Displaying Images and Icons on GLCD

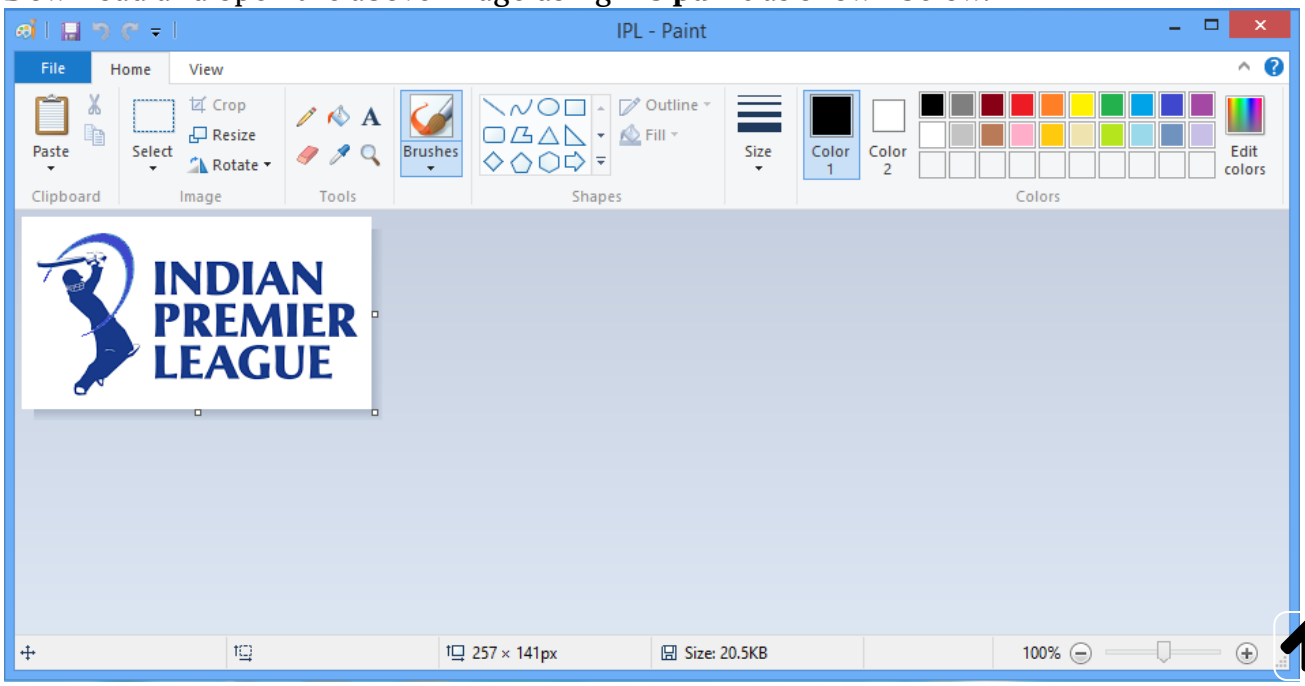
Contents

In this tutorial, we will see how to display the images/icons on 128x64 Monochrome GLCD. To do this we need images of 128x64 pixels, if not we have to crop/resize the higher resolution images. This can be done using photoshop or some other photo editors. We will be using the windows built in tool **PAINT**.

