

FACTOR	USER LEVEL THREADS	KERNEL LEVEL THREADS
DEFINITION	THREADS MANAGED BY USER SPACE	THREADS MANAGED BY KERNEL AND OS
KERNEL INVOLVEMENT	NO	YES
CONTEXT SWITCHING	VERY FAST	SLOWER
CREATION	VERY FAST	SLOWER
SCHEDULING DONE BY	USER SPACE	KERNEL OS SCHEDULER
MULTIPROCESSOR SUPPORT	NO	YES
PORTABILITY	MORE	LESS

FACTOR	PROCESS	THREADS
DEFINITION	A PROCESS IS AN INDEPENDENT PROGRAM IN EXECUTION WITH ITS OWN MEMORY SPACE.	A THREAD IS THE SMALLEST UNIT OF EXECUTION WITHIN A PROCESS.
MEMORY SHARING	INDEPENDENT MEMORY SPACE	THREADS SHARE THE MEMORY AND RESOURCES OF THE PROCESS
INTERDEPENDENCY	PROCESSES ARE INDEPENDENT AND DO NOT SHARE RESOURCES DIRECTLY.	THREADS WITHIN THE SAME PROCESS ARE DEPENDENT ON EACH OTHER.
COMMUNICATION	INTER-PROCESS COMMUNICATION (IPC) IS REQUIRED	THREADS SHARE MEMORY, MAKING COMMUNICATION FASTER AND EASIER.
CONTEXT SWITCHING	SLOWER	FASTER
RESOURCE ALLOCATION	EACH PROCESS HAS ITS OWN CPU REGISTERS, MEMORY, AND SYSTEM RESOURCES	THREADS SHARE CPU REGISTERS AND MEMORY SPACE OF THE PARENT PROCESS.
CREATION TIME	SLOWER	FASTER
EXAMPLES	RUNNING MULTIPLE APPLICATIONS LIKE A BROWSER, VIDEO PLAYER, AND COMPILER.	MULTIPLE TABS IN A BROWSER, BACKGROUND MUSIC IN A GAME, OR SPELL-CHECKING IN A WORD PROCESSOR.

FACTOR	PROCESS SCHEDULING	PROCESS SWITCHING (CONTEXT SWITCHING)
PURPOSE	DECIDES WHICH PROCESS GETS CPU TIME NEXT (POLICY).	EXECUTES THE TRANSITION BETWEEN PROCESSES BY SAVING/LOADING STATES (MECHANISM).

WHEN IT OCCURS	TRIGGERED BY EVENTS (E.G., TIME SLICE EXPIRY, I/O REQUEST, PRIORITY CHANGE).	OCCURS AFTER SCHEDULING TO IMPLEMENT THE DECISION (E.G., SWITCH TO THE SELECTED PROCESS).
MAIN OPERATIONS	ALGORITHM-BASED SELECTION	SAVING THE CURRENT PROCESS'S STATE AND LOADING THE NEXT PROCESS'S STATE (VIA PCB).
KEY COMPONENTS	SCHEDULER (ALGORITHM), READY QUEUE, PRIORITY SYSTEM.	PROCESS CONTROL BLOCK (PCB), KERNEL MODE OPERATIONS, CPU REGISTERS.
TRIGGERS	TIMER INTERRUPTS, PROCESS YIELDING, OR NEW HIGH-PRIORITY PROCESS ARRIVAL.	SCHEDULER'S DECISION, HARDWARE INTERRUPTS (E.G., I/O COMPLETION), OR SYSTEM CALLS.
OVERHEAD	LOW	HIGH
DEPENDENCY	CAN OCCUR WITHOUT A CONTEXT SWITCH	ALWAYS FOLLOWS SCHEDULING
EXAMPLES	ALGORITHMS: FCFS, SJF, ROUND ROBIN, PRIORITY SCHEDULING.	STEPS: SAVE CPU STATE OF PROCESS A → LOAD CPU STATE OF PROCESS B → UPDATE PC AND REGISTERS.