

```
'*****RELOJ_binario_V1.BAS*****  
'Reloj binario HRS:MIN:SEG  
'formato de 24 horas ;  
'Ajuste Hrs y Min  
'Microcontrolador ATMEGAx8  
'20 leds + ULN2803  
'Xtal de 32768 Hz  
'otoniel.flores@mail.utec.edu.sv  
'*****
```

```
$regfile = "m48def.dat"
```

```
$prog , &HE2 , ,
```

```
Enable Interrupts
```

```
Config Clock = Soft
```

```
Enable INT0
```

```
Config INT0 = Falling
```

```
On INT0 Incrementa_m
```

```
Enable INT1
```

```
Config INT1 = Falling
```

```
On INT1 Incrementa_h
```

```
Config PORTB = Output
```

```
Config PORTC = Output
```

```
Config PORTD = &B11110011
```

```
Config PORTD.2 = Input
```

```
PORTD.2 = 1
```

```
Config PORTD.3 = Input
```

```
PORTD.3 = 1
```

```
Dim Hora As Byte
```

```
Dim Seg_dec As Byte
```

```
Dim Seg_uni As Byte
```

```
Dim Min_dec As Byte
```

```
Dim Min_uni As Byte
```

```
Dim Hor_dec As Byte
```

```
Dim Hor_uni As Byte
```

```
Time$ = "08:00:00"
```

```
Hora = _hour
```

```
Do
```

```
Seg_dec = _sec / 10
```

```
Seg_uni = _sec Mod 10
```

```
Min_dec = _min / 10
```

```
Min_uni = _min Mod 10
```

```
Hor_dec = _hour / 10
```

```
Hor_uni = _hour Mod 10
```

```
PORTB.5 = 0
```

```
PORTB.4 = 0
```

```
PORTB.3 = 0
```

```
PORTB.2 = 0
```

```
PORTB.1 = 0
```

```
PORTC = Seg_uni
```

```
PORTB.0 = 1
```

```
Waitms 5
```

```
PORTB.0 = 0
```

```
PORTB.5 = 0
PORTB.4 = 0
PORTB.3 = 0
PORTB.2 = 0
PORTC = Seg_dec
PORTB.1 = 1
```

```
Waitms 5
```

```
PORTB.1 = 0
PORTB.0 = 0
PORTB.5 = 0
PORTB.4 = 0
PORTB.3 = 0
PORTC = Min_uni
PORTB.2 = 1
```

```
Waitms 5
```

```
PORTB.2 = 0
PORTB.1 = 0
PORTB.0 = 0
PORTB.5 = 0
PORTB.4 = 0
PORTC = Min_dec
PORTB.3 = 1
```

```
Waitms 5
```

```
PORTB.3 = 0
PORTB.2 = 0
PORTB.1 = 0
PORTB.0 = 0
PORTB.5 = 0
PORTC = Hor_uni
PORTB.4 = 1
```

```
Waitms 5
```

```
PORTB.4 = 0
PORTB.3 = 0
PORTB.2 = 0
PORTB.1 = 0
PORTB.0 = 0
PORTC = Hor_dec
PORTB.5 = 1
```

```
Waitms 5
```

```
PORTB.5 = 0
```

```
Dim Ban_atraso As Byte
```

```
If _hour = 23 And _min = 59 And _sec = 50 And Ban_atraso = 0 Then
```

```
_sec = 48
```

```
Ban_atraso = 1
```

```
End If
```

```
If _hour = 23 And _min = 59 And _sec = 55 And Ban_atraso = 1 Then
```

```
Ban_atraso = 0
```

```
End If
```

```
Loop
```

```
End
```

```
'*subrutina que se ejecuta al presionar el boton de minutos*
```

```
Incrementa_m:
```

```
Waitms 100
```

```
PORTD.2 = 1
```

```
PORTD.3 = 1
```

```
Incr _min
```

```
_sec = 0
```

```
If _min > 59 Then _min = 0
```

```
Return
```

*'*subrutina que se ejecuta al presionar el boton de horas**

Incrementa_h:

Waitms 100

PORTD.2 = 1

PORTD.3 = 1

Incr _hour

_sec = 0

If _hour > 24 **Then** _hour = 01

'Hora = _hour

Return