Image Resize

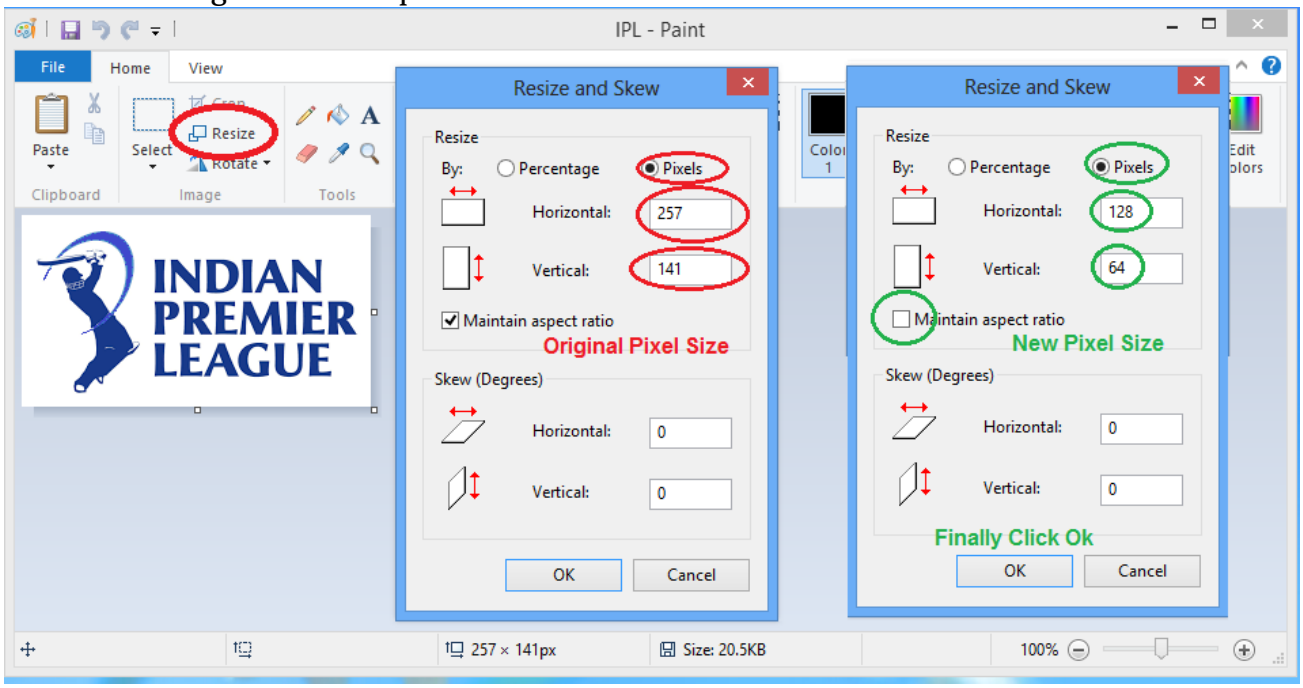
Lets take a high resolution image and crop it to 128x64 and then generate the bitmap.

(/wiki/File:IPL.png)
Download and open the above image using **ms paint** as shown below.



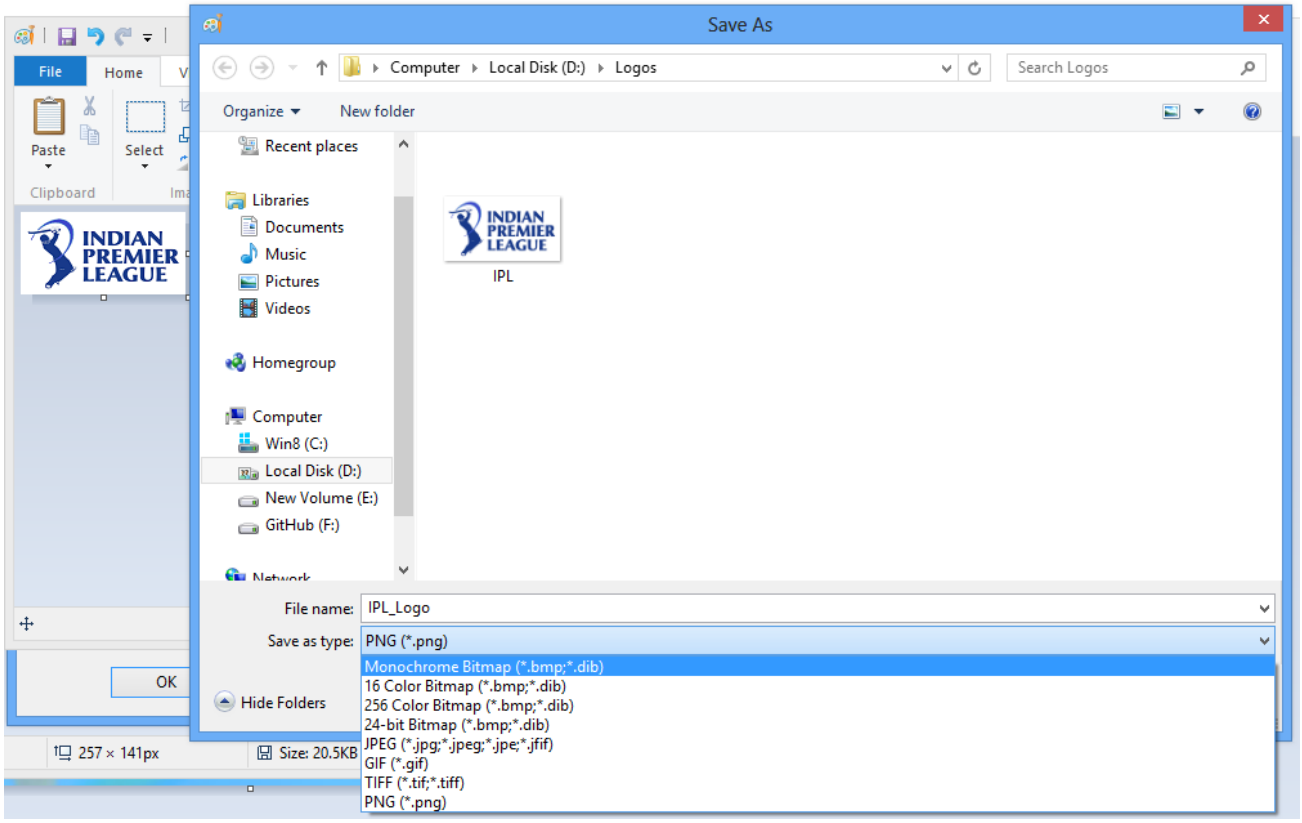
(/wiki/File:Glcd_Logo_0.PNG)

