de código fuente Seleccionar repositorio

Archivo Editar Ver Git Proyecto Compilar Depurar Prueba Analizar Herramientas Extensiones Ventana Ayuda GitHub Copilot

Arduino VS práctica 2

Form1.cs X Form1.cs [Diseño]
Arduino VS práctica 2 -> Arduino_VS_práctica_2/Form1 -> Puerto_DataReceived(object sender, SerialDataReceivedEventArgs e)
Código de herramientas Orígenes de datos
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
90 % No se encontraron problemas. | Línea: 34 Carácter: 1 SPC CRLF

Explorador de soluciones

Solución "Arduino VS práctica 2" (1 de 1 proyecto)

- Arduino VS práctica 2
 - Dependencias
 - Properties
 - Form1.cs
 - Program.cs

Activar Windows

Explorador de soluciones Cambiar vista Windows.

MXN/USD -0.24% 10:23 a. m. 08/12/2025

Lista Buscar Agregar al control de código fuente Seleccionar repositorio

Archivo Editar Ver Git Proyecto Compilar Depurar Prueba Analizar Herramientas Extensiones Ventana Ayuda GitHub Copilot

Arduino VS práctica 2

Practica 3

sketch_nov20a Arduino 1.8.19

Archivo Editar Programa Herramientas Ayuda

sketch_nov20a

```

const int rainSensorPin = 2;
const int buzzerPin = 13;
const int ledPin = 4;

void setup(){
    pinMode(rainSensorPin, INPUT);
    pinMode(buzzerPin, OUTPUT);
    pinMode(ledPin, OUTPUT);
    Serial.begin(9600);
}

void loop(){
    int rainSensorValue = digitalRead(rainSensorPin);

    if (rainSensorValue == LOW){ // LOW indica que se detecta agua
        digitalWrite(buzzerPin, HIGH);
        digitalWrite(ledPin, HIGH);
    } else{
        digitalWrite(buzzerPin, LOW);
        digitalWrite(ledPin, LOW);
    }

    Serial.println(rainSensorValue);
    delay(1000);
}

```

Arduino Uno

1:39 p. m. 04/12/2025

Archivo Editar Ver Git Proyecto Compilar Depurar Prueba Analizar Herramientas Extensiones Ventana Ayuda Buscar Arduino VS practica 3

Explorador de soluciones

Form1.cs Form1.cs [Diseño]

