```
/*
A demonstration program for GCBASIC.
-------------------------------------------------------------------------
The demonstration focuses on interrupt priorities in
high-end MCU.

The external interrupt EXTINT0 is connected to the SW1
switch which is a high-priority interrupt.

The Timer0 overflow interrupt is a low-priority
interrupt, which is used to blink LED DS0 ( using the
millis function ) at a constant rate set by the user.
The constant LEDRATE sets the period.
When SW1 is pressed, the high-priority external
interrupt takes priority over the low-priority Timer0
interrupt  ( using the millis function ) and stops LED
from blinking for a second and lights the DS1 LED.
After a second, the DS1 LED is turned off and Timer0
resumes blinking the DS0 LED.

This demonsration explains when the low-priority
interrupt is being serviced; it can be interrupted by
high-priority interrupts

@author    EvanV
@license   GPL
@version   1.00
@date      2024-08-17
*************************************************************************
*/


#chip 16F887
#option explicit
```

```
/*
            ------------PORTA--------------
    Bit#:  -7---6---5---4---3---2---1---0---
    IO:    ----------------------------AN0--
    IO:    --------------------------------

            ------------PORTB----------------
    Bit#:  -7---6---5---4---3---2---1---0---
    IO:    ----------------------------SW---
    IO:    --------------------------------

            ------------PORTC----------------
    Bit#:  -7---6---5---4---3---2---1---0---
    IO:    --------------------------------
    IO:    --------------------------------

            ------------PORTD----------------
    Bit#:  -7---6---5---4---3---2---1---0---
    IO:   -DS8-DS7-DS6-DS5-DS4-DS3-DS2-DS1--
    IO:    --------------------------------

*/

On Interrupt ExtInt0 Call ISR
INTEDG = 0      // Interrupt on the failing edge of the
EXTINT0

DIR PORTD OUT
#define DS0 PORTD.0       // Define the LED Pin -
Digital Pin
DIR PORTD OUT
#define DS1 PORTD.1       // Define the LED Pin -
Digital Pin

DIR PORTB.0 In
#define SWITCH PORTB.0
```

```
#include <millis.h>       // Include the Library

    #define LEDRATE 100       // Flash rate in mS
    // Setup
    Dir DS0 Out               // Make the LED Pin an
Output
    DS0 = 0

    Dim CurMs, LstMs as word  // declare working
variables
    // Main                    // This loop runs over
and over forever.
    LstMs = 0
    CurMs = 0

    // Main                    // This loop runs over
and over forever.
    Do
        CurMs = millis()

        if CurMs - LstMs >= LEDRATE then  // required
Time has Elapsed

        DS0 = !DS0                        // So Toggle
state of LED
        LstMs = CurMs                     // And Record
Toggle Time
        end if

    Loop



Sub ISR

    'Service the high priority interrupt, set the LED
with a delay of 1 s.
```

```
    Dir DS0 Out

    DS1 = 1
    Wait 1 s
    DS1 = 0

End Sub
END
```