

Programa simple

Definiciones

```
16
17 // TODO: insert other include files here
18 //registros GPIO...
19 unsigned int volatile * const FIO0DIR=(unsigned int*) 0x2009c000;
20 unsigned int volatile * const FIO0SET=(unsigned int*) 0x2009c018;
21 unsigned int volatile * const FIO0CLR=(unsigned int*) 0x2009c01c;
22 unsigned int volatile * const FIO0PIN=(unsigned int*) 0x2009c014;
23 //registros GPIO
24
```

Programa simple

Definiciones

```
24
25 //registros NVIC
26 /*
27 ISER0 - 0xE000 E100
28 ISER1 - 0xE000 E104
29 */
30 unsigned int volatile * const ISER0=(unsigned int*) 0xE000E100;
31 unsigned int volatile * const ISER1=(unsigned int*) 0xE000E104;
32 /*
33 ICER0 - 0xE000 E180
34 ICER1 - 0xE000 E184
35 */
36 unsigned int volatile * const ICER0=(unsigned int*) 0xE000E180;
37 unsigned int volatile * const ICER1=(unsigned int*) 0xE000E184;
38 /*
39 ISPR0 - 0xE000 E200
40 ISPR1 - 0xE000 E204
41 */
42 unsigned int volatile * const ISPR0=(unsigned int*) 0xE000E200;
43 unsigned int volatile * const ISPR1=(unsigned int*) 0xE000E204;
44 /*
45 ICPR0 - 0xE000 E280
46 ICPR1 - 0xE000 E284
47 */
48 unsigned int volatile * const ICPR0=(unsigned int*) 0xE000E280;
49 unsigned int volatile * const ICPR1=(unsigned int*) 0xE000E284;
50 /*
51 IABR0 - 0xE000 E300
52 IABR1 - 0xE000 E304
53 */
```

Programa simple

Definiciones

```
78 //registros TIMERO
79
80 //T0IR - 0x4000 4000
81 //interrupt register
82 unsigned int volatile * const T0IR=(unsigned int*) 0x40004000;
83 //T0TCR - 0x4000 4004
84 //Timer control register
85 unsigned int volatile * const T0TCR=(unsigned int*) 0x40004004;
86 //T0TC - 0x4000 4008
87 //Timer counter
88 unsigned int volatile * const T0TC=(unsigned int*) 0x40004008;
89 //T0PR - 0x4000 400C
90 //prescaler register
91 unsigned int volatile * const T0PR=(unsigned int*) 0x4000400C;
92 //T0PC - 0x4000 4010
93 //prescale counter
94 unsigned int volatile * const T0PC=(unsigned int*) 0x40004010;
95 //T0MCR - 0x4000 4014
96 //Match control register
97 unsigned int volatile * const T0MCR=(unsigned int*) 0x40004014;
98 //T0MR0 - 0x4000 4018
99 //Match register 0
100 unsigned int volatile * const T0MR0=(unsigned int*) 0x40004018;
101 //T0MR1 - 0x4000 401C
102 //Match register 1
103 unsigned int volatile * const T0MR1=(unsigned int*) 0x4000401C;
104 //T0MR2 - 0x4000 4020
105 //match register 2
```

Programa simple

Programa principal

```
130
131 int main(void)
132 {
133     // TODO: insert code here
134     *FIOODIR|=(1<<22);      //Configuramos el pin 22 del puerto cero como salida
135
136     *TOCTCR=0;              //TIMER0 configurado como Timer (no es necesario)
137     *TOMR0=25000000;        //Match register cero en 25000000
138     *TOPR=0;                //Prescaler Register en cero (TC incrementa cada TOPR+1)
139     *TOMCR|=(1<<1) | (1<<0); //Configuramos para que interrumpa en MR0 y resetee el TC
140
141     *ISER0=(1<<1);          //habilitamos la interrupción de TIMER0 (NVIC)
142     *TOTCR|=1;              //habilitamos el TIMER0 para que cuente
143
144     while(1)                //Esperamos en un bucle infinito
145     {                        //a que la interrupción de TIMER0 ocurra
146
147     }
148     return 0 ;
149 }
```

Programa simple

Rutina de Interrupción

```
151 void TIMER0_IRQHandler(void)
152 {
153     *TOIR|=1;          //Bajamos Bandera
154
155     //Generamos el toggle del pin 22 (LED2)
156     if(*FIOOPIN & (1<<22))
157     {
158         *FIOOCLR=(1<<22);
159     }
160     else
161     {
162         *FIOOSET=(1<<22);
163     }
164     return;
165 }
```