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.