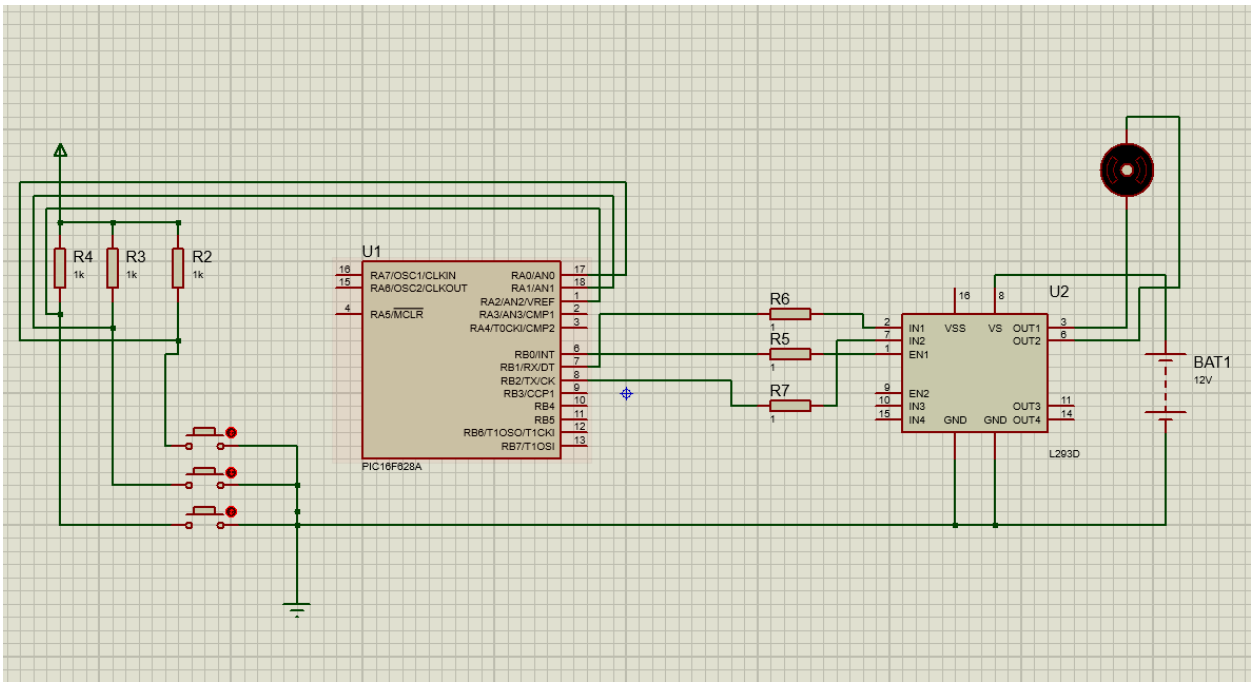
# EXERCISE 06

## Source Code

```
sbit Brake at RA2_bit;
char forwardDone = 0;
void main() {

    CMCON = 0x07;
    TRISA = 0x07;
    TRISB = 0x00;
    PORTB = 0x00;

    while(1) {

        if (!Forward && forwardDone == 0 ) {
            PORTB = 0x00;
            RB0_bit = 1;
            RB1_bit = 0;
            RB2_bit = 1;

            // Wait 10 seconds
            Delay_ms(1000);

            PORTB = 0x00;  // Stop motor

        }

        else if (!Reverse) {
            PORTB = 0x00;
            RB0_bit = 1;
            RB1_bit = 1;
            RB2_bit = 0;
        }

        else if (!Brake) {
            PORTB = 0x00;
        }
    }
}
```

```
sbit Forward at RA0_bit;
sbit Reverse at RA1_bit;
sbit Brake at RA2_bit;
char forwardDone = 0;
void main() {

    CMCON = 0x07;
    TRISA = 0x07;
    TRISB = 0x00;
    PORTB = 0x00;

    while(1) {

        if (!Forward && forwardDone == 0 ) {
            PORTB = 0x00;
            RB0_bit = 1;
            RB1_bit = 0;
            RB2_bit = 1;

            // Wait 10 seconds
            Delay_ms(10000);
            PORTB = 0x00;  // Stop motor
        }
        else if (!Reverse) {
            PORTB = 0x00;
            RB0_bit = 1;
            RB1_bit = 1;
            RB2_bit = 0;
        }
        else if (!Brake) {
            PORTB = 0x00;
        }
    }
}
```

## Circuit


R4
1k
R3
1k
R2
1k
U1
RA7/OSC1/CLKIN
RA6/OSC2/CLKOUT
RA5/MCLR
RA0/AN0
RA1/AN1
RA2/AN2/VREF
RA3/AN3/CMP1
RA4/T0CKI/CMP2
RB0/INT
RB1/RX/DT
RB2/TX/CK
RB3/CCP1
RB4
RB5
RB6/T1OSO/T1CKI
RB7/T1OSI
PIC16F628A
R6
R5
R7
U2
IN1
IN2
EN1
VSS
VS
OUT1
OUT2
EN2
IN3
IN4
GND
GND
OUT3
OUT4
L293D
BAT1
12V