

Multithreading.

→ A process can have multiple threads working at same time. Both process & thread are independent path of execution that runs in isolation.

Each thread has its own stack and own local variable. When a method runs on a thread, the local variables in the method are only available within that thread.

→ **Process** is a program in execution. When waiting for resources, it is just a program. When execution starts, it becomes a process. 1 single program can have multiple process associated with it.

→ **Thread** is unit of execution within a process. 1 process can have 1 to many threads.

→ Multiprocessing and multitasking is multithreading.

Threads supports:-

- Faster context switching
- Shared Memory access
- Thread is lightweight, process is heavyweight.

→ Advantages of Multithreading

- Resource Utilization
- Parallelism and improved performance
- Responsiveness

→ Disadvantages

- ↳ Difficult in writing, testing and debugging code
- ↳ can lead to deadlock and race conditions when