UNIVERSIDAD POLITÉCNICA
DE LA ZONA METROPOLITANA DE GUADALAJARA

INTERRUPCIONES

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ING. MECATRONICA

PROGRAMACION DE SISTEMAS DE EMBEBIDOS

Código en lenguaje C

```
 *
 * ========================================
*/
#include "project.h"
CY_ISR(Interrupcion){
    FOCO_Write(~FOCO_Read());
    Sw1_ClearInterrupt();
}
int main(void)
{
    void LCD_BG();
    CyGlobalIntEnable; /* Enable global interrupts. */
    IRQ_Sw_StartEx(Interrupcion);
    /* Place your initialization/startup code here (e.g. MyInst_Start()) */

    LCD_Start();
    LCD_ClearDisplay();
    LCD_Position(0,5);

    for(;;)
    {
        if(FOCO_Read())
        {
            LCD_ClearDisplay();
            LCD_Position(0,0);
            LCD_PrintString("ENCENDER LEDS");
            LCD_Position(1,0);
            LCD_DrawHorizontalBG( 1, 0, 1, 160);
            LED1_Write(1);
```

```
            if(FOCO_Read())
            {
                LCD_ClearDisplay();
                LCD_Position(0,0);
                LCD_PrintString("ENCENDER LEDS");
                LCD_Position(1,0);
                LCD_DrawHorizontalBG( 1, 0, 2, 160);
                LED2_Write(1);
                CyDelay(500);
            }else
        {
            LCD_ClearDisplay();
            LCD_Position(0,0);
            LCD_PrintString("APAGAR LEDS");
            LCD_Position(1,0);
            LCD_PrintString("----------------");
            LED1_Write(0);
            LED2_Write(0);
            LED3_Write(0);
            LED4_Write(0);
            LED5_Write(0);
            LED6_Write(0);
            LED7_Write(0);
            LED8_Write(0);
            LED9_Write(0);
            LED10_Write(0);
            CyDelay(500);
        }
            if(FOCO_Read())
```

```
                    LCD_ClearDisplay();
                    LCD_Position(0,0);
                    LCD_PrintString("ENCENDER LEDS");
                    LCD_Position(1,0);
                    LCD_DrawHorizontalBG( 1, 0, 3, 160);
                    LED3_Write(1);
                    CyDelay(500);
                  }else
            {
                    LCD_ClearDisplay();
                    LCD_Position(0,0);
                    LCD_PrintString("APAGAR LEDS");
                    LCD_Position(1,0);
                    LCD_PrintString("----------------");
                    LED1_Write(0);
                    LED2_Write(0);
                    LED3_Write(0);
                    LED4_Write(0);
                    LED5_Write(0);
                    LED6_Write(0);
                    LED7_Write(0);
                    LED8_Write(0);
                    LED9_Write(0);
                    LED10_Write(0);
                    CyDelay(500);
            }
                if(FOCO_Read())
                {
                LCD_ClearDisplay();
```

Start Page *main.c

```
                {
                LCD_ClearDisplay();
                LCD_Position(0,0);
                LCD_PrintString("ENCENDER LEDS");
                LCD_Position(1,0);
                LCD_DrawHorizontalBG( 1, 0, 4, 160);
                LED4_Write(1);
                CyDelay(500);
                }else
            {
                    LCD_ClearDisplay();
                    LCD_Position(0,0);
                    LCD_PrintString("APAGAR LEDS");
                    LCD_Position(1,0);
                    LCD_PrintString("----------------");
                    LED1_Write(0);
                    LED2_Write(0);
                    LED3_Write(0);
                    LED4_Write(0);
                    LED5_Write(0);
                    LED6_Write(0);
                    LED7_Write(0);
                    LED8_Write(0);
                    LED9_Write(0);
                    LED10_Write(0);
                    CyDelay(500);
            }
                if(FOCO_Read())
                {
```

Start Page *main.c

```
126                 LCD_Position(0,0);
127                 LCD_PrintString("ENCENDER LEDS");
128                 LCD_Position(1,0);
129                 LCD_DrawHorizontalBG( 1, 0, 5, 160);
130                 LED5_Write(1);
131                 CyDelay(500);
132                 }else
133             {
134                    LCD_ClearDisplay();
135                    LCD_Position(0,0);
136                    LCD_PrintString("APAGAR LEDS");
137                    LCD_Position(1,0);
138                    LCD_PrintString("----------------");
139                    LED1_Write(0);
140                    LED2_Write(0);
141                    LED3_Write(0);
142                    LED4_Write(0);
143                    LED5_Write(0);
144                    LED6_Write(0);
145                    LED7_Write(0);
146                    LED8_Write(0);
147                    LED9_Write(0);
148                    LED10_Write(0);
149                    CyDelay(500);
150             }
151                 if(FOCO_Read())
152                 {
153                 LCD_ClearDisplay();
154                 LCD_Position(0,0);
```

