Bonezegei ILI9341 : Arduino Library for TFT LCD

Author : Jofel Batutay

Abstract

Bonezegei_ILI9341 and lightweight Arduino library for the ILI9341 TFT LCD module. The library provides basic functions for drawing pixels, lines, rectangles, circles, triangles, text and bitmaps on the LCD screen. The library is compatible with ESP32 that use the SPI interface. The library is easy to use and requires minimal memory and processing resources. Follow the installation steps at https://bonezegei.com on how to install bonezegei libraries on Arduino IDE (Batutay, 2023).

Code Examples

The code snippet shows how to initialize the display, clear the screen, draw some text and shapes, and update the display. The code also demonstrates how to use different fonts and colors from the library. The paragraph explains the purpose and functionality of each line of code in a clear and concise way.

1. Basic Usage : Fonts and Shapes

```
/*
  Author: Jofel Batutay
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  Basic Example for ILI9341
  This library only support 18bit color format (0xRRGGBB) example RED = 0xFF0000,
BLUE = 0x0000FF
  The LCD is Connected to the VSPI of ESP32
  ------------------------
  |  LCD PIN   |  ESP32  |
  | MOSI       |   23    |
  | SCK        |   18    |
  | MISO       |   19    | Optional ( not Necessarily Connected to the LCD)
  | CS         |   4     | Can be Assign to other pin
  | RST        |   16    | Can be Assign to other pin
  | DC         |   17    | Can be Assign to other pin
  ------------------------
    LED of the LCD can be connected to the 3.3V with 100 Ohm resitor
*/


#include <Bonezegei_ILI9341.h>

#define LCD_DC 17
#define LCD_CS 4
#define LCD_RST 16
Bonezegei_ILI9341 lcd(LCD_RST, LCD_CS, LCD_DC);  //Initialize the LCD

void setup() {
  lcd.begin();
  delay(10);
```

```
  lcd.drawRectangle(10, 10, 110, 60, 0xFF0000);  //Draw Red Rectangle
  delay(2000);
  lcd.drawFilledRectangle(10, 10, 110, 60, 0xFF0000);  //Draw Red Fill Rectangle
  lcd.drawText(20, 20, "Bonzegei", COLOR_WHITE);       //Draw Text (Dafault Font
is VERDANA 12)
  delay(2000);
  lcd.clear(0xFFFFFF);  //Fill The Screen With Color White

  lcd.setFont(ARIAL_8);                    //Set Font to Arial 8px
  lcd.drawText(10, 20, "Arial 8 ", 0x0);  //Draw text

  lcd.setFont(ARIAL_10);  //Set Font to Arial 10px
  lcd.drawText(10, 40, "Arial 10  ", 0x0);

  lcd.setFont(ARIAL_11);  //Set Font to Arial 11px
  lcd.drawText(10, 60, "Arial 11 ; ", 0x0);

  lcd.setFont(VERDANA_12);  //Set Font to Verdana 12
  lcd.drawText(10, 80, "VERDANA 12 ", 0x0);

  lcd.setFont(VERDANA_BOLD_12);  //Set Font to Verdana 12 Bold
  lcd.drawText(10, 100, "VERDANA 12 BOLD ", 0x0);

  lcd.setFont(UBUNTU_12);  //Set Font to Ubuntu 12
  lcd.drawText(10, 120, "UBUNTU 12 ", 0x0);

  lcd.setFont(UBUNTU_BOLD_12);  //Set Font to Ubuntu 12 Bold
  lcd.drawText(10, 140, "UBUNTU BOLD 12 ", 0x0);
  delay(5000);
}

void loop() {
  lcd.clear(COLOR_RED);
  delay(1000);
  lcd.clear(COLOR GREEN);
  delay(1000);
  lcd.clear(COLOR_BLUE);
  delay(1000);
}
```

References

Batutay, J. (2023). Arduino Library Installation on Arduino 2 IDE: Bonezegei Library. ResearchGate. https://www.researchgate.net/publication/376862516_Arduino_Library_Installation_on_Arduino_2_IDE_Bonezegei_Library