

What happens when 'LDA s' is run?

1

What happens when 'STA s' is run?

2

What happens when 'ADD s' is run?

3

What happens when 'SUB s' is run?

4

What happens when 'JMP s' is run?

5

What happens when 'JGE s' is run?

6

What happens when 'JNE s' is run?

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What three steps occur during the fetch phase?

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$$[s] = ACC$$

$$ACC = [s]$$

2

1

$$ACC -= [s]$$

$$ACC += [s]$$

4

3

if $ACC \neq 0$ *then* $PC = s$

$PC = s$

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1. Use PC as address to read memory
2. Save result of read in CPU
3. Increment PC read

if $ACC \neq 0$ *then* $PC = s$

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What control signals do all registers need?

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What control signal does a multiplexer need?

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What control signals does the memory need?

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Which 3 signals control the ALU?

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What is a process?

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What is the address space?

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What is a thread?

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What is multi-threading?

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A signal to select an input

An enable signal

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add, sub & byp

Ren (read enable) and Wen (write enable)

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All memory locations the process can use.

A program in execution, the thread + address space.

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This is where we have multiple threads within the same process

A sequence of instructions that are obeyed.

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How do we make programs think they have sole use of memory?

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What are the three different approaches to engineering an OS?

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What are the three process states?

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In the diagram, what is happening at each stage?

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What is a PCB table?

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In scheduling, what do the following mean?

1. CPU burst
2. I/O burst
3. CPU bound
4. I/O bound

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What is a processes turnaround time?

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What is a processes waiting time?

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Monolithic, layered and micro-kernels.

*Use **relocation**, where we swap a program out of memory and later swap it back in.*

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1. *Process need to wait for I/O or event.*
2. *Process forcibly preempted - **in-
interrupt / relinquish CPU /
time-slice expired.***
3. *Scheduler selects process to run.*
4. *I/O or event occurs.*

Running, ready, blocked

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1. *Process executing on CPU*
2. *Process blocked, waiting for I/O*
3. *Long CPU bursts*
4. *Short CPU bursts*

Process control block, it contains all of the information needed about processes.

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The time that the process waits to run.

The time from a process being submitted to it getting completed.

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Briefly explain the first come first served scheduling algorithm.

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What is meant by pre-emptive scheduling?

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What is meant by non-pre-emptive scheduling?

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What is the fixed time amount called in non-pre-emptive processing?

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Briefly explain the shortest remaining time first scheduling algorithm.

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What is process starvation?

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In scheduling, what are static priorities?

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In scheduling, what are dynamic priorities?

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<i>Scheduling where processes run until they are terminated or blocked.</i>	<i>The first process in the ready state gets CPU time first. Once it is blocked or complete, the next process in the queue is run. Processes that require CPU time are added to the back of the queue.</i>
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<i>The 'time-slice' or 'time-quantum'.</i>	<i>Scheduling where a process can run for some fixed maximum time, once it has reached its maximum time, it is interrupted and set 'ready' and the scheduler runs the next process.</i>
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<i>When the scheduling algorithm leaves a process out for a long time, causing the process to not receive any CPU time.</i>	<i>For each newly ready process, if CPU-burst is less than the time to complete the running process then context-switch and run the new process.</i>
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<i>Priorities that are assigned by the system to achieve certain goals.</i>	<i>Priorities that are predetermined for each process.</i>
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