Resize the image to 128x64 pixels.

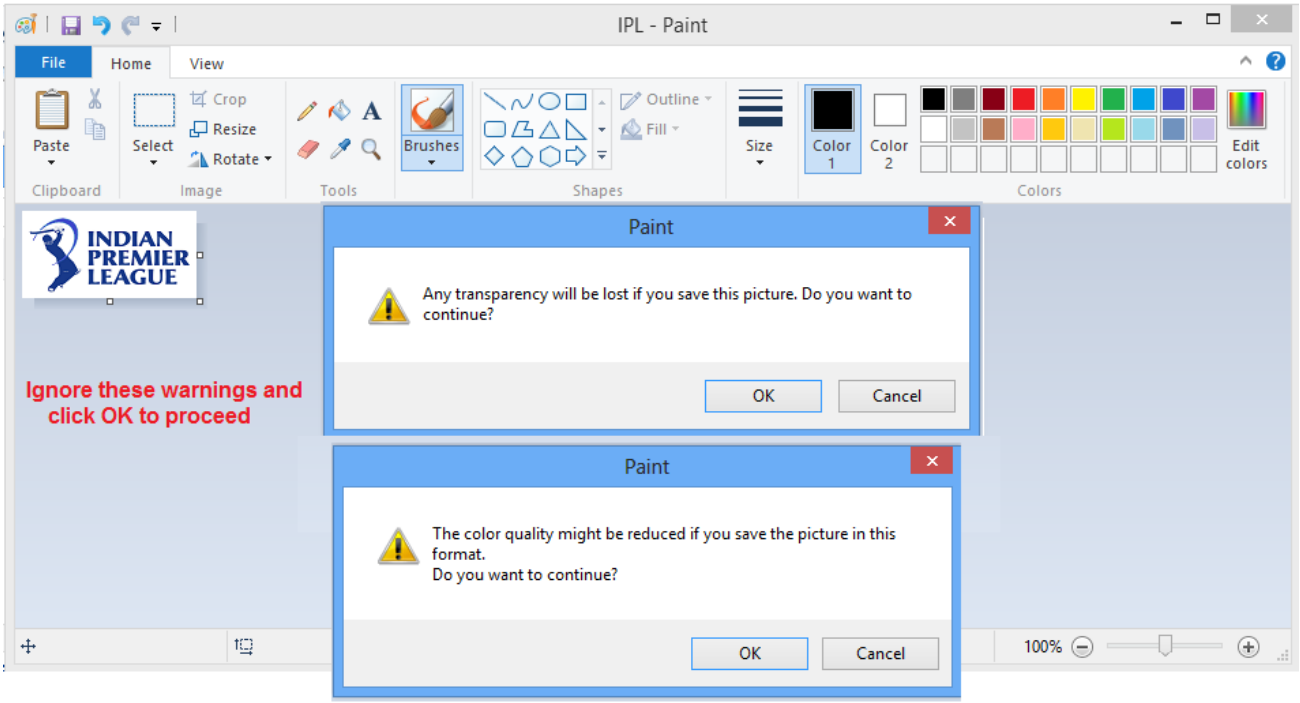


(/wiki/File:Glcd_Logo_1.PNG)

Save the image in monochrome bitmap format **.bmp** as shown below.



