Concurrency – Ability of OS to

* Run multiple instructions at same time
* Process in threads(sub process) for independent execution
* Concurrency is the execution of the multiple instruction sequences at the same time. It happens in the operating system when there are several process threads running in parallel.

Thread:

1. Single sequence stream within a process.
2. An independent path of execution in a process.
3. Light-weight process.
4. Used to achieve parallelism by dividing a process’s tasks which are independent path of

execution.

1. Increases responsiveness
2. Shared memory space

Thread scheduling – Every thread has TCB(thread control block)

Thread Scheduling: Threads are scheduled for execution based on their priority. Even though

threads are executing within the runtime, all threads are assigned processor time slices by the

operating system.

Thread Context Switching:

1. Address space Is not switched
2. Os Saves current state of threads and switches to another thread of process
3. Fast switching as compared to process switching
4. Cache is reserved

Single CPU will not able to benefit multiple threads because no parallelism can be achieved

Benefits of multithreading:

1. Responsiveness
2. Resource sharing: Efficient resource sharing
3. Economical context switching
4. Threads allow utilization of multiprocessor architectures to a greater scale and efficiency.