

Non Goals : Starvation

Starvation is when a thread is prevented from making progress because some other thread has the resource it requires (could be CPU or a lock)

- ➡ Starvation is usually a side effect of the scheduling algorithm
 - e.g a high priority thread always prevents a low priority thread from running
- ➡ Starvation can be a side effect of synchronization (forthcoming lecture)
 - e.g constant supply of readers always blocks out writers

Scheduling Criteria

- **Throughput** – # of threads that complete per unit time
 $\# \text{ jobs/time}$ (Higher is better)
 - **Turnaround time** – time for each thread to complete
 $T_{\text{finish}} - T_{\text{start}}$ (Lower is better)
 - **Response time** – time from request to first response ()
i.e. time between waiting to ready transition and ready to running transition
 $T_{\text{response}} - T_{\text{request}}$ (Lower is better)
- ➔ Above criteria are affected by secondary criteria
- CPU utilization – %CPU fraction of time CPU doing productive work
 - Waiting time – $\text{Avg}(T_{\text{wait}})$ time each thread waits in the ready queue