**Real-Time Computing**

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**| |**

**Importance of Real-Time Tasks**

**Real-Time Systems |**

**| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Applications of Real-Time | |**

**Systems Hard Real-Time Soft Real-Time**

**| Tasks Tasks**

**| | |**

**Control of Experiments Tasks with Deadline Tasks with Desirable**

**Industrial Process Control (Must meet deadline) Deadline (Not mandatory)**

**Robotics |**

**Air Traffic Control Periodic Tasks Aperiodic Tasks**

**Telecommunications (Once per period T) (Deadline or time constraint)**

**Military Command and Control**

**Next-Generation Systems**

**(e.g., autonomous land rover,**

**controllers of robots with elastic joints,**

**intelligent manufacturing, space station,**

**undersea exploration)**

**| Real-Time Computing |**

**|**

**+-----------|------------|--------------|-----------------+**

**| | | | |**

**Importance Operating Real-Time Next-Generation Applications**

**of System & Processes Systems of Real-Time**

**Real-Time Scheduler and Tasks Computing**

**Computing**

**| | | |**

**| | | |**

**Control of Scheduler Real-Time Autonomous Land**

**Experiments Tasks & Rover, Robotics,**

**Deadlines Intelligent Manufacturing,**

**Space Station.**

**| Real-Time Scheduling |**

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**+---------------|-----------------+**

**| | |**

**Scheduling Survey of Classes of**

**Approaches Algorithms Algorithms**

**| | |**

**| Static Table- | | Static | | Dynamic Planning- |**

**| Driven | | Priority- | | Based |**

**| Approaches | | Driven | | Approaches |**

**| | | Preemptive | | (Feasibility at |**

**| (Static | | Approaches | | run time) |**

**| analysis of | | (Assign | |**

**| feasible | | priorities)| |**

**| schedules)**