#include <LPC21xx.H> /\* LPC21xx definitions \*/

#include "lcd4bit.h"

void init\_adc(){

PINSEL1 |= 0X01000000;

ADCR = 0X00200602;

}

void delay(int n) /\* generates one milisecond delay \*/

{

int i,j;

for (i=1; i<=n; i++)

for(j=0; j<=10000; j++);

}

int read\_adc(void){

int val;

ADCR |= 0x01000000; /\* Start A/D Conversion \*/

do

{

val = ADDR; /\* Read A/D Data Register \*/

}

while (!(val & 0x80000000)); /\* Wait for end of A/D Conversion \*/

ADCR &= ~0x01000000; /\* Stop A/D Conversion \*/

val >>=6;

val= val & 0x3FF;

return(val);

}

int main(void)

{

int dat,i=0;

char buf[5];

init\_adc();

init\_lcd();

lcd\_command(0x01);

lcd\_command(0x80);

printlcd("ADC Interfacing");

lcd\_command(0xC0);

printlcd("with LPC2148");

delay(2000);

lcd\_command(0x01);

lcd\_command(0x80);

printlcd("Developed By:");

lcd\_command(0xC0);

printlcd("Dishant Shah");

delay(2000);

lcd\_command(0x01);

lcd\_command(0x80);

printlcd(" EMERTECH ELE. ");

lcd\_command(0xC0);

printlcd("SYSTEMS,Vadodara");

delay(3000);

lcd\_command(0x01);

lcd\_command(0x80);

printlcd("Digital Value");

lcd\_command(0xC0);

while(1)

{

Delay(1000000);

lcd\_command(0xC0);

dat = read\_adc();

i=0;

while(dat>0)

{

buf[i]=dat%10;

dat=dat/10;

i++;

}

while(--i >= 0){lcd\_data(buf[i]+'0');

}

delay(10);

lcd\_data(' ');

lcd\_data(' ');

lcd\_data(' ');

lcd\_data(' ');

lcd\_data(' ');

}

}

LCD4bit.c

#include <LPC21xx.h>

#include "lcd4bit.h"

void Delay(unsigned long b){

while (--b!=0);

}

void write\_command(int cmd) {

IO1CLR |= 0x00f00000; /\* Clear D4-D7 \*/

IO1CLR |= 0x00040000; /\* Read/Write = 0 \*/

IO1CLR |= 0X00020000; /\* Register Select = 0,Command \*/

IO1SET |= 0x00f00000 & cmd; /\* Set D4-D7 \*/

IO1SET |= 0X00080000; /\* Enable = 1 \*/

Delay(30000);

IO1CLR |= 0x00080000; /\* set E to low \*/

}

void write\_data(int dat) {

IO1CLR |= 0x00f00000; /\* Clear D4-D7 \*/

IO1CLR |= 0x00040000; /\* Read/Write = 0 \*/

IO1SET |= 0X00020000; /\* Register Select = 1,Data \*/

IO1SET |= 0x00f00000 & dat; /\* Set D4-D7 \*/

IO1SET |= 0X00080000; /\* Enable = 1 \*/

Delay(30000); //delay ~2ms

IO1CLR |= 0x00080000; /\* Set E to low \*/

}

void lcd\_data(char dat){

write\_data(dat << 16);

write\_data(dat << 20);

}

void lcd\_command(char cmd){

write\_command(cmd << 16);

write\_command(cmd << 20);

}

void printlcd(char \*CPtr){

while(\*CPtr != '\0') {

lcd\_data(\*CPtr);

CPtr++;

Delay(20000);

}

}

void init\_lcd(void) {

IO1DIR |= 0x00FE0000;

Delay(200000) ;

write\_command(0x30 << 16);

Delay(100000);

write\_command(0x30 << 16);

Delay(100000);

write\_command(0x30 << 16);

Delay(100000);

write\_command(0x20 << 16);

lcd\_command(0x01); /\* clear display \*/

lcd\_command(0x06); /\* auto address inc \*/

lcd\_command(0x0c); /\* cursor off \*/

lcd\_command(0x80); /\* first location \*/

}