Archivos varios

```

1  using System;
2  using System.IO.Ports;
3  using System.Media;
4  using System.Windows.Forms;
5
6  namespace Arduino_VS_practica_3
7  {
8      public partial class Form1 : Form
9      {
10         private SerialPort serialPort;
11         private bool isBlinking;
12         private SoundPlayer soundPlayer;
13
14         public Form1()
15         {
16             InitializeComponent();
17
18             serialPort = new SerialPort("COM6", 9600);
19
20             // Evento para leer datos del sensor
21             serialPort.DataReceived += new SerialDataReceivedEventHandler(DataReceivedHandler);
22
23             // Evento del botón comenzar
24             botonComenzar.Click += botonComenzar_Click;
25
26             // Timer del parpadeo
27             timer1.Interval = 500;
28             timer1.Tick += timer1_Tick;
29
30             // Archivo de sonido CORRECTO (modifica si tu ruta es distinta)
31             soundPlayer = new SoundPlayer(@"C:\Users\gogca\Downloads\liquid_water\liquid_water.wav");
32
33
34             // Cerrar puerto al cerrar la app
35             OnFormClosingEventArgs e)
36             {
37                 serialPort.Close();
38             }
39
40             protected override void OnFormClosing(FormClosingEventArgs e)
41             {
42                 serialPort.Close();
43             }
44
45         }
46
47         private void DataReceivedHandler(object sender, SerialDataReceivedEventArgs e)
48         {
49             string data = serialPort.ReadExisting();
50
51             if (data != "")
52             {
53                 if (isBlinking)
54                 {
55                     if (data == "1")
56                     {
57                         soundPlayer.Play();
58                     }
59                 }
60
61                 if (data == "0")
62                 {
63                     isBlinking = !isBlinking;
64                 }
65             }
66
67             if (isBlinking)
68             {
69                 if (soundPlayer != null)
70                 {
71                     soundPlayer.Stop();
72                 }
73             }
74
75             if (isBlinking)
76             {
77                 if (soundPlayer != null)
78                 {
79                     soundPlayer.Play();
80                 }
81             }
82
83             if (isBlinking)
84             {
85                 if (soundPlayer != null)
86                 {
87                     soundPlayer.Stop();
88                 }
89             }
90
91             if (isBlinking)
92             {
93                 if (soundPlayer != null)
94                 {
95                     soundPlayer.Play();
96                 }
97             }
98
99             if (isBlinking)
100            {
101                if (soundPlayer != null)
102                {
103                    soundPlayer.Stop();
104                }
105            }
106
107            if (isBlinking)
108            {
109                if (soundPlayer != null)
110                {
111                    soundPlayer.Play();
112                }
113            }
114
115            if (isBlinking)
116            {
117                if (soundPlayer != null)
118                {
119                    soundPlayer.Stop();
120                }
121            }
122
123            if (isBlinking)
124            {
125                if (soundPlayer != null)
126                {
127                    soundPlayer.Play();
128                }
129            }
130
131            if (isBlinking)
132            {
133                if (soundPlayer != null)
134                {
135                    soundPlayer.Stop();
136                }
137            }
138
139            if (isBlinking)
140            {
141                if (soundPlayer != null)
142                {
143                    soundPlayer.Play();
144                }
145            }
146
147            if (isBlinking)
148            {
149                if (soundPlayer != null)
150                {
151                    soundPlayer.Stop();
152                }
153            }
154
155            if (isBlinking)
156            {
157                if (soundPlayer != null)
158                {
159                    soundPlayer.Play();
160                }
161            }
162
163            if (isBlinking)
164            {
165                if (soundPlayer != null)
166                {
167                    soundPlayer.Stop();
168                }
169            }
170
171            if (isBlinking)
172            {
173                if (soundPlayer != null)
174                {
175                    soundPlayer.Play();
176                }
177            }
178
179            if (isBlinking)
180            {
181                if (soundPlayer != null)
182                {
183                    soundPlayer.Stop();
184                }
185            }
186
187            if (isBlinking)
188            {
189                if (soundPlayer != null)
190                {
191                    soundPlayer.Play();
192                }
193            }
194
195            if (isBlinking)
196            {
197                if (soundPlayer != null)
198                {
199                    soundPlayer.Stop();
200                }
201            }
202
203            if (isBlinking)
204            {
205                if (soundPlayer != null)
206                {
207                    soundPlayer.Play();
208                }
209            }
210
211            if (isBlinking)
212            {
213                if (soundPlayer != null)
214                {
215                    soundPlayer.Stop();
216                }
217            }
218
219            if (isBlinking)
220            {