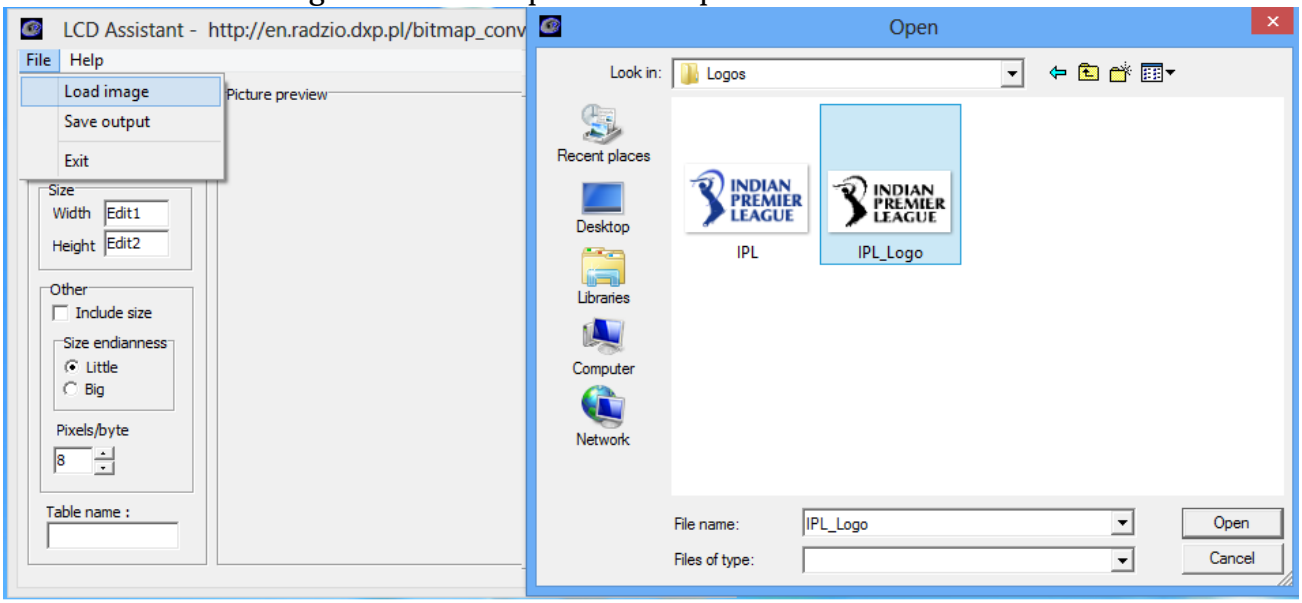
(/wiki/File:Glcd_Logo_2.PNG)



(/wiki/File:Glcd_Logo_3.png)

