```
'---------------Title--------------

' File......h_bridge_sn754410_1.pbp
' Started....1/17/08
' Microcontroller used:  Microchip Technology 16F88
'                        microchip.com
' PBPro Code, micro-Engineering Labs, Inc.
'             melabs.com

'--------Program Desciption--------

' Drives two motors using TI SN754410 H-bridge
' motor driver through several drive combinations

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

' PWM (Pulse Width Modulation) has yet to be covered
' so its pin is either set HIGH, full on, (100% duty cycle)
' or LOW, full off, (0% duty cycle).  See the lesson on PWM
' to adjust values between 100% and 0%.

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

'       16F88 Pin              Wiring
'       ---------           ----------
'       RB0                 PWM Motor 2 Input into SN755410
'       RB1                 Direction Motor 2 Input into SN754410
'       RB2                 PWM Motor 1 Input into SN755410
'       RB3                 Direction Motor 1 Input into SN754410
'       RB4                 Red LED
'       RB5                 Green LED
'       Vdd                 +5 V
'       Vss                 Ground
'       MCLR                4.7K Resistor to +5 V

'--SN754410 H-Bridge Control Pins--

    dx_motor1   VAR PORTB.0     ' Labels PORTB.0 as dx_motor1
    pwm_motor1  VAR PORTB.1     ' Labels PORTB.1 as pwm_motor1
    dx_motor2   VAR PORTB.2     ' Labels PORTB.2 as dx_motor2
    pwm_motor2  VAR PORTB.3     ' Labels PORTB.3 as pwm_motor2

'-------------LED Pins-------------

    red_led     VAR PORTB.4     ' Labels PORTB.4 as red_led
    green_led   VAR PORTB.5     ' Labels PORTB.5 as green_led

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

    PORTB = %00000000           ' Sets RB0-RB7 to LOW

    TRISB = %00000000           ' Sets all PORTB pins as outputs

    ANSEL = 0                   ' Configure all pins to digital
                                ' operation since not using ADC
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                                ' (Analog to Digital Converter)

    OSCCON = $60                ' Sets the internal oscillator in the
                                ' 16F88 to 4 MHz

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

start:

'Red and green LEDs alternately flash
    red_led = 1                 ' PORTB.4, called red_led, set HIGH, (1)
    green_led = 0               ' PORTB.5, called green_led, set LOW, (0)
    PAUSE 500                   ' Wait 500 ms or 1/2 second
    red_led = 0                 ' PORTB.4, called red_led, set LOW, (0)
    green_led = 1               ' PORTB.5, called green_led, set HIGH, (1)
    PAUSE 500                   ' Wait 500 ms or 1/2 second
    green_led = 0               ' PORTB.5, called green_led, set LOW, (0)
' Motor 1 forward, Motor 2 forward:
    dx_motor1 = 1               ' Motor 1 direction set to forward, (1)
    pwm_motor1 = 1              ' Motor 1 PWM set to HIGH, (100% duty cycle)
    dx_motor2 = 1               ' Motor 2 direction set to forward, (1)
    pwm_motor2 = 1              ' Motor 2 PWM set to HIGH, (100% duty cycle)
    PAUSE 2000                  ' Wait 2000 ms or 2 seconds
' Motor 1 forward, Motor 2 stopped:
    dx_motor1 = 1               ' Motor 1 direction set to forward, (1)
    pwm_motor1 = 1              ' Motor 1 PWM set to HIGH, (100% duty cycle)
    dx_motor2 = 0               ' Motor 2 direction set to reverse, (0)
                                ' Setting can be either 0 or 1 since PWM = 0
    pwm_motor2 = 1              ' Motor 2 PWM set to LOW, (0% duty cycle)
    PAUSE 2000                  ' Wait 2000 ms or 2 seconds
' Motor 1 stopped, Motor 2 forward:
    dx_motor1 = 0
    pwm_motor1 = 0
    dx_motor2 = 1
    pwm_motor2 = 1
    PAUSE 2000
'Red and green LEDs flash together
    red_led = 1
    green_led = 1
    PAUSE 500
    red_led = 0
    green_led = 0
' Motor 1 reverse, Motor 2 reverse:
    dx_motor1 = 0
    pwm_motor1 = 1
    dx_motor2 = 0
    pwm_motor2 = 1
    PAUSE 2000
' Motor 1 reverse, Motor 2 stopped:
    dx_motor1 = 0
    pwm_motor1 = 1
    dx_motor2 = 0
    pwm_motor2 = 0
    PAUSE 2000
' Motor 1 stopped, Motor 2 reverse:
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```
    dx_motor1 = 0
    pwm_motor1 = 0
    dx_motor2 = 0
    pwm_motor2 = 1
    PAUSE 2000
'Red LED flashes:
    red_led = 1
    PAUSE 500
    red_led = 0
' Motor 1 forward, Motor 2 reverse:
    dx_motor1 = 1
    pwm_motor1 = 1
    dx_motor2 = 0
    pwm_motor2 = 1
    PAUSE 2000
' Motor 1 reverse, Motor 2 forward:
    dx_motor1 = 0
    pwm_motor1 = 1
    dx_motor2 = 1
    pwm_motor2 = 1
    PAUSE 2000

    GOTO start      'Jump to loop label

    END
```