Chapter 8
Lock Implementation

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Introduction

- Details of implementing locking system
  - (Exclusive / Shared) Savepoint
  - Deadlock
  - (Persistent) Savepoint
  - Full-function locks

Concurrency Issues

- Need for parallelism within Lock manager
  - Fine granularity (trade-off : simplicity)
  - How to regulate concurrency with parallelism

➢ Preemptive Scheduling
  - Lock manager in higher-priority process will be blocked by the the semaphore until lower-priority process is re-dispatched.

➢ Virtual Memory
  - On page fault, other processes will be blocked by until page fault is serviced, and this lock manager request completes.

➢ Multiprocessors
  - Lock manager may consume 10% of the system pathlength and utilize semaphore 10% of time.
  - Now, 12% + 25% (latching + locking @ Payment Trx) [1]
  - **Fine granularity is essential !!!**