

```
'-----Title-----
' File.....16F977A_switch1.pbp
' Started....6/1/05
' Microcontroller used:  Microchip Technology 16F877A
'                          microchip.com
' PBPro Code, micro-Engineering Labs, Inc.
'                          melabs.com

'-----Program Description-----
' Turn on/off LEDs with button switch.

'-----Schematic-----
' See schematic at:
' http://www.cornerstonerobotics.org/schematics/pic16f877a\_switch1.pdf

'-----Related Lesson-----
' switch1.pbp (the 16F88 program) is used in the
' lesson PIC PROGRAMMING 3 SERVOS at:
' http://cornerstonerobotics.org/curriculum/lessons\_year2/erii13\_pic\_programming3\_servos.pdf
' switch1.pbp is also used in the
' lesson ACTIVE HIGH ACTIVE LOW at:
' http://www.cornerstonerobotics.org/curriculum/lessons\_year2/erii19\_active\_high\_active\_low.pdf

'----New PicBasic Pro Commands----
' The PicBasic Pro Compiler Manual is on line at:
' http://www.microengineeringlabs.com/resources/index.htm#Manuals
' IF...THEN
' IF comparison THEN label
' When the comparison in an IF..THEN command is true,
' the program will jump to the label after THEN.
' When the comparison is false, the program will
' continue to the statement after the IF..THEN command.
' Look around page 91 in the PicBasic Pro Compiler Manual

'-----Revision History-----
' 3/1/06      Clean-up comments & change labels
' 11/17/07:  Change PIC MCU from 16F84A to 16F88
' 11/17/07  Add 16F88 oscillator initialization
' 1/1/09      Change from 16F88 to 16F877A

'-----Variables-----
' switch1  VAR PORTB.0      ' Labels PORTB.0 as switch1

'-----Initialization-----
```

```
TRISB = %00000001    ' Sets up pin RB0 of PORTB as an input
                    ' and pins B1-B7 as outputs

PORTB = %00000010    ' Sets pin RB1 to HIGH (+5 volts),
                    ' all other PORTB pins to LOW (0 volts)
```

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

start:

```
IF switch1 = 1 THEN led2    ' If the switch on PORTB.0 is pushed,
                            ' PORTB.0 becomes HIGH (+5 volts) and
                            ' the comparison is true, so the program
                            ' jumps to the label led2.

HIGH 1                      ' When the comparison is false, the program
                            ' proceeds to the statement after the
                            ' IF..THEN command, in our case, HIGH 1.
                            ' This makes pin RB1 output high (+5 volts)

LOW 2                       ' Makes pin RB2 output LOW (0 volts)

PAUSE 1                     ' Pause 1 ms

GOTO start                  ' Jump to start label
```

led2:

```
LOW 1                      ' Makes pin RB1 output LOW(0 volts)

HIGH 2                     ' Makes pin RB2 output HIGH(+5 volts)

PAUSE 1                    ' Pause 1 ms

GOTO start                  ' Jump to start label

END
```