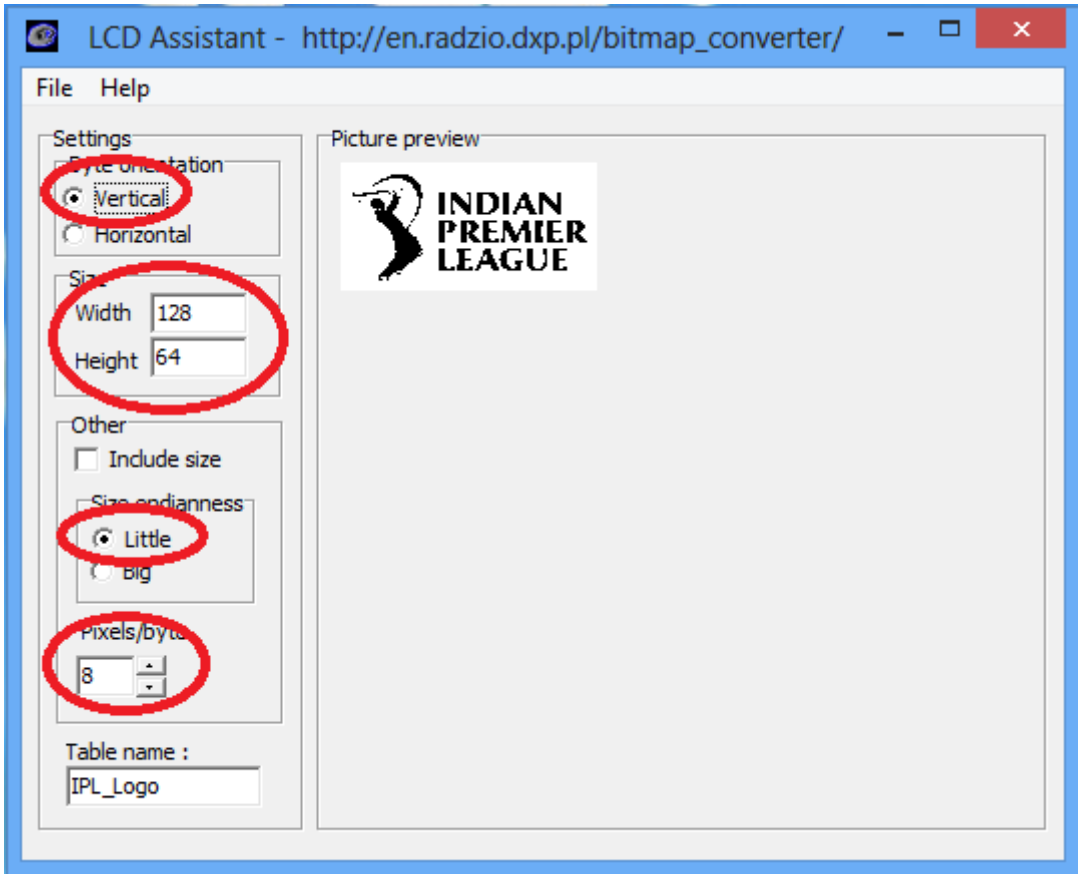
Bitmap Using Lcd Assistant

Now run the LCD Assistant (https://www.exploreembedded.com/wiki/images/c/c5/LCDAssistant.zip) software and load the monochrome image saved in the previous step.



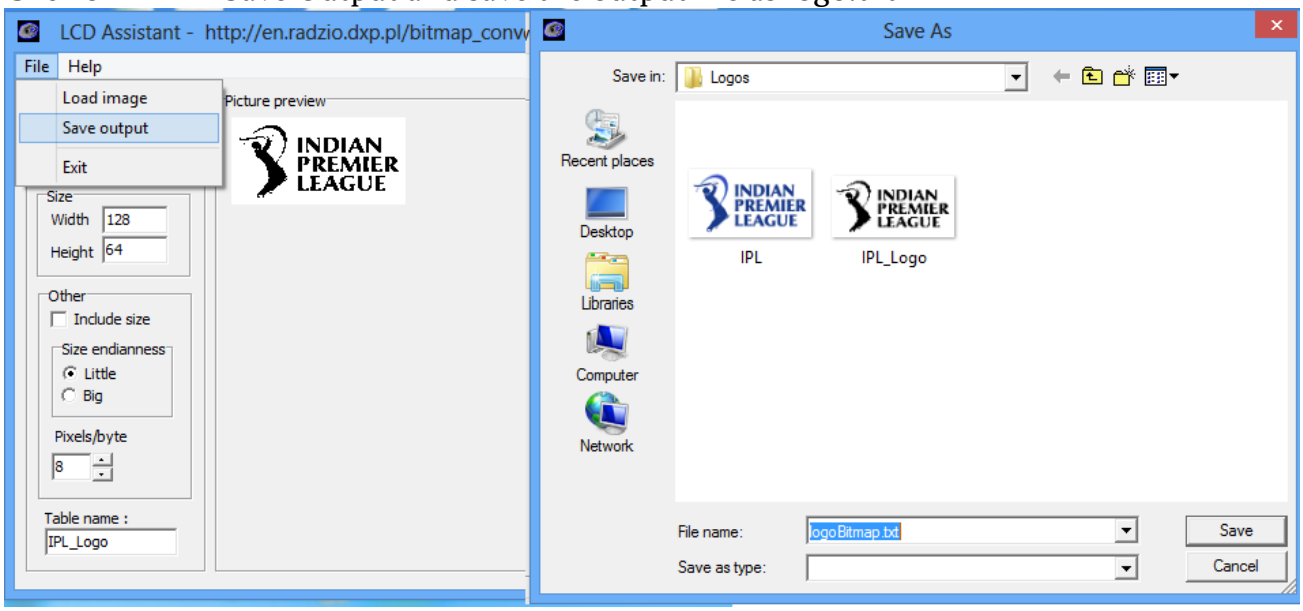
(/wiki/File:Glcd_Logo_4.png)

Do the setting as shown in the image.



