

```
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//304D074  
//TE-D  
//EXP7
```

```
#include <stdio.h>  
#include <stdlib.h>  
#include<pic18f4550.h>
```

```
#define RS LATCbits.LATC0  
#define E LATCbits.LATC1  
#define LCDPORT LATB  
#define R1 LATDbits.LATD0  
#define R2 LATDbits.LATD1  
#define R3 LATDbits.LATD2  
#define R4 LATDbits.LATD3  
#define C1 PORTDbits.RD4  
#define C2 PORTDbits.RD5  
#define C3 PORTDbits.RD6  
#define C4 PORTDbits.RD7
```

```
void delay()  
{  
for(int i=0; i<30000; i++)  
    {  
    }  
}
```

```
void sendCommand(unsigned char  
command) {  
LCDPORT=command;  
RS=0;  
delay();  
E=1;  
delay();  
E=0;  
delay();  
}  
void sendData(unsigned char data)  
{  
LCDPORT=data;  
RS=1;  
delay();  
E=1;
```

```
delay();
E=0;
delay();
}
```

```
unsigned char keypad_read(void)
{
R1 = 0;
R2 = 1;
R3 = 1;
R4 = 1;
delay();
        if (C1 == 0) return '1';
        if (C2 == 0) return '2';
        if (C3 == 0) return '3';
        if (C4 == 0) return 'A';
```

```
R1 = 1;
R2 = 0;
R3 = 1;
R4 = 1;
delay();
if (C1 == 0) return '4';
if (C2 == 0) return '5';
if (C3 == 0) return '6';
if (C4 == 0) return 'B';
```

```
R1 = 1;
R2 = 1;
R3 = 0;
R4 = 1;
delay();
if (C1 == 0) return '7';
        if (C2 == 0) return '8';
        if (C3 == 0) return '9';
        if (C4 == 0) return 'C';
```

```
R1 = 1;
R2 = 1;
R3 = 1;
R4 = 0;
delay();
        if (C1 == 0) return '0';
        if (C2 == 0) return 'D';
        if (C3 == 0) return 'E';
        if (C4 == 0) return 'F';
```

```
return 0xFF;
}
unsigned char keypad_wait()
```

```

{
unsigned char key_press = 0xFF;
do
{
key_press = keypad_read(); }
while (key_press == 0xFF);
while (keypad_read() != 0xFF);
return key_press;
}
void main()
{
TRISB=0x00;
TRISD=0xF0;
TRISCbits.RC0=0;
TRISCbits.RC1=0;
unsigned char key_get;
sendCommand(0x38);
sendCommand(0x01);
sendCommand(0x0F);
sendCommand(0x06);
sendCommand(0x80);
while(1)
{
key_get = keypad_wait();
sendData(key_get);
}
}

```