CSC369 Week 10 Notes

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- Remember Example from Last Week?

- Types of Resources

- Not Just an OS Problem

- Deadlock Defined

- Example of Deadlock

- Example: Dining Philosopers

- Deadlock Continued

- Conditions for Deadlock

- One More Condition

- Solutions

- Deadlock Prevention

- Preventing Hold and Wait

- Preventing No-Preemption

- Preventing Circular Wait

- Deadlock Avoidance

- Two Avoidance Strategies

- Safe States

- Unsafe States & Algorithm

- Restrictions on Avoidance

- Deadlock Detection & Recovery

- Draw Resource Alloc Graph

- Deadlock Detection

- Deadlock Recovery

- Reality Check

- Why does the Ostrich Algorithm Work?

- What is Atomicity?

- Why would atomicity fail?

- Definitions for Transactions

- How to ensure atomicity in the face of failures?

- Write-ahead logging

- Problems with logging

- Concurrent Transactions

- Conflicting Operations

- Conflict Serializability

- Conflict Serializable?

- Ensuring Serializability

- Example 2 of Phase Locking

- Timestamp Protocols

- Timestamp Ordering

- Deadlock and Starvation

- Communication Deadlocks

- Livelock