

# 44 Lecture - CS403

## Important Subjective

### 1. **What is the Uncommitted Update Problem?**

Answer: The Uncommitted Update Problem occurs when a transaction updates a database record but that update is not yet committed to the database.

### **What are the consequences of the Uncommitted Update Problem?**

Answer: The consequences of the Uncommitted Update Problem include dirty reads, non-repeatable reads, and phantom reads.

### **What is a dirty read?**

Answer: A dirty read is when a transaction reads a record that has been updated but not yet committed.

### **What is a non-repeatable read?**

Answer: A non-repeatable read is when a transaction reads the same record multiple times and gets different results due to another transaction updating or deleting the record.

### **What is a phantom read?**

Answer: A phantom read is when a transaction reads a set of records multiple times and gets different results due to another transaction inserting or deleting records in the set.

### **How can the Uncommitted Update Problem be prevented?**

Answer: The Uncommitted Update Problem can be prevented by using concurrency control mechanisms such as locking and timestamps.

### **What is transaction isolation level?**

Answer: Transaction isolation level is a database feature that determines the degree to which transactions are isolated from each other.

### **What is the highest transaction isolation level?**

Answer: The highest transaction isolation level is Serializable, which ensures that transactions are completely isolated from each other.

### **What is the lowest transaction isolation level?**

Answer: The lowest transaction isolation level is Read Uncommitted, which provides the lowest degree of isolation and the highest risk of the Uncommitted Update Problem.

### **How can the risk of the Uncommitted Update Problem be reduced?**

Answer: The risk of the Uncommitted Update Problem can be reduced by using a higher transaction isolation level, such as Repeatable Read or Serializable.