```
#include <LPC213x.h>
#define LCD (0xff<<8)
#define RS (1<<16)
#define EN (1<<18)
#define CS1 (1<<19)
#define CS2 (1<<20)
#define RST (1<<21)
void img(const unsigned char *ip); // function to print data on lcd
/* 128x64 image into bit form*/
const unsigned char diems[1024] =
{
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
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,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xFF,0x00,0x00,0x00,0x00,0x00
,
0x00,0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0x38,0x38,0x38,0x38,0x30,0xF0,0xF0,0xF0,0xF
0,
0xE0,0xC0,0x00,0x00,0x00,0x00,0xF8,0xF8,0xF8,0xF8,0xF8,0xF0,0x00,0x00,0x00,0x0
0,
0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0xB8,0xB8,0xB8,0xB8,0xB8,0xB8,0xB8,0xB8,0x38,0x
10,
0x00,0x00,0x00,0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0xE0,0x80,0x00,0x80,0xE
0,
0xF0,0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0xF8,0x10,0x00,0x00,0x00,0xE0,0xF0,0xF0,0x
F0,0xF8,0xF8,0xD8,0x98,0x98,0x98,0xB8,0xB0,0xB0,0xB0,0x30,0x20,0x00,0x00,0x00,0x
00,
0x00,0x00,0xFF,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xFF,0x00,0x00,0x00,0x00,0x00
,
0x00,0x1F,0x1F,0x1F,0x1F,0x1F,0x1F,0x1C,0x1C,0x1C,0x1C,0x0C,0x0F,0x0F,0x0F,0
x0F,
0x07,0x03,0x00,0x00,0x00,0x00,0x1F,0x1F,0x1F,0x1F,0x1F,0x0F,0x00,0x00,0x00,0x0
0,
0x1F,0x1F,0x1F,0x1F,0x1F,0x1F,0x1D,0x1D,0x1D,0x1D,0x1D,0x1D,0x1D,0x1D,0x1C,
0x08,
0x00,0x00,0x00,0x1F,0x1F,0x1F,0x1F,0x1F,0x00,0x03,0x0F,0x1F,0x1F,0x1F,0x1F,0x0
F,
0x07,0x01,0x00,0x1F,0x1F,0x1F,0x1F,0x1F,0x08,0x00,0x00,0x04,0x0E,0x0C,0x0C,0x
0D,
0x1D,0x1D,0x19,0x19,0x19,0x19,0x1F,0x1F,0x0F,0x0F,0x0F,0x07,0x00,0x00,0x00,0x0
0,
0x00,0x00,0xFF,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
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,
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,
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,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00
};
void delay(unsigned int x,int y)
{
unsigned int i,j;
for(i=0;i<x;i++)
for(j=0;j<y;j++);
}
void lcd_display(unsigned int data)
{
IO0CLR=(RS|EN|LCD);
```

```
IO0SET=(data <<8);
IO0SET=RS;
IO0SET=EN;
delay(10,10);
IO0CLR=EN;
delay(10,10);
}
void cmd(unsigned char cmd)
{
IO0CLR=(RS|EN|LCD);
IO0SET=(cmd<<8);
IO0CLR=RS;
IO0SET=EN;
delay(10,10);
IO0CLR=EN;
delay(10,10);
}
void lcd_ini()
{
IO0SET=RST;
IO0DIR=0X003FFF00;
cmd(0X3E); //Display Off (Display on off instruction 0011 1110)
cmd(0X40); // Set Y address i.e. (column=0)
cmd(0Xb8); // Set X address i.e. (Page=0)
cmd(0X3F); //Display ON (Display on off instruction 0011 1111)
}
void lcd_str(unsigned char *str)
{
while(*str!='\0')
{
lcd_display(*str);
str++;
}
}
void img(const unsigned char *ip) // function to display image on lcd
{
int Page;
int Column;
for ( Page = 0; Page < 8; Page++)
{
IO0CLR=CS1; //left halve portion is selected
IO0SET=CS2;
cmd(0x40); //Set Y address(column=0)increased by 1 autdiemsatically by read or write
operations
cmd(0xb8 | Page); //Increment page address (oxb8 is address of page 0)
for ( Column = 0; Column < 128; Column++)
                        {
if (Column == 64)
```

```
{
IO0SET=CS1; // right halve portion is selected
IO0CLR=CS2;;
cmd(0x40); //Set Y address(column=0)
cmd(0xb8 | Page); //Increment page address
}
lcd_display(*ip++);
}
}
}
int main()
{
lcd_ini(); // initilization of grafical lcd
img(diems); // loading picture on grafical lcd
while(1); // infinite loop
return 0;
}
```