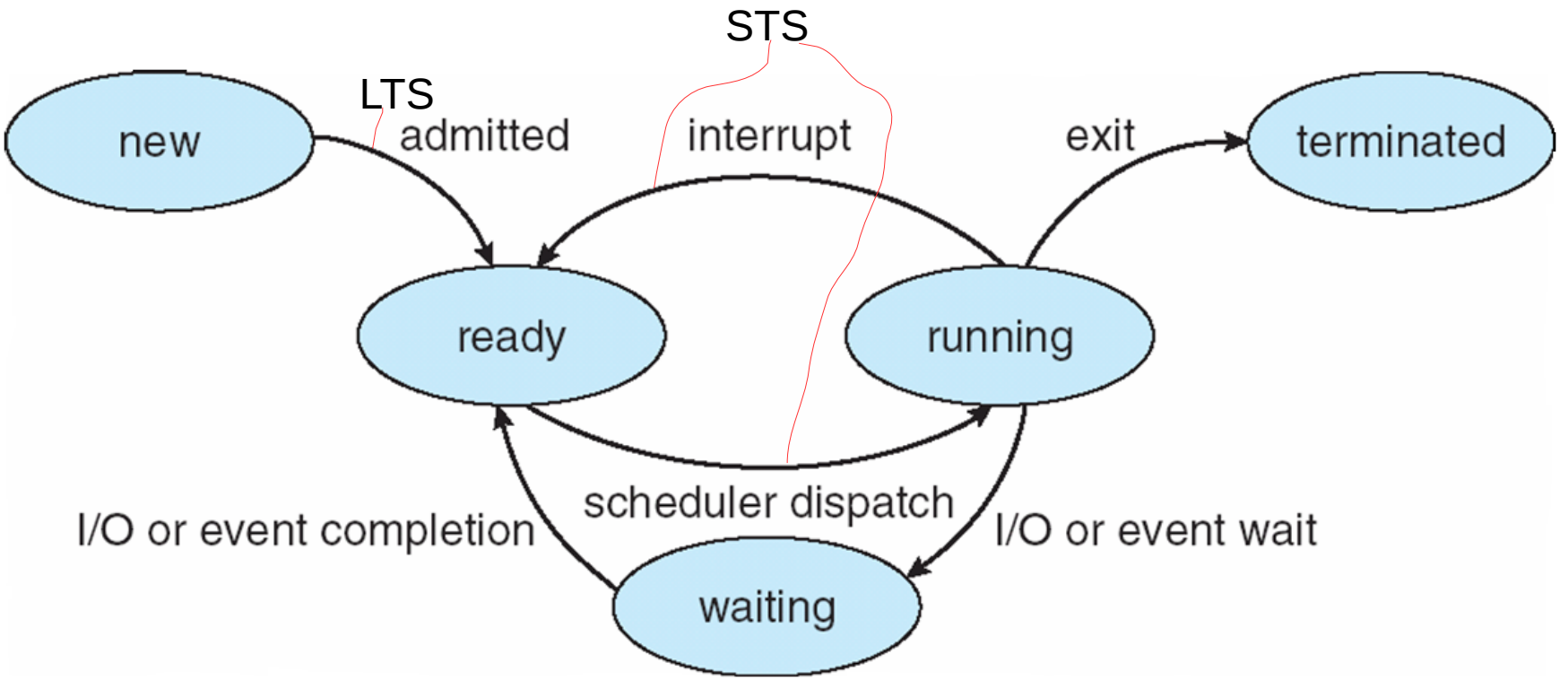
# CPU Management: Process Scheduling

23 Aug 2018

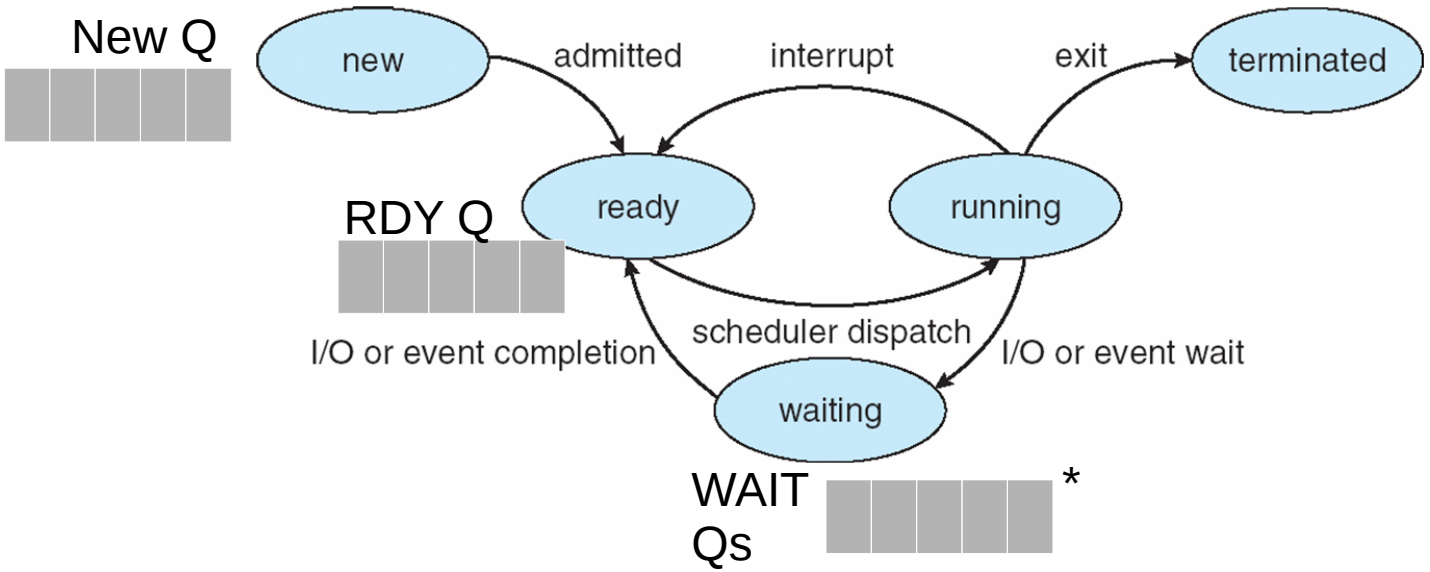
# Process State Transition Diagram




If the scheduler is non-preemptive, then the "interrupt" transition would not exist!

