徽标

描述已自动生成

Electronic/Signal Project（APP）

Journal

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**2023/10/18**

**TO DO：**

* **1. Explain what is V cycle.**

**SOLUTION:**

1. The V-cycle, often associated with software development, is a structured model that divides the development process into phases shaped like a "V." It begins with requirements gathering and high-level planning, proceeds through design and coding, and then ascends with various testing stages, culminating in validation and deployment. The key concept is rigorous validation and testing at each stage to ensure the final product aligns with initial requirements. This approach is known for its thoroughness and suitability for projects with well-defined requirements and minimal expected changes.

**2023/10/25**

**TO DO：**

* **2. Connect a tricolor LED on ports of the microcontroller and generate the following colors: BLUE – RED – GREEN – YELLOW**

a. Measure the current inside the LED when they are ON. Explain the result with a theoretical analysis.

b. What is the maximum current provided by a digital port of the microcontroller at level 1 and at level 0. (Measure it and find the theoretical value inside the documentation).

* **6. You can access to the Bluetooth link when using Serial1.xxx instead of Serial.xxx. But you have to pair the Bluetooth link of your board with the computer before.**

a. Display the values of question 2.a via the Bluetooth link.

b. Download terminal emulator in your phone and display the value of question 2.a on it.

**SOLUTION:**

**2a. Measure the current inside the LED when they are ON. Explain the result with a theoretical analysis.**

图形用户界面, 文本, 应用程序

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Modify based on the example code to control the output voltage of different interfaces to display LEDs in different colors, as shown below:

黑色的游戏机

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**GREEN**

**Green LED (5.1mA):** The lower forward current drop allows green LEDs to achieve the desired luminosity at a lower forward current.

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**BLUE**

**Blue LED (3.8mA):** Blue LEDs can produce a significant amount of light even at lower currents.

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**RED**

**Red LED (10.0mA):** To produce a visible amount of light, red LEDs require a higher forward current of 10.0mA due to the higher forward voltage drop.

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**YELLOW**

**Yellow LED (15.0mA):** We use the red + green method to mix yellow, so the yellow excitation current is equal to the sum of the red and green currents (within the error range).

**2b. What is the maximum current provided by a digital port of the microcontroller at level 1 and at level 0. (Measure it and find the theoretical value inside the documentation).**黑色的游戏机

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**Green LED (5.1mA): When the voltage is at the highest level (HIGH), 5.1 mA current is supplied to the green LED from the digital port.**

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**Blue LED (3.8mA):** When the voltage is at the highest level (HIGH), 3.8 mA current is supplied to the green LED from the digital port.

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**Red LED (10.0mA):** When the voltage is at the highest level (HIGH), 10 mA current is supplied to the green LED from the digital port.

文本, 信件

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**2023/10/26**

**TO DO：**

* **7. Sold the OLED display**

a. Use the given library to display messages on it.

b. Display a logo on the OLED display.

**SOLUTION:**

**7a. Use the given library to display messages on it.**

电子器材

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**7b. Display a logo on the OLED display.**

Convert the team LOGO icon to 128\*64 size, and then converted to encoding.

图形用户界面

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Replace the code into the sample file” iseplogo128.h”, and then run in PUTTY.

图形用户界面, 文本

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Complete display on screen.

电子器材

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