Generation of PWM signal for DC Motor control.

CODE :-

```
#include<PIC18F4550.h>
#define SW1 PORTAbits.RA2
#define SW2 PORTAbits.RA3
void main(void)
{
   ADCON1=0X0F;
   TRISCbits.TRISC2 =0;
   TRISAbits.TRISA2 =1;
   TRISAbits.TRISA3 =1;
   T2CON = 0X02;
   PR2 = 149;
   while(1)
   {
      if (SW1==0)
      {
         CCPR1L=37;
         CCP1CON=0X1F;
         TMR2ON=1;
         if (SW2==0)
            break;
      }
       if (SW2==0)
      {
         CCPR1L=111;
```

```
        CCP1CON=0X3F;
        TMR2ON=1;
        if (SW1==0)
           break;
      }
   }
}
```

Interfacing of LCD to PIC 18FXXXX

CODE :-

```
#include<PIC18F4550.h>
#define RS PORTAbits.RA0
#define EN PORTAbits.RA1
#define ldata PORTB
void delay();
void Sendcommand(unsigned char);
void Senddata(unsigned char);



void main()
{
ADCON1=0x0F;
TRISB=0x00;
TRISA=0x00;
PORTAbits.RA5=0;
   Sendcommand(0X38);
   Sendcommand(0X01);
   Sendcommand(0X0E);
   Sendcommand(0X06);
   Sendcommand(0X84);
   Senddata('S');
   Senddata('P');
   Senddata('P');
   Senddata('U');
```

```
    Sendcommand(0XC4);
    Senddata('W');
    Senddata('E');
    Senddata('L');
    Senddata('C');
    Senddata('O');
    Senddata('M');
    Senddata('E');
    while(1);
}
void Sendcommand(unsigned char x)
{
    RS=0;
    ldata=x;
    EN=1;
    delay();
    EN=0;
    delay();
}
void Senddata(unsigned char y)
{
    RS=1;
    ldata=y;
    EN=1;
    delay();
    EN=0;
```

```
    delay();
}
void delay()
{
 int i;
for(i=0;i<=1000;i++);
}
```

Write a program for interfacing button, LED, relay & buzzer as follows

CODE :-

```
#include<PIC18F4550.h>
#define Buzzer PORTAbits.RA5
#define Relay PORTAbits.RA4
#define switch1 PORTAbits.RA2
#define switch2 PORTAbits.RA3
#define LED PORTB

void lefttoright();
void righttoleft();
void delay();

void main()
{
ADCON1=0X0F;
TRISB=0x00;
TRISAbits.RA2=1;
TRISAbits.RA1=1;

TRISAbits.RA4=0;
TRISAbits.RA5=0;
PORTB=0x00;

while(1)
{
```

```
if(switch1==0)
{
while(1)
{
Buzzer=1;
Relay=1;
lefttoright();
if(switch2==0)
break;
}
}
if(switch2==0)
{
while(1)
{
Buzzer=0;
Relay=0;
righttoleft();
if(switch1==0)
break;
}
}
}
}
void lefttoright()
{
```

```
LED=0x80;
delay();
LED=0x40;
delay();
LED=0x20;
delay();
LED=0x10;
delay();
LED=0x08;
delay();
LED=0x04;
delay();
LED=0x02;
delay();
LED=0x01;
delay();
}

void righttoleft()
{
   LED=0x01;
   delay();
   LED=0x02;
   delay();
   LED=0x04;
   delay();
```

```
    LED=0x08;
    delay();
    LED=0x10;
    delay();
    LED=0x20;
    delay();
    LED=0x40;
    delay();
    LED=0x80;
    delay();
}
void delay()
{
unsigned int i;
for(i=0;i<=60000;i++);
}
```