221                if (soundPlayer != null)
222                {
223                    soundPlayer.Play();
224                }
225            }
226
227            if (isBlinking)
228            {
229                if (soundPlayer != null)
230                {
231                    soundPlayer.Stop();
232                }
233            }
234
235            if (isBlinking)
236            {
237                if (soundPlayer != null)
238                {
239                    soundPlayer.Play();
240                }
241            }
242
243            if (isBlinking)
244            {
245                if (soundPlayer != null)
246                {
247                    soundPlayer.Stop();
248                }
249            }
250
251            if (isBlinking)
252            {
253                if (soundPlayer != null)
254                {
255                    soundPlayer.Play();
256                }
257            }
258
259            if (isBlinking)
260            {
261                if (soundPlayer != null)
262                {
263                    soundPlayer.Stop();
264                }
265            }
266
267            if (isBlinking)
268            {
269                if (soundPlayer != null)
270                {
271                    soundPlayer.Play();
272                }
273            }
274
275            if (isBlinking)
276            {
277                if (soundPlayer != null)
278                {
279                    soundPlayer.Stop();
280                }
281            }
282
283            if (isBlinking)
284            {
285                if (soundPlayer != null)
286                {
287                    soundPlayer.Play();
288                }
289            }
290
291            if (isBlinking)
292            {
293                if (soundPlayer != null)
294                {
295                    soundPlayer.Stop();
296                }
297            }
298
299            if (isBlinking)
300            {
301                if (soundPlayer != null)
302                {
303                    soundPlayer.Play();
304                }
305            }
306
307            if (isBlinking)
308            {
309                if (soundPlayer != null)
310                {
311                    soundPlayer.Stop();
312                }
313            }
314
315            if (isBlinking)
316            {
317                if (soundPlayer != null)
318                {
319                    soundPlayer.Play();
320                }
321            }
322
323            if (isBlinking)
324            {
325                if (soundPlayer != null)
326                {
327                    soundPlayer.Stop();
328                }
329            }
330
331            if (isBlinking)
332            {
333                if (soundPlayer != null)
334                {
335                    soundPlayer.Play();
336                }
337            }
338
339            if (isBlinking)
340            {
341                if (soundPlayer != null)
342                {
343                    soundPlayer.Stop();
344                }
345            }
346
347            if (isBlinking)
348            {
349                if (soundPlayer != null)
350                {
351                    soundPlayer.Play();
352                }
353            }
354
355            if (isBlinking)
356            {
357                if (soundPlayer != null)
358                {
359                    soundPlayer.Stop();
360                }
361            }
362
363            if (isBlinking)
364            {
365                if (soundPlayer != null)
366                {
367                    soundPlayer.Play();
368                }
369            }
370
371            if (isBlinking)
372            {
373                if (soundPlayer != null)
374                {
375                    soundPlayer.Stop();
376                }
377            }
378
379            if (isBlinking)
380            {
381                if (soundPlayer != null)
382                {
383                    soundPlayer.Play();
384                }
385            }
386
387            if (isBlinking)
388            {
389                if (soundPlayer != null)
390                {
391                    soundPlayer.Stop();
392                }
393            }
394
395            if (isBlinking)
396            {
397                if (soundPlayer != null)
398                {
399                    soundPlayer.Play();
400                }
401            }
402
403            if (isBlinking)
404            {
405                if (soundPlayer != null)
406                {
407                    soundPlayer.Stop();
408                }
409            }
410
411            if (isBlinking)
412            {
413                if (soundPlayer != null)
414                {
415                    soundPlayer.Play();
416                }
417            }
418
419            if (isBlinking)
420            {
421                if (soundPlayer != null)
422                {
423                    soundPlayer.Stop();
424                }
425            }
426
427            if (isBlinking)
428            {
429                if (soundPlayer != null)
430                {
431                    soundPlayer.Play();
432                }
433            }
434
435            if (isBlinking)
436            {
437                if (soundPlayer != null)
438                {
439                    soundPlayer.Stop();
440                }
441            }
442
443            if (isBlinking)
444            {
445                if (soundPlayer != null)
446                {
447                    soundPlayer.Play();
448                }
449            }
450
451            if (isBlinking)
452            {
453                if (soundPlayer != null)
