→ Transaction

a. It is a group of statements which are certain kind of operations on database
b. Transaction uses DML(UPDATE, DELETE, etc) commands to perform operations
c. Following commands are used to manage the database
d. Database ensures that it follows ACID properties
e. asa

→ comm

a. Following commands are used to manage the database
    i. COMMIT:
        1. Saves database transaction
    ii. ROLLBACK:
        1. Undo the database transaction
    iii. SAVEPOINT:
        1. Creates safe / save point to which you can ROLLBACK the transaction
    iv. SET TRANSACTION:
        1. Sets name of transaction
    v.
    vi. asa
b. asa

→ ACID Properties

a. Database ensures that it follows ACID properties
b. ACID properties stand for Atomicity, Consistency, Isolation, Durability
c. Atomicity:
    i. It refers to ability of the transaction to be treated as single, individual unit of work
    ii. It means that either all the changes in the transaction are committed or none of then completed
    iii. For example, suppose we have a transaction for transferring money one bank account to another, and if the transaction fails after the money has been debited from one account, but before it has been credited to another account, the entire transaction failed, the both the accounts should have the same balance as they had before the transaction began
d. Consistency:
    i. It means that transaction brings the database from one valid state to another valid state
    ii. For example, we are debiting money from one account and transferring it into another account, then the amount from one account should be debited and it should be credited to another account. In this process of transaction, the first

account should hold debited amount and another account should hold the credited