Program 9

Display the Hex digits 0 to F on a 7-segment LED interface, with an appropriate

delay in between.

#include <LPC214x.H>

void delay\_led(unsigned long int);

int main(void)

{

IO0DIR = 0x000007FC;

while(1)

{

IO0CLR = 0x00000FFF;

IO0SET = 0x00000604;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x000007E4;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000648;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000618;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000730;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000690;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000680;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x0000063C;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000600;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000630;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000620;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000780;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x000006C4;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x00000708;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x000006C0;

delay\_led(150000);

IO0CLR = 0x00000FFF;

IO0SET = 0x000006E0;

delay\_led(150000);

IO0CLR = 0x00000FFF;

}

}

void delay\_led(unsigned long int count1)

{

while(count1 > 0) {count1--;}

}

Program 10

Interface a 4x4 keyboard and display the key code on an LCD.

#include <LPC214x.h>

void cmd(unsigned char d);

void datal(unsigned char t);

void delay (int count);

int main()

{

int i;

unsigned char name[]={"ARM\_LPC2148"};

IO0DIR=0x30403C00;

delay(100);

cmd(0x02); //cursor home command

cmd(0x01); //clear display command

cmd(0x28); //4-bit mode entry command(0x38 for 8 bit mode)

cmd(0x06); //entry mode command

cmd(0x0C); //display on cursor off command

//cmd(0xC0); //LCD bottom line display command

for (i=0;i<11;i++) // Charactor selection

{ // now 11 charactors allowed

datal(name[i]);

}

while(1);

}

void cmd(unsigned char d)

{

int a=0;

a = d | 0xFFFFFF0F; // Send lower nibble cmd

IO0CLR |= 0x00003C00; // Clear data lines

a=a<<6;

IO0CLR = 0x20400000; //Clear control lines

IO0SET = 0x10000000;

IO0SET =(IO0SET | 0x00003c00)&a;

delay(1000);

IO0CLR = 0x10000000;

a=0x0;

d=d<<4; // Send higher nibble cmd

a = d | 0xFFFFFF0F;

IO0CLR |= 0x00003C00;

a=a<<6;

IO0CLR = 0x20400000;

IO0SET = 0x10000000;

IO0SET = (IO0SET | 0x00003C00)&a;

delay(1000);

IO0CLR = 0x10000000;

}

void datal(unsigned char t)

{

int b=0;

b = t|0xFFFFFF0F; //Send lower nibble data

IO0CLR |= 0x00003C00;

b=b<<6;

IO0SET = 0x10400000;

IO0SET = (IO0SET | 0x00003C00)&b;

delay(1000);

IO0CLR = 0x10000000;

b=0x0;

t=t<<4;

b=t|0xFFFFFF0F; //Send higher nibble data

IO0CLR |= 0x00003C00;

b=b<<6;

IO0SET = 0x10400000;

IO0SET = (IO0SET | 0x00003C00)&b;

delay(1000);

IO0CLR = 0x10000000;

}

void delay(int count) //Delay routine

{

int j=0, i=0;

for (j=0;j<count;j++)

for (i=0;i<35;i++);

}

NOTE: Please add scatter file for LCD which is available in CD content.