454                {
455                    soundPlayer.Stop();
456                }
457            }
458
459            if (isBlinking)
460            {
461                if (soundPlayer != null)
462                {
463                    soundPlayer.Play();
464                }
465            }
466
467            if (isBlinking)
468            {
469                if (soundPlayer != null)
470                {
471                    soundPlayer.Stop();
472                }
473            }
474
475            if (isBlinking)
476            {
477                if (soundPlayer != null)
478                {
479                    soundPlayer.Play();
480                }
481            }
482
483            if (isBlinking)
484            {
485                if (soundPlayer != null)
486                {
487                    soundPlayer.Stop();
488                }
489            }
490
491            if (isBlinking)
492            {
493                if (soundPlayer != null)
494                {
495                    soundPlayer.Play();
496                }
497            }
498
499            if (isBlinking)
500            {
501                if (soundPlayer != null)
502                {
503                    soundPlayer.Stop();
504                }
505            }
506
507            if (isBlinking)
508            {
509                if (soundPlayer != null)
510                {
511                    soundPlayer.Play();
512                }
513            }
514
515            if (isBlinking)
516            {
517                if (soundPlayer != null)
518                {
519                    soundPlayer.Stop();
520                }
521            }
522
523            if (isBlinking)
524            {
525                if (soundPlayer != null)
526                {
527                    soundPlayer.Play();
528                }
529            }
530
531            if (isBlinking)
532            {
533                if (soundPlayer != null)
534                {
535                    soundPlayer.Stop();
536                }
537            }
538
539            if (isBlinking)
540            {
541                if (soundPlayer != null)
542                {
543                    soundPlayer.Play();
544                }
545            }
546
547            if (isBlinking)
548            {
549                if (soundPlayer != null)
550                {
551                    soundPlayer.Stop();
552                }
553            }
554
555            if (isBlinking)
556            {
557                if (soundPlayer != null)
558                {
559                    soundPlayer.Play();
560                }
561            }
562
563            if (isBlinking)
564            {
565                if (soundPlayer != null)
566                {
567                    soundPlayer.Stop();
568                }
569            }
570
571            if (isBlinking)
572            {
573                if (soundPlayer != null)
574                {
575                    soundPlayer.Play();
576                }
577            }
578
579            if (isBlinking)
580            {
581                if (soundPlayer != null)
582                {
583                    soundPlayer.Stop();
584                }
585            }
586
587            if (isBlinking)
588            {
589                if (soundPlayer != null)
590                {
591                    soundPlayer.Play();
592                }
593            }
594
595            if (isBlinking)
596            {
597                if (soundPlayer != null)
598                {
599                    soundPlayer.Stop();
600                }
601            }
602
603            if (isBlinking)
604            {
605                if (soundPlayer != null)
606                {
607                    soundPlayer.Play();
608                }
609            }
610
611            if (isBlinking)
612            {
613                if (soundPlayer != null)
614                {
615                    soundPlayer.Stop();
616                }
617            }
618
619            if (isBlinking)
620            {
621                if (soundPlayer != null)
622                {
623                    soundPlayer.Play();
624                }
625            }
626
627            if (isBlinking)
628            {
629                if (soundPlayer != null)
630                {
631                    soundPlayer.Stop();
632                }
633            }
634
635            if (isBlinking)
636            {
637                if (soundPlayer != null)
638                {
639                    soundPlayer.Play();
640                }
641            }
642
643            if (isBlinking)
644            {
645                if (soundPlayer != null)
646                {
647                    soundPlayer.Stop();
648                }
649            }
650
651            if (isBlinking)
652            {
653                if (soundPlayer != null)
654                {
655                    soundPlayer.Play();
656                }
657            }
658
659            if (isBlinking)
660            {
661                if (soundPlayer != null)
662                {
663                    soundPlayer.Stop();
664                }
665            }
666
667            if (isBlinking)
668            {
669                if (soundPlayer != null)
670                {
671                    soundPlayer.Play();
672                }
673            }
674
675            if (isBlinking)
676            {
677                if (soundPlayer != null)
678                {
679                    soundPlayer.Stop();
680                }
681            }
682
683            if (isBlinking)
684            {
685                if (soundPlayer != null)
686                {