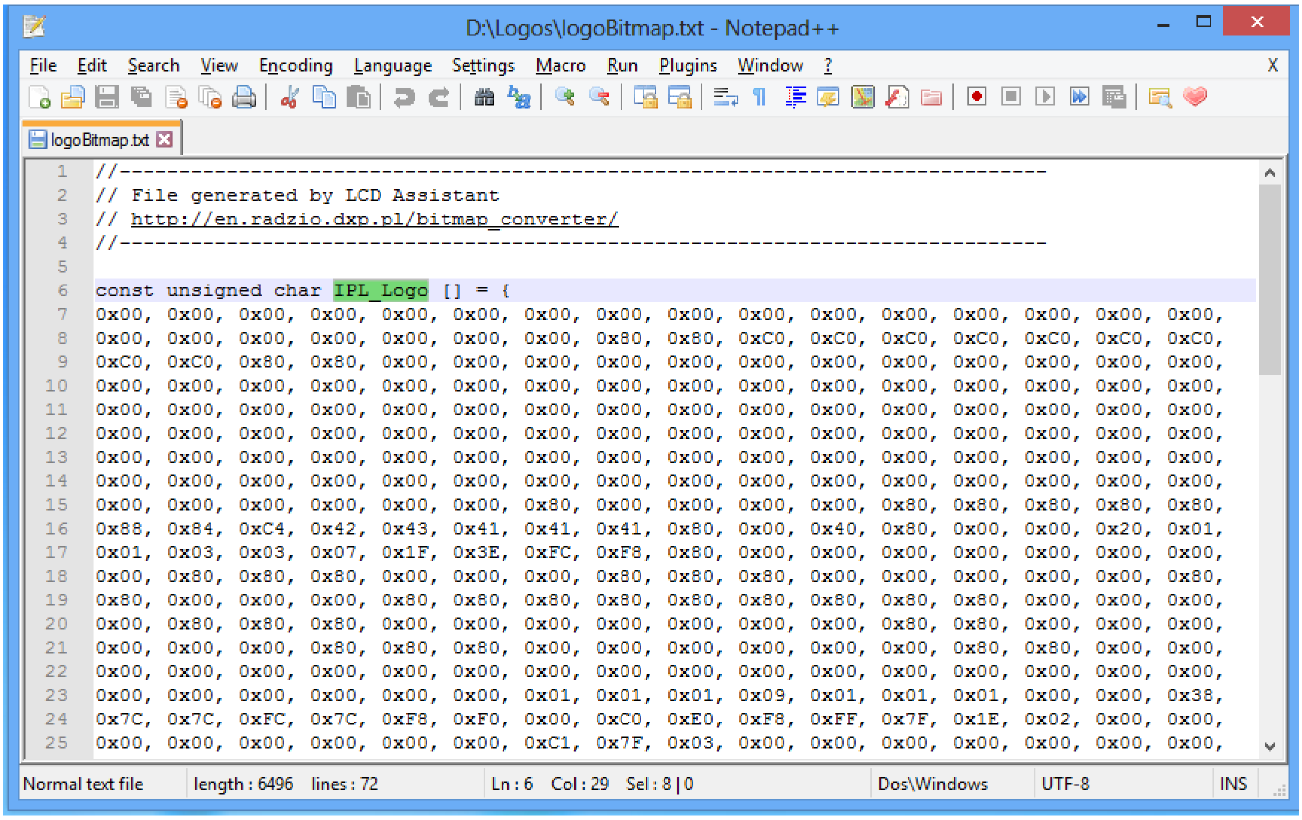
(/wiki/File:Glcd_Logo_5.png)

Click on FILE->Save Output and save the output file as logo.txt



(/wiki/File:Glcd_Logo_6.png)

The bitmap for the image will be saved in an array as shown in the below image.




```
//--------------------------------------------------------------------------------
// File generated by LCD Assistant
// http://en.radzio.dxp.pl/bitmap_converter/
//--------------------------------------------------------------------------------

const unsigned char IPL_Logo [] = {
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0xC0, 0xC0, 0xC0, 0xC0, 0xC0, 0xC0, 0xC0,
0xC0, 0xC0, 0x80, 0x80, 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, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x80, 0x80,
0x88, 0x84, 0xC4, 0x42, 0x43, 0x41, 0x41, 0x41, 0x80, 0x00, 0x40, 0x80, 0x00, 0x00, 0x20, 0x01,
0x01, 0x03, 0x03, 0x07, 0x1F, 0x3E, 0xFC, 0xF8, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80,
0x80, 0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00,
0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x01, 0x01, 0x09, 0x01, 0x01, 0x01, 0x00, 0x00, 0x38,
0x7C, 0x7C, 0xFC, 0x7C, 0xF8, 0xF0, 0x00, 0xC0, 0xE0, 0xF8, 0xFF, 0x7F, 0x1E, 0x02, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xC1, 0x7F, 0x03, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
```

(/wiki/File:Glcd_Logo_7.PNG)

Use this array in your code for displaying the image/logo on the GLCD.