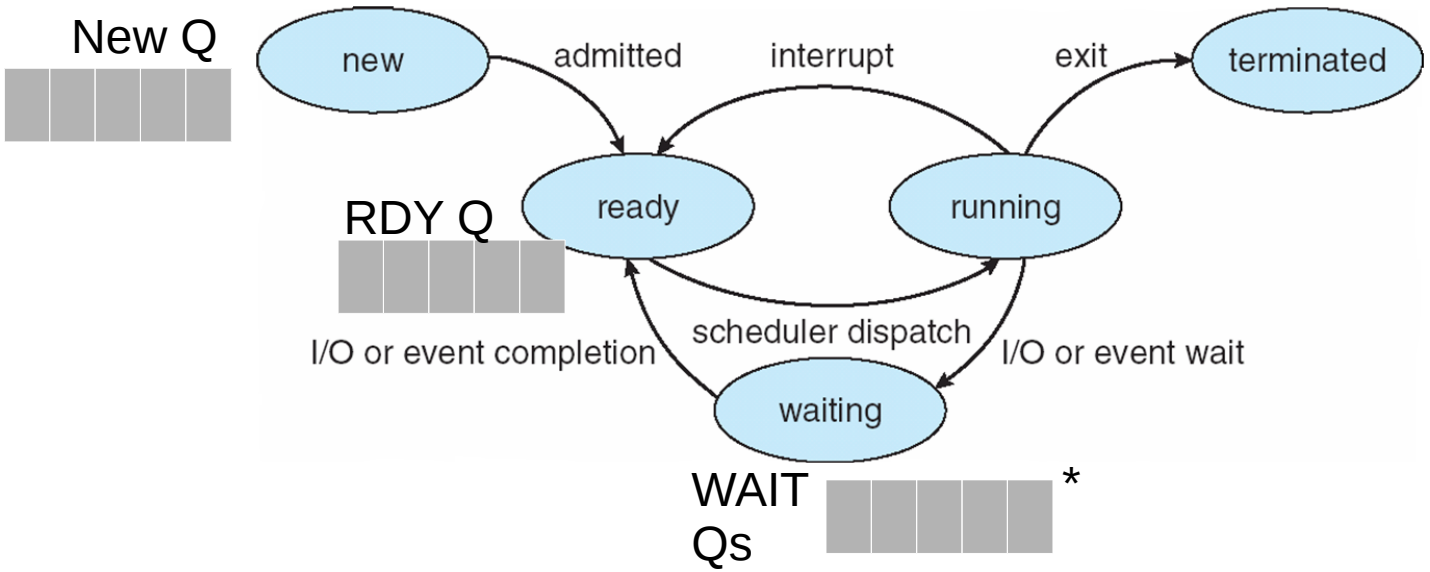
# Process Execution Cycle

- As requested by the user/s and/or syste
  - One or two or more processes can become ready
  - So there would be a READY queue of READY processes *WAITING to RUN* on the CPU
- From the READY queue, the scheduler selects the process to be RUN
  - Based on the scheduling algorithm
  - Two types: Non-Preemptive Vs Preemptive
  - Several variants: FCFS, SJF, SRJT, RR, PBS, SCS, HS, etc.



# Process Execution Cycle

- Round Robin: **RR**
- **Time Quanta:** Duration of time for which a process is allocated CPU uniterruptedly
