* **Introduction to Concurrency**

- **Concurrency** :- It is an 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** :- Single light weight sequence stream with in a process, used to achieve parallelism by dividing a process's tasks which are independent path of execution.

- **Thread Scheduling** :- Threads are scheduled for execution based on their priority. Even though threads are executing within the runtime.

- **Threads Context Switching** :-

1. OS saves current state of thread and switches to another thread of same process.
2. Doesn't includes switching of memory address space.
3. Fast switching as compared to process switching.
4. CPU cache state is preserved.

- **How each thread get access to the CPU**

Each thread has its own program counter, depending upon the thread scheduling algorithm, OS schedule these threads, OS will fetch instructions corresponding to PC of that thread and execute instruction.

Page No.:
Date:

- **I/O based context switching:**
  We have TCB (Thread control Block) like PCB for threads.

- **Will single CPU would gain benefits from multi-threading technique**
  Never, as two threads have to context switch for that single CPU. Only possible in a system having more than 1 CPU or Core.