

REAL TIME OPERATING SYSTEMS

Lesson-11:

Basic Design using an Real Time Operating System

1. Basic Design

RTOS

- An embedded system with a single CPU can run only one process at an instance.
- The process at any instance may either be an ISR, or kernel function or task

RTOS

- Provides running the user threads in kernel space so that they execute fast.
- Provides effective handling of the ISRs, device drivers, ISTs, tasks or threads
- Disabling and enabling of interrupts in user mode critical section code
- Provides memory allocation and de-allocation functions in fixed time and blocks of memory

RTOS

- Provides for effectively scheduling and running and blocking of the tasks in cases of number of many tasks
- I/O Management with devices, files, mailboxes, pipes and sockets becomes simple using an RTOS
- provides for the uses of Semaphore (s) by the tasks or for the shared resources (cCritical sections) in a task or OS functions

RTOS

- Effective management of the multiple states of the CPU and, internal and external physical or virtual devices

Summary

We learnt

- RTOS is an OS for effective real time scheduling of the concurrent processes
- User priority allocations
- Preemptive scheduling
- Fixed memory blocks allocation and de-allocation
- IPCs

End of Lesson 11 of Chapter 8