

FreeRTOS - Newlib Reentrant

Reentrancy is an attribute of a piece of code and basically means it can be re-entered by another execution flow, for example by an interrupt or by another task or thread. GNU ARM Embedded Toolchain distributions include a non-polluting reduced-size...

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FreeRTOS - Tasks

Tasks are jobs will be done in an application. These special jobs are managed by scheduler with task's stack, priority.

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Raspberry Pi - Install Ubuntu

Official OS on Raspberry Pi is a Debian distro which is lightweight and more stable but slowly updated. Running Ubuntu on Raspberry Pi gives user a richer user experience and up-to-date software. Moreover, Ubuntu is the main OS that ROS natively supports.

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Dual Boot with Ubuntu and Windows

Dual booting Linux with Windows is one of the most convenient way of enjoying the two operating systems on the same computer. You have both OS installed on the disk, on real hardware and when you power on your system, you can choose which operating...

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FreeRTOS - Interrupt

FreeRTOS only handles 3 interrupts which are SVC, PendSV, and SysTick. All remaining interrupts are handled by application, and they are not blocked by tasks. However, there are some rules have to be followed in order to not mess up the task stacks...

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FreeRTOS - Dynamic Memory Management

Creating RTOS objects dynamically has the benefit of greater simplicity, and the potential to minimize the application's maximum RAM usage. FreeRTOS offers several heap management schemes to manage memory allocation in different application types.

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FreeRTOS - Overview

Using RTOS on MCU is method to deal with concurrent tasks which need to be handled in real-time without delay. A task is a piece of code that can be scheduled by OS scheduler and dedicated for a specific functionality. Tasks can have different...

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FreeRTOS - SysTick and Delay

SysTick is mainly used for delay function in non-RTOS firmware, and is used as the interrupt for RTOS scheduler. If STM32 HAL utilizes another timer as its time base, RTOS has its own right to initialize and handler SysTick. The Delay function also...

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ROS

ROS is an open-source Operating System for Robot. ROS provides libraries and tools to help software developers create robot applications. It provides hardware abstraction, device drivers, libraries, visualizers, message-passing, package management, and more.

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ROS - Quick Tutorial for Beginners

This guide is a short version of ROS Tutorial for Beginner which lists useful terms, packages, and commands for quickly understand about the basic of ROS.

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