

'-----Title-----

' File.....16F877A\_count1.pbp  
' Started....5/9/08  
' Microcontroller used: Microchip Technology PIC16F877A  
' microchip.com  
' PicBasic Pro Code: micro-Engineering Labs, Inc.  
' melabs.com

'-----Program Description-----

' Program illuminates 8 LEDs to count in binary from  
' %00000000 (0 in decimal) to %11111111 (255 in decimal).

'-----Comments-----

' Schematic uses 470 ohm current limiting resistors  
' connected to each LED. The current through each LED  
' is about 6 mA. When all 8 LEDs are on, the total  
' current sourced by PORTB is about 50mA, within the  
' 100 mA maximum current limit that a PORT can source.

'-----PIC Connections-----

| 16F88 Pin | Wiring |
|-----------|--------|
| RB0       | LED1   |
| RB1       | LED2   |
| RB2       | LED3   |
| RB3       | LED4   |
| RB4       | LED5   |
| RB5       | LED6   |
| RB6       | LED7   |
| RB7       | LED8   |

' See schematic for the other usual PIC connections  
' See schematic at:  
' [http://www.cornerstonerobotics.org/schematics/pic16f877a\\_count1.pdf](http://www.cornerstonerobotics.org/schematics/pic16f877a_count1.pdf)

'-----Variables-----

c0     **VAR**     **BYTE**            ' BYTE to store counter variable, c0

'-----Initialization-----

TRISB = %00000000            ' Set PORTB pins as outputs  
  
PORTB = %00000000            ' Set PORTB pins LOW(0 volts)  
  
ADCON1 = %00000110            ' Changes PORTE and PORTA analog bits to  
                                  ' digital operation since not using ADC  
                                  ' (Analog to Digital Converter)

'-----Main Code-----

start:

```
FOR c0 = 0 TO 255           ' Count from 0 to 255

PORTB = c0                   ' Illuminate LEDs to display binary
                              ' number. For example, when c0 = 4
                              ' the binary number for 4 is %00000100.
                              ' This command sets PORTB to %00000100,
                              ' bringing RB2 HIGH which turns on the
                              ' LED connected to RB2. All of the
                              ' pins are set LOW leaving their
                              ' respective LEDs off.

PAUSE 200                   ' Pause 200 ms

NEXT c0                     ' Goes to next c0

PAUSE 3000                 ' Pauses 3 seconds displaying the binary
                              ' number %11111111, then starts over

GOTO start

END
```