- ON expiry of TQ, a timer interrupt occurs, which:
  - Moves the process either to I/O wait or Ready Q



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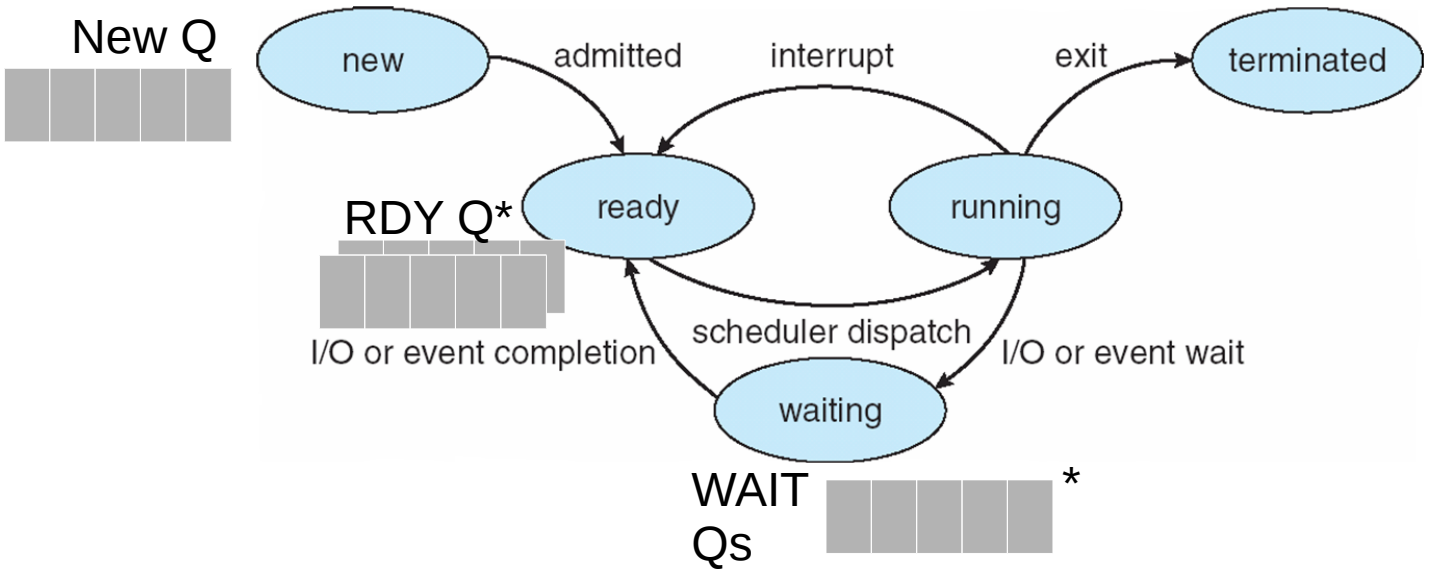

# Execution Cycle: An abstraction

- Process execution
  - involves RUNNING on the CPU (CPU Burst time)
  - if has I/O, might include I/O operation time (plus I/O waiting) (I/O-burst time)
- Processes are of two types:
  - CPU-bound processes: demand more time on CPU than on I/O op
  - I/O-bound processes: demand more time on I/O than CPU

# Priority Based Scheduling

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