Start Page *main.c

```
156                   LCD_Position(1,0);
157                   LCD_DrawHorizontalBG( 1, 0, 6, 160);
158                   LED6_Write(1);
159                   CyDelay(500);}
160                   else
161             {
162                    LCD_ClearDisplay();
163                    LCD_Position(0,0);
164                    LCD_PrintString("APAGAR LEDS");
165                    LCD_Position(1,0);
166                    LCD_PrintString("----------------");
167                    LED1_Write(0);
168                    LED2_Write(0);
169                    LED3_Write(0);
170                    LED4_Write(0);
171                    LED5_Write(0);
172                    LED6_Write(0);
173                    LED7_Write(0);
174                    LED8_Write(0);
175                    LED9_Write(0);
176                    LED10_Write(0);
177                    CyDelay(500);
178             }
179                 if(FOCO_Read())
180                 {
181                 LCD_ClearDisplay();
182                 LCD_Position(0,0);
183                 LCD_PrintString("ENCENDER LEDS");
184                 LCD_Position(1,0);
```

Start Page *main.c

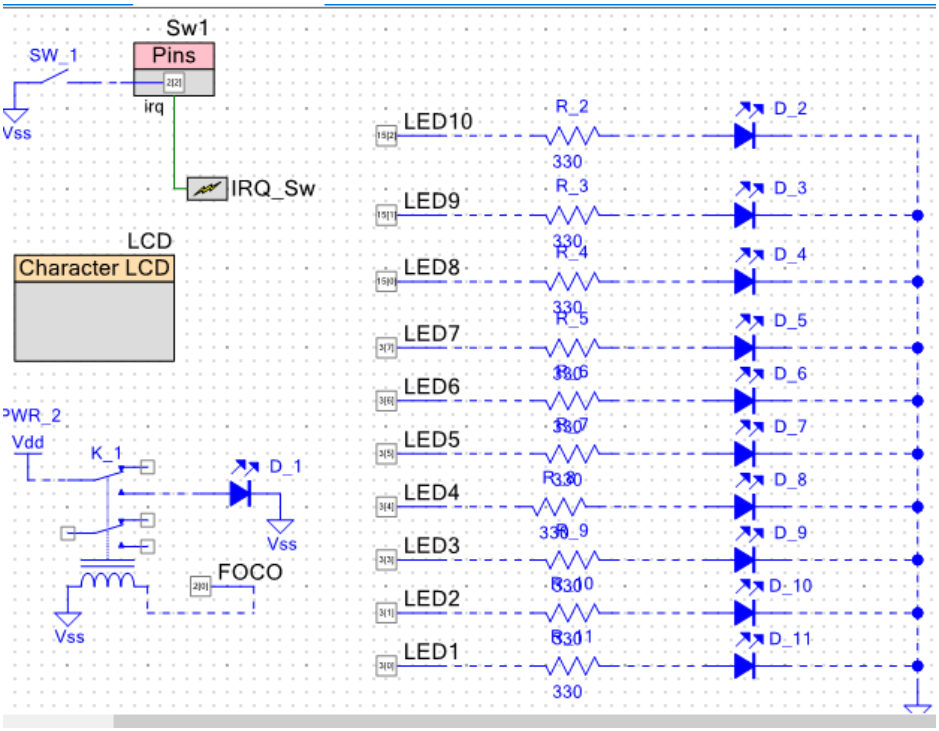
```
186                 LED7_Write(1);
187                 CyDelay(500);}
188                 else
189             {
190                 LCD_ClearDisplay();
191                 LCD_Position(0,0);
192                 LCD_PrintString("APAGAR LEDS");
193                 LCD_Position(1,0);
194                 LCD_PrintString("----------------");
195                 LED1_Write(0);
196                 LED2_Write(0);
197                 LED3_Write(0);
198                 LED4_Write(0);
199                 LED5_Write(0);
200                 LED6_Write(0);
201                 LED7_Write(0);
202                 LED8_Write(0);
203                 LED9_Write(0);
204                 LED10_Write(0);
205                 CyDelay(500);
206             }
207                 if(FOCO_Read())
208                 {
209                 LCD_ClearDisplay();
210                 LCD_Position(0,0);
211                 LCD_PrintString("ENCENDER LEDS");
212                 LCD_Position(1,0);
213                 LCD_DrawHorizontalBG( 1, 0, 8, 160);
214                 LED8_Write(1);
```

