

[1 :- 3]

* [Multi-tasking VS Multi-threading]

* What is an process?

Ans Program under execution. When program from Disk comes to RAM for execution.

* What is thread?

Ans A sub-processes inside of an process. Independently executes and in ~~order~~ asynchronous way in the background.

Eg. → We writing in google doc, while we are writing asynchronously spelling checking and auto saving is happening in the back ground.

* What is Program?

Ans An executable file which contains a certain set of instructions written to complete the specific job. It is compiled code and ready to execute, stored in Disk.

Multi-tasking	Multi-threading
① More than 1 process concept.	More than 1 threads.
② Isolation & Memory protection.	No isolation and memory protection.
③ No. of CPU 1	No. of CPU > 1 (Better to have more than 1 or else multi-threading won't work)

→ OS all scaled only one memory space to ~~one~~ one process and threads share that only space as all are the part of the same process.

* Thread Scheduling:- Threads are scheduled based on their priority during the runtime.

Thread context switching	Process context switching
OS saves current state of thread & switches to another thread.	OS saves current state of process & switches to another process.

Doesn't include
switching of
memory address
space.

Fast switching.

CPU cache is
preserved

Includes switching of
memory address space.

Slow switching.

CPU cache is flushed.