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'-----Title-----
' File.....multiplex_rx2.pbp
' Started....8/6/12
' Microcontroller used: Microchip Technology 16F88
'                          microchip.com
' PicBasic Pro Code: micro-Engineering Labs, Inc.
'                          melabs.com

'-----Program Description-----
' Receiver program to control four LEDs with one variable.
' Not a true multiplexing program since the receiving PIC
' accepts only one variable of the switch control data from
' the transmitting PIC.
' Companion program is multiplex_tx2.pbp.

'-----Schematic-----
' See http://cornerstonerobotics.org/schematics/multiplex\_tx\_rx1\_and\_2.pdf

'-----Variable-----
      A          VAR   BYTE          ' Allocates a byte for variable A

'-----Initialization-----
DEFINE OSC          8              ' Oscillator is defined as 8 MHz.
DEFINE HSER_RCSTA  90h            ' These are predefines for serial
                                     ' communication, defining the pin states of
DEFINE HSER_TXSTA  20h            ' RB2(Rx) and RB5(Tx).
DEFINE HSER_BAUD   9600           ' Sets Baud rate to 9600.
DEFINE HSER_BITS   8              ' Sets each data bit to an 8-bit value.

ANSEL = 0                          ' Sets all analog pins to digital.
PORTB = %00100000                   ' Sets all PORTB pins low except RB5(Tx)
OSCCON = $70                         ' Internal oscillator set to 8 MHz.
TRISB = %00000100                   ' Set all PORTB pins as outputs, except
RB2(Rx).

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

Start:

      HSERIN[WAIT("B0"), A]         ' Serial input, B0 is start bit, A is data
                                     ' variable .
      PORTB.0 = A.0                  ' Sets pin RB0 to the state of A.0 (1 or 0)
      PORTB.1 = A.1                  ' Sets pin RB1 to the state of A.1 (1 or 0)
                                     ' PORTB pin RB2 skipped because it is
                                     ' used as the serial receive pin.
      PORTB.3 = A.2                  ' Sets pin RB3 to the state of A.2 (1 or 0)
      PORTB.4 = A.3                  ' Sets pin RB4 to the state of A.3 (1 or 0)
```

GOTO Start

END