687                    soundPlayer.Play();
688                }
689            }
690
691            if (isBlinking)
692            {
693                if (soundPlayer != null)
694                {
695                    soundPlayer.Stop();
696                }
697            }
698
699            if (isBlinking)
700            {
701                if (soundPlayer != null)
702                {
703                    soundPlayer.Play();
704                }
705            }
706
707            if (isBlinking)
708            {
709                if (soundPlayer != null)
710                {
711                    soundPlayer.Stop();
712                }
713            }
714
715            if (isBlinking)
716            {
717                if (soundPlayer != null)
718                {
719                    soundPlayer.Play();
720                }
721            }
722
723            if (isBlinking)
724            {
725                if (soundPlayer != null)
726                {
727                    soundPlayer.Stop();
728                }
729            }
730
731            if (isBlinking)
732            {
733                if (soundPlayer != null)
734                {
735                    soundPlayer.Play();
736                }
737            }
738
739            if (isBlinking)
740            {
741                if (soundPlayer != null)
742                {
743                    soundPlayer.Stop();
744                }
745            }
746
747            if (isBlinking)
748            {
749                if (soundPlayer != null)
750                {
751                    soundPlayer.Play();
752                }
753            }
754
755            if (isBlinking)
756            {
757                if (soundPlayer != null)
758                {
759                    soundPlayer.Stop();
760                }
761            }
762
763            if (isBlinking)
764            {
765                if (soundPlayer != null)
766                {
767                    soundPlayer.Play();
768                }
769            }
770
771            if (isBlinking)
772            {
773                if (soundPlayer != null)
774                {
775                    soundPlayer.Stop();
776                }
777            }
778
779            if (isBlinking)
780            {
781                if (soundPlayer != null)
782                {
783                    soundPlayer.Play();
784                }
785            }
786
787            if (isBlinking)
788            {
789                if (soundPlayer != null)
790                {
791                    soundPlayer.Stop();
792                }
793            }
794
795            if (isBlinking)
796            {
797                if (soundPlayer != null)
798                {
799                    soundPlayer.Play();
800                }
801            }
802
803            if (isBlinking)
804            {
805                if (soundPlayer != null)
806                {
807                    soundPlayer.Stop();
808                }
809            }
810
811            if (isBlinking)
812            {
813                if (soundPlayer != null)
814                {
815                    soundPlayer.Play();
816                }
817            }
818
819            if (isBlinking)
820            {
821                if (soundPlayer != null)
822                {
823                    soundPlayer.Stop();
824                }
825            }
826
827            if (isBlinking)
828            {
829                if (soundPlayer != null)
830                {
831                    soundPlayer.Play();
832                }
833            }
834
835            if (isBlinking)
836            {
837                if (soundPlayer != null)
838                {
839                    soundPlayer.Stop();
840                }
841            }
842
843            if (isBlinking)
844            {
845                if (soundPlayer != null)
846                {
847                    soundPlayer.Play();
848                }
849            }
850
851            if (isBlinking)
852            {
853                if (soundPlayer != null)
854                {
855                    soundPlayer.Stop();
856                }
857            }
858
859            if (isBlinking)
860            {
861                if (soundPlayer != null)
862                {
863                    soundPlayer.Play();
864                }
865            }
866
867            if (isBlinking)
868            {
869                if (soundPlayer != null)
870                {
871                    soundPlayer.Stop();
872                }
873            }
874
875            if (isBlinking)
876            {
877                if (soundPlayer != null)
878                {
879                    soundPlayer.Play();
880                }
881            }
882
883            if (isBlinking)
884            {
885                if (soundPlayer != null)
886                {
887                    soundPlayer.Stop();
888                }
889            }
890
891            if (isBlinking)
892            {
893                if (soundPlayer != null)
894                {
895                    soundPlayer.Play();
896                }
897            }
898
899            if (isBlinking)
900            {
901                if (soundPlayer != null)
902                {
903                    soundPlayer.Stop();
904                }
905            }
906
907            if (isBlinking)
908            {
909                if (soundPlayer != null)
910                {
911                    soundPlayer.Play();
912                }
913            }
914
915            if (isBlinking)
916            {
917                if (soundPlayer != null)
918                {
919                    soundPlayer.Stop();
