## UNIT IV
RTOS BASED EMBEDDED SYSTEM DESIGN

4.1

A process consists of executable program (codes) , *state* of which is controlled by OS ,the *state* during running of a process represented by process-status(running, blocked ,or finished) , process structure—its data, objects and resources, and process control block (PCB).

- Runs when it is scheduled run by the OS (kernel)
- OS gives the control of the CPU on a process's request (system call).
- Runs by executing the instructions and the continuous changes of its state takes Place as the program counter (PC) changes.
- Process is that executing unit of computation , which is controlled by some process (of the OS) for a scheduling mechanism that let sit execute on the CPU and by some process at OS for a resource management mechanism that let sit use the system-system resources such as network ,file ,display or printer.

Task States
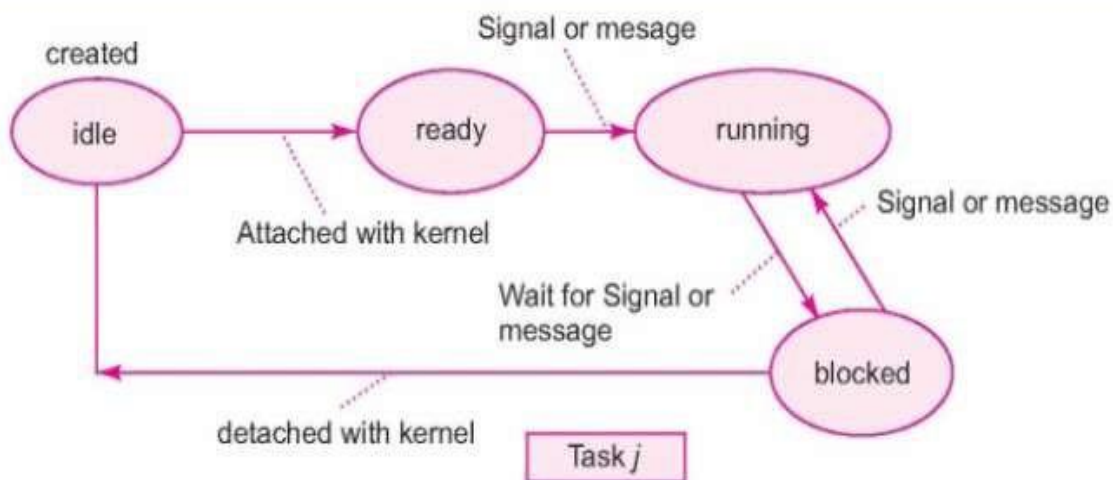
Application program can be said to consist of number of processes

Example-Mobile Phone Device embedded software
- Software highly complex.
- Number of functions , ISRs, processes threads, multiple physical and virtual device drivers, and several program objects that must be concurrently processed on a single processor.
- Voice encoding and convoluting process─the device captures the spoken words through a speaker and generates the digital signals after analog to digital conversion , the digits are encoded and convoluted using a CODEC,

- Modulating process,
- Display process,
- GUIs (graphic user interfaces),and
- Key input process─ for provisioning of the user interrupts

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