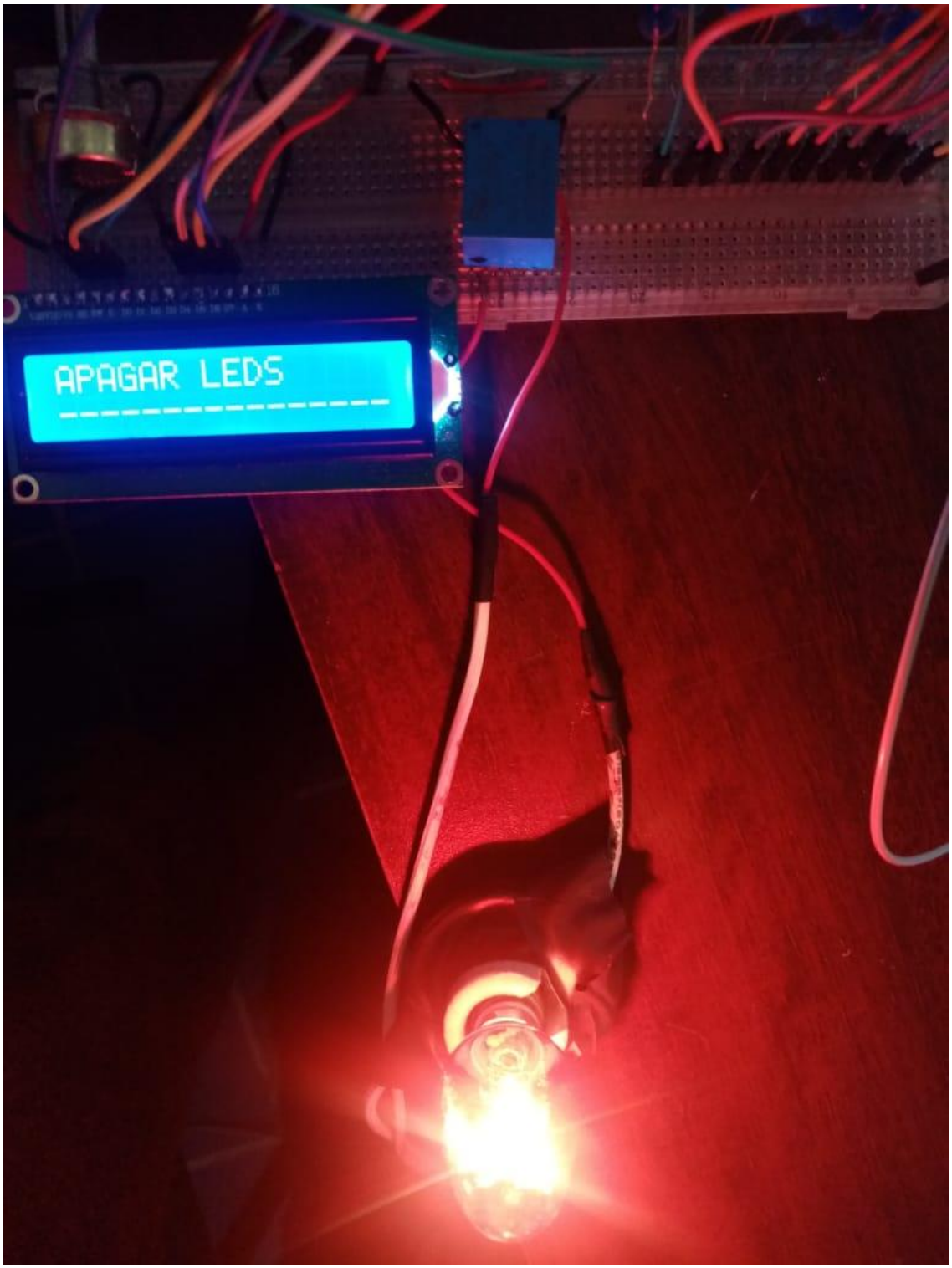
```
216                 else
217             {
218                 LCD_ClearDisplay();
219                 LCD_Position(0,0);
220                 LCD_PrintString("APAGAR LEDS");
221                 LCD_Position(1,0);
222                 LCD_PrintString("----------------");
223                 LED1_Write(0);
224                 LED2_Write(0);
225                 LED3_Write(0);
226                 LED4_Write(0);
227                 LED5_Write(0);
228                 LED6_Write(0);
229                 LED7_Write(0);
230                 LED8_Write(0);
231                 LED9_Write(0);
232                 LED10_Write(0);
233                 CyDelay(500);
234             }
235                 if(FOCO_Read())
236                 {
237                 LCD_ClearDisplay();
238                 LCD_Position(0,0);
239                 LCD_PrintString("ENCENDER LEDS");
240
241                 LCD_DrawHorizontalBG( 1, 0, 9, 160);
242                 LED9_Write(1);
243                 CyDelay(500);}
244                 else
```

void LCD_PrintString(const char8 [] string)

```
                    LED9_Write(0);
                    LED10_Write(0);
                    CyDelay(500);
                }
            }else
                {
                    LCD_ClearDisplay();
                    LCD_Position(0,0);
                    LCD_PrintString("APAGAR LEDS");
                    LCD_Position(1,0);
                    LCD_PrintString("----------------");
                    LED1_Write(0);
                    LED2_Write(0);
                    LED3_Write(0);
                    LED4_Write(0);
                    LED5_Write(0);
                    LED6_Write(0);
                    LED7_Write(0);
                    LED8_Write(0);
                    LED9_Write(0);
                    LED10_Write(0);
                    CyDelay(500);
                }

        }
}

/* [] END OF FILE */

```

TopDesing




APAGAR LEDS


ENCENDER LEDS

Conclusion.

Este tema de interrupciones, todavía no tengo claro cómo podríamos aplicarlo a nuestro proyecto. Pero se que podría ser muy útil y no solo para el proyecto, sino también para muchas cosas mas.