920                }
921            }
922
923            if (isBlinking)
924            {
925                if (soundPlayer != null)
926                {
927                    soundPlayer.Play();
928                }
929            }
930
931            if (isBlinking)
932            {
933                if (soundPlayer != null)
934                {
935                    soundPlayer.Stop();
936                }
937            }
938
939            if (isBlinking)
940            {
941                if (soundPlayer != null)
942                {
943                    soundPlayer.Play();
944                }
945            }
946
947            if (isBlinking)
948            {
949                if (soundPlayer != null)
950                {
951                    soundPlayer.Stop();
952                }
953            }
954
955            if (isBlinking)
956            {
957                if (soundPlayer != null)
958                {
959                    soundPlayer.Play();
960                }
961            }
962
963            if (isBlinking)
964            {
965                if (soundPlayer != null)
966                {
967                    soundPlayer.Stop();
968                }
969            }
970
971            if (isBlinking)
972            {
973                if (soundPlayer != null)
974                {
975                    soundPlayer.Play();
976                }
977            }
978
979            if (isBlinking)
980            {
981                if (soundPlayer != null)
982                {
983                    soundPlayer.Stop();
984                }
985            }
986
987            if (isBlinking)
988            {
989                if (soundPlayer != null)
990                {
991                    soundPlayer.Play();
992                }
993            }
994
995            if (isBlinking)
996            {
997                if (soundPlayer != null)
998                {
999                    soundPlayer.Stop();
1000                }
1001            }
1002
1003            if (isBlinking)
1004            {
1005                if (soundPlayer != null)
1006                {
1007                    soundPlayer.Play();
1008                }
1009            }
1010
1011            if (isBlinking)
1012            {
1013                if (soundPlayer != null)
1014                {
1015                    soundPlayer.Stop();
1016                }
1017            }
1018
1019            if (isBlinking)
1020            {
1021                if (soundPlayer != null)
1022                {
1023                    soundPlayer.Play();
1024                }
1025            }
1026
1027            if (isBlinking)
1028            {
1029                if (soundPlayer != null)
1030                {
1031                    soundPlayer.Stop();
1032                }
1033            }
1034
1035            if (isBlinking)
1036            {
1037                if (soundPlayer != null)
1038                {
1039                    soundPlayer.Play();
1040                }
1041            }
1042
1043            if (isBlinking)
1044            {
1045                if (soundPlayer != null)
1046                {
1047                    soundPlayer.Stop();
1048                }
1049            }
1050
1051            if (isBlinking)
1052            {
1053                if (soundPlayer != null)
1054                {
1055                    soundPlayer.Play();
1056                }
1057            }
1058
1059            if (isBlinking)
1060            {
1061                if (soundPlayer != null)
1062                {
1063                    soundPlayer.Stop();
1064                }
1065            }
1066
1067            if (isBlinking)
1068            {
1069                if (soundPlayer != null)
1070                {
1071                    soundPlayer.Play();
1072                }
1073            }
1074
1075            if (isBlinking)
1076            {
1077                if (soundPlayer != null)
1078                {
1079                    soundPlayer.Stop();
1080                }
1081            }
1082
1083            if (isBlinking)
1084            {
1085                if (soundPlayer != null)
1086                {
1087                    soundPlayer.Play();
1088                }
1089            }
1090
1091            if (isBlinking)
1092            {
1093                if (soundPlayer != null)
1094                {
1095                    soundPlayer.Stop();
1096                }
1097            }
1098
1099            if (isBlinking)
1100            {
1101                if (soundPlayer != null)
1102                {
1103                    soundPlayer.Play();
1104                }
1105            }
1106
1107            if (isBlinking)
1108            {
1109                if (soundPlayer != null)
1110                {
1111                    soundPlayer.Stop();
1112                }
1113            }
1114
1115            if (isBlinking)
1116            {
1117                if (soundPlayer != null)
1118                {
1119                    soundPlayer.Play();
1120                }
1121            }
1122
1123            if (isBlinking)
1124            {
1125                if (soundPlayer != null)
1126                {
1127                    soundPlayer.Stop();
1128                }
1129            }
1130
1131            if (isBlinking)
1132            {
1133                if (soundPlayer != null)
1134                {
1135                    soundPlayer.Play();
1136                }
1137            }
1138
1139            if (isBlinking)
1140            {
1141                if (soundPlayer != null)
1142                {
1143                    soundPlayer.Stop();
1144                }
1145            }
1146
1147            if (isBlinking)
1148            {