Code

Below is the complete code with the bit map array.
Check glcd.h file for pin connection.

```
#include "glcd.h"
#include "delay.h"

const unsigned char IPL_Logo [] = {
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0xC0, 0xC0, 0xC0, 0xC0, 0xC0, 0xC0, 0
0xC0, 0xC0, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x80, 0
0x88, 0x84, 0xC4, 0x42, 0x43, 0x41, 0x41, 0x41, 0x80, 0x00, 0x40, 0x80, 0x00, 0x00, 0x20, 0
0x01, 0x03, 0x03, 0x07, 0x1F, 0x3E, 0xFC, 0xF8, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x80, 0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x80, 0x00, 0x00, 0
0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x80, 0x80, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x80, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
```

21	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x01, 0x01, 0x09, 0x01, 0x01, 0x01, 0x00, 0x00, 0
22	0x7C, 0x7C, 0xFC, 0x7C, 0xF8, 0xF0, 0x00, 0xC0, 0xE0, 0xF8, 0xFF, 0x7F, 0x1E, 0x02, 0x00, 0
23	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xC1, 0x7F, 0x03, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
24	0x00, 0xFF, 0xFF, 0xFF, 0x00, 0x00, 0x00, 0xFF, 0x07, 0x0F, 0x1F, 0x3E, 0x7C, 0xF8, 0xF0, 0
25	0xFF, 0x00, 0x00, 0x00, 0xFF, 0xFF, 0xFF, 0x00, 0x00, 0x00, 0x01, 0x83, 0xFF, 0xFF, 0x7E, 0
26	0x00, 0xFF, 0xFF, 0xFF, 0x00, 0x00, 0x00, 0xC0, 0xF0, 0x7C, 0x47, 0x47, 0x7F, 0xFF, 0xF8, 0
27	0x80, 0x00, 0x00, 0xFF, 0xFF, 0x07, 0x0F, 0x1E, 0x3C, 0x78, 0xF0, 0xE0, 0xFF, 0xFF, 0x00, 0
28	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
29	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
30	0x00, 0x03, 0x1F, 0x3F, 0x3F, 0x7F, 0xFF, 0xFF, 0xFF, 0xFF, 0xFC, 0xF8, 0xF0, 0xE0, 0xC0, 0
31	0x00, 0x00, 0x80, 0x20, 0x10, 0x06, 0x03, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
32	0x00, 0xE3, 0xE3, 0xE3, 0x20, 0x20, 0xE0, 0xE3, 0xC3, 0x80, 0x00, 0x00, 0xE0, 0xE0, 0xE1, 0
33	0x63, 0xE0, 0xE0, 0xC0, 0x83, 0x03, 0x03, 0xE2, 0xE2, 0xE2, 0x23, 0x21, 0x21, 0x20, 0x00, 0
34	0x00, 0xE3, 0xE3, 0xE3, 0xC0, 0x00, 0x03, 0x03, 0x00, 0x00, 0x80, 0xE0, 0xE0, 0xE0, 0x03, 0
35	0x03, 0xE2, 0xE0, 0xE3, 0xE3, 0x00, 0x00, 0xE0, 0xE0, 0xE0, 0x20, 0x21, 0x23, 0x23, 0x00, 0
36	0x00, 0xE0, 0xE0, 0xE0, 0x20, 0x60, 0xE0, 0xE0, 0xC0, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0
37	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
38	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x03, 0x0F, 0x7F, 0xFF, 0xFF, 0xFF, 0xFF, 0
39	0xFE, 0xFF, 0xF8, 0xF0, 0xE0, 0xE0, 0x80, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
40	0x00, 0xFF, 0xFF, 0xFF, 0x00, 0x04, 0x07, 0x07, 0x03, 0x00, 0x00, 0x00, 0xFF, 0xFF, 0xFF, 0
41	0x3C, 0x7F, 0xF7, 0xE3, 0xC1, 0x80, 0x00, 0xFF, 0xFF, 0xFF, 0xC6, 0x84, 0x84, 0xC4, 0xC0, 0
42	0xC0, 0xFF, 0x03, 0x07, 0x1F, 0x7F, 0xFC, 0xF0, 0x78, 0x0E, 0x03, 0x03, 0xFF, 0xFF, 0xFC, 0
43	0x00, 0xFF, 0xFF, 0xFF, 0xE0, 0x00, 0x00, 0xFF, 0xFF, 0xFF, 0xC4, 0x84, 0x84, 0xC4, 0xC0, 0
44	0x00, 0xFF, 0xFF, 0xFF, 0x08, 0x3C, 0x7F, 0xF7, 0xE3, 0xC1, 0x80, 0x00, 0x00, 0x00, 0x00, 0
45	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
46	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xEF, 0xFF, 0xFF, 0xFF, 0
47	0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x7F, 0x5E, 0x28, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
48	0x00, 0xF8, 0xF8, 0xF8, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x18, 0xF8, 0xF8, 0xF8, 0x08, 0
49	0x08, 0x00, 0x00, 0x00, 0x00, 0x00, 0x80, 0x70, 0x38, 0xF8, 0xF8, 0xC0, 0x00, 0x00, 0x00, 0
50	0xE0, 0xF0, 0xF0, 0x18, 0x08, 0x08, 0x08, 0x08, 0x08, 0x18, 0x00, 0x00, 0x00, 0xF8, 0xF8, 0
51	0x00, 0x00, 0x00, 0x00, 0x00, 0x38, 0xF8, 0x00, 0x00, 0x00, 0xF8, 0xF8, 0xF8, 0x08, 0x08, 0
52	0x08, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
53	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
54	0x00, 0x00, 0x00, 0x00, 0x80, 0xC0, 0xE0, 0xF0, 0xFC, 0xFE, 0x7F, 0x7F, 0xBF, 0xBF, 0x3F, 0
55	0x0F, 0x07, 0x03, 0x03, 0x01, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
56	0x00, 0x3F, 0x3F, 0x3F, 0x30, 0x20, 0x20, 0x30, 0x30, 0x00, 0x38, 0x3F, 0x3F, 0x3F, 0x21, 0
57	0x31, 0x30, 0x00, 0x20, 0x38, 0x1E, 0x07, 0x06, 0x06, 0x07, 0x07, 0x1F, 0x3F, 0x3C, 0x30, 0
58	0x0F, 0x1F, 0x1F, 0x38, 0x30, 0x20, 0x20, 0x36, 0x3E, 0x3E, 0x02, 0x00, 0x00, 0x0F, 0x1F, 0
59	0x30, 0x20, 0x20, 0x20, 0x30, 0x1C, 0x0F, 0x00, 0x00, 0x00, 0x3F, 0x3F, 0x3F, 0x21, 0x21, 0
60	0x30, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
61	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
62	0x00, 0x00, 0x00, 0x07, 0x05, 0x01, 0x01, 0x07, 0x01, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
63	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
64	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
65	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0

