Program for DC Motor using PWM

```
/*    Calculations
 * Fosc = 48MHz
 * PWM Period = [(PR2) + 1] * 4 * TMR2 Prescale Value / Fosc
 * PWM Period = 200us
 * TMR2 Prescale = 16
 * Hence, PR2 = 149 or 0x95
  * Duty Cycle = 10% of 200us
 * Duty Cycle = 20us
 * Duty Cycle = (CCPR1L:CCP1CON<5:4>) * TMR2 Prescale Value / Fosc
 * CCP1CON<5:4> = <1:1>
 * Hence, CCPR1L = 15 or 0x0F
 */
#include<p18f4550.h>

void timer2Init(void)
{
   T2CON   =   0b00000010;          //Prescalar = 16; Timer2 OFF
   PR2     =   0x95;                //Period Register
}

void delay(unsigned int time)
{
unsigned int i, j;
```

```
for(i=0;i<time;i++)
for(j=0;j<2000;j++);
}


void main(void)
{
unsigned int i;
   TRISCbits.TRISC1    = 0;          //RC1 pin as output
   TRISCbits.TRISC2    = 0;          //CCP1 pin as output
   LATCbits.LATC1      = 0;
CCP1CON  =  0b00111100;          //Select PWM mode; Duty cycle LSB CCP1CON<4:5> =
<1:1>
   CCPR1L  =  0x0F;               //Duty cycle 10%
timer2Init();                   //Initialize Timer2
      TMR2ON = 1;                    //Timer2 ON
while(1)                        //Loop forever
   {
for(i=15;i<150;i++)
      {
         CCPR1L = i;
delay(100);
      }

for(i=150;i>15;i--)
```

```
        {
            CCPR1L = i;
delay(100);
        }
    }
}
```