1149                if (soundPlayer != null)
1150                {
1151                    soundPlayer.Play();
1152                }
1153            }
1154
1155            if (isBlinking)
1156            {
1157                if (soundPlayer != null)
1158                {
1159                    soundPlayer.Stop();
1160                }
1161            }
1162
1163            if (isBlinking)
1164            {
1165                if (soundPlayer != null)
1166                {
1167                    soundPlayer.Play();
1168                }
1169            }
1170
1171            if (isBlinking)
1172            {
1173                if (soundPlayer != null)
1174                {
1175                    soundPlayer.Stop();
1176                }
1177            }
1178
1179            if (isBlinking)
1180            {
1181                if (soundPlayer != null)
1182                {
1183                    soundPlayer.Play();
1184                }
1185            }
1186
1187            if (isBlinking)
1188            {
1189                if (soundPlayer != null)
1190                {
1191                    soundPlayer.Stop();
1192                }
1193            }
1194
1195            if (isBlinking)
1196            {
1197                if (soundPlayer != null)
1198                {
1199                    soundPlayer.Play();
1200                }
1201            }
1202
1203            if (isBlinking)
1204            {
1205                if (soundPlayer != null)
1206                {
1207                    soundPlayer.Stop();
1208                }
1209            }
1210
1211            if (isBlinking)
1212            {
1213                if (soundPlayer != null)
1214                {
1215                    soundPlayer.Play();
1216                }
1217            }
1218
1219            if (isBlinking)
1220            {
1221                if (soundPlayer != null)
1222                {
1223                    soundPlayer.Stop();
1224                }
1225            }
1226
1227            if (isBlinking)
1228            {
1229                if (soundPlayer != null)
1230                {
1231                    soundPlayer.Play();
1232                }
1233            }
1234
1235            if (isBlinking)
1236            {
1237                if (soundPlayer != null)
1238                {
1239                    soundPlayer.Stop();
1240                }
1241            }
1242
1243            if (isBlinking)
1244            {
1245                if (soundPlayer != null)
1246                {
1247                    soundPlayer.Play();
1248                }
1249            }
1250
1251            if (isBlinking)
1252            {
1253                if (soundPlayer != null)
1254                {
1255                    soundPlayer.Stop();
1256                }
1257            }
1258
1259            if (isBlinking)
1260            {
1261                if (soundPlayer != null)
1262                {
1263                    soundPlayer.Play();
1264                }
1265            }
1266
1267            if (isBlinking)
1268            {
1269                if (soundPlayer != null)
1270                {
1271                    soundPlayer.Stop();
1272                }
1273            }
1274
1275            if (isBlinking)
1276            {
1277                if (soundPlayer != null)
1278                {
1279                    soundPlayer.Play();
1280                }
1281            }
1282
1283            if (isBlinking)
1284            {
1285                if (soundPlayer != null)
1286                {
1287                    soundPlayer.Stop();
1288                }
1289            }
1290
1291            if (isBlinking)
1292            {
1293                if (soundPlayer != null)
1294                {
1295                    soundPlayer.Play();
1296                }
1297            }
1298
1299            if (isBlinking)
1300            {
1301                if (soundPlayer != null)
1302                {
1303                    soundPlayer.Stop();
1304                }
1305            }
1306
1307            if (isBlinking)
1308            {
1309                if (soundPlayer != null)
1310                {
1311                    soundPlayer.Play();
1312                }
1313            }
1314
1315            if (isBlinking)
1316            {
1317                if (soundPlayer != null)
1318                {
1319                    soundPlayer.Stop();
1320                }
1321            }
1322
1323            if (isBlinking)
1324            {
1325                if (soundPlayer != null)
1326                {
1327                    soundPlayer.Play();
1328                }
1329            }
1330
1331            if (isBlinking)
1332            {
1333                if (soundPlayer != null)
1334                {
1335                    soundPlayer.Stop();
1336                }
1337            }
1338
1339            if (isBlinking)
1340            {
1341                if (soundPlayer != null)
1342                {
1343                    soundPlayer.Play();
1344                }
1345            }
1346
1347            if (isBlinking)
1348            {
1349                if (soundPlayer != null)
1350                {
1351                    soundPlayer.Stop();
1352                }
1353            }
1354
1355            if (isBlinking)
1356            {
1357                if (soundPlayer != null)
1358                {
1359                    soundPlayer.Play();
1360                }
1361            }
1362
1363            if (isBlinking)
1364            {
1365                if (soundPlayer != null)
1366                {
1367                    soundPlayer.Stop();
1368                }
1369            }
1370
1371            if (isBlinking)
1372            {
1373                if (soundPlayer != null)
1374                {
1375                    soundPlayer.Play();
1376                }
1377            }
1378
1379            if (isBlinking)
1380            {
1381                if (soundPlayer != null)
1382                {
1383                    soundPlayer.Stop();
1384                }
1385            }
1386
1387            if (isBlinking)
1388            {
1389                if (soundPlayer != null)
1390                {
1391                    soundPlayer.Play();
1392                }
1393            }
1394
1395            if (isBlinking)
1396            {
1397                if (soundPlayer != null)
1398                {
1399                    soundPlayer.Stop();
1400                }
1401            }
1402
1403            if (isBlinking)
1404            {
1405                if (soundPlayer != null)
1406                {
1407                    soundPlayer.Play();
1408                }
1409            }
1410
1411            if (isBlinking)
1412            {
1413                if (soundPlayer != null)
1414                {
1415                    soundPlayer.Stop();
1416                }
1417            }
1418
1419            if (isBlinking)
1420            {
1421                if (soundPlayer != null)
1422                {
1423                    soundPlayer.Play();
1424                }
1425            }
1426
1427            if (isBlinking)
1428            {
1429                if (soundPlayer != null)
1430                {
1431                    soundPlayer.Stop();
1432                }
1433            }
1434
1435            if (isBlinking)
1436            {
1437                if (soundPlayer != null)
1438                {
1439                    soundPlayer.Play();
1440                }
1441            }
1442
1443            if (isBlinking)
1444            {
1445                if (soundPlayer != null)
1446                {
1447                    soundPlayer.Stop();
1448                }
1449            }
1450
1451            if (isBlinking)
1452            {
1453                if (soundPlayer != null)
1454                {
1455                    soundPlayer.Play();
1456                }
1457            }
1458
1459            if (isBlinking)
1460            {
1461                if (soundPlayer != null)
1462                {
1463                    soundPlayer.Stop();
1464                }
1465            }
1466
1467            if (isBlinking)
1468            {
1469                if (soundPlayer != null)
1470                {
1471                    soundPlayer.Play();
1472                }
1473            }
1474
1475            if (isBlinking)
1476            {
1477                if (soundPlayer != null)
1478                {
1479                    soundPlayer.Stop();
1480                }
1481            }
1482
1483            if (isBlinking)
1484            {
1485                if (soundPlayer != null)
1486                {
1487                    soundPlayer.Play();
1488                }
1489            }
1490
1491            if (isBlinking)
1492            {
1493                if (soundPlayer != null)
1494                {
1495                    soundPlayer.Stop();
1496                }
1497            }
1498
1499            if (isBlinking)
1500            {
1501                if (soundPlayer != null)
1502                {
1503                    soundPlayer.Play();
1504                }
1505            }
1506
1507            if (isBlinking)
1508            {
1509                if (soundPlayer != null)
1510                {
1511                    soundPlayer.Stop();
1512                }
1513            }
1514
1515            if (isBlinking)
1516            {
1517                if (soundPlayer != null)
1518                {
1519                    soundPlayer.Play();
1520                }
1521            }
1522
1523            if (isBlinking)
1524            {
1525                if (soundPlayer != null)
1526                {
1527                    soundPlayer.Stop();
1528                }
1529            }
1530
1531            if (isBlinking)
1532            {
1533                if (soundPlayer != null)
1534                {
1535                    soundPlayer.Play();
1536                }
1537            }
1538
1539            if (isBlinking)
1540            {
1541                if (soundPlayer != null)
1542                {
1543                    soundPlayer.Stop();
1544                }
1545            }
1546
1547            if (isBlinking)
1548            {
1549                if (soundPlayer != null)
1550                {
1551                    soundPlayer.Play();
1552                }
1553            }
1
```

The image shows two side-by-side instances of Microsoft Visual Studio. Both instances have the title bar "Arduino VS practica 3".

Left Instance:

- Code Editor:** Displays the file "Form1.cs [Diseño]". The code handles the closing of a serial port and the start button click event. It includes logic to open the serial port if it's not already open and to change the background color of a picture box based on sensor data.
- Solution Explorer:** Shows the solution "Arduino VS practica 3" with files "Arduino VS practica 3.csproj", "Form1.cs", and "Program.cs".
- Status Bar:** Shows "90%" and "No se encontraron problemas." (No problems found).

Right Instance:

- Code Editor:** Displays the file "Form1.cs [Diseño]". The code continues from the left instance, handling the timer tick event to toggle the background color of the picture box and the exit button click event to close the application.
- Solution Explorer:** Shows the same solution structure as the left instance.
- Status Bar:** Shows "90%", "No se encontraron problemas.", and "Activar Windows" (Activate Windows).