**Expt No. 5 KEYPAD INTERFACING**

#include<LPC21xx.h>

#include<ucos.h>

/\*#include<lcd1.h>\*/

#define KEYPORTDIR \*IODIR0

#define KEYPORTSET \*IOSET0

#define KEYPORTCLR \*IOCLR0

#define rowpattern 0x04

#define colpattern 0x40

//unsigned char numarray[]={0x2d,0x3f,0x3b,0x79,0x66,0x6d,0x7d,0x07,0x7f,0x6f};

unsigned char numarray[]={0x3f,0x06,0x5b,0x4f,0x66,0x6d,0x7d,0x07,0x7f,0x6f};

static char num[4][4]={

{0,4,7,0},

{2,5,8,0},

{3,6,9,0},

{0,0,0,0}

};

void delay(long y)

{

long x=0;

while(x!=y)

x++;

}

// to print given number on 7-segment display

void putnum\_7seg(unsigned char n)

{

\*IOSET1 = (numarray[n]<<16) ;

//\*IODIR1 = 0xff0000; // segment pins as output

//\*IOPIN1 = (unsigned int) (numarray[n]<<16) ;

}

// clear 7 segment display

void clear\_7seg()

{

\*IOCLR1 = 0X00FF0000; //Clear Data Bit

//\*IODIR1 = 0xff0000; // segment pins as output

//\*IOPIN1 = (unsigned int) (0x00<<16) ;

}

unsigned char detectkey()

{

int col=0,row=0,x;

\*IODIR0 = \*IODIR0 | 0x03fc;

xyz: for(col=0;col<4;col++)

{

\*IOCLR0 = \*IOCLR0 | (~(0x0200>>col));

\*IOSET0 = \*IOSET0 | (0x0200>>col);

x= (\*IOPIN0 & 0x3c)>>2;

if(x == 0x01)

{

row = 0;

q\_printf("\n Key from %d th row and %d column",col+1, row+1);

return num[row][col];

}

if(x == 0x02)

{

row=1;

q\_printf("\n Key from %d th row and %d column",col+1,row+1);

return num[row][col];

}

if(x == 0x04)

{

row = 2;

q\_printf("\n Key from %d th row and %d column",col+1,row+1);

return num[row][col];

}

if(x == 0x08)

{

row = 3;

q\_printf("\n Key from %d th row and %d column",col+1,row+1);

return num[row][col];

}

}

goto xyz;

}

void debounce()

{

unsigned int i=10000;

while(i<=10000)

i--;

}

unsigned int getch\_keypadto7seg()

{

unsigned char temp,nexttemp;

temp = detectkey();

debounce();

nexttemp = detectkey();

if( nexttemp == temp)

return nexttemp;

else

return 0;

}

int main()

{

unsigned char ch;

// write your program here

\*PINSEL2= \*PINSEL2 & 0xFFFFFFF3;

\*IODIR1 = 0X017F0000;

\*IODIR0 = 0x10000000;

\*IOSET0 = 0x10000000; //select Seven Segment S1 ,S3,S4

\*IOSET1 = 0X01000000; //Select Seven Segment S2

\*IOCLR1 = 0X00FF0000; //Clear Data Bit

while(1)

{

ch= getch\_keypadto7seg();

clear\_7seg();

putnum\_7seg(ch);

}

return 0;

}