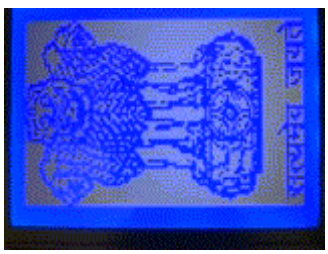
```
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0
};

/* start the main program */
void main()
{
    GLCD_Init();
    GLCD_DisplayLogo(IPL_Logo);

    while(1);
}
```

lalBagwan/08799669325b6d3476f6e629248fea4f/raw/68c9fafea636de2088704e375491e00d05a24b27/gcldLogo_0.c)
gcldLogo_0.c (https://gist.github.com/SaheblalBagwan/08799669325b6d3476f6e629248fea4f#file-gcldlogo_0-c)
hosted with ❤ by **GitHub (https://github.com)**

(/wiki/File:Glcd_LogoDisplay.png)



(/wiki/File:0GLCD_Logo_Display.gif)

Downloads

Download the complete project folder from this link: Hardware design Files and Code Library (https://github.com/ExploreEmbedded/Pic16f877a_ExploreUltraPicDevKit/archive/master.zip)
LCD Assistant software (https://www.exploreembedded.com/wiki/images/c/c5/LCDAssistant.zip).

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GLCD KS108 (/wiki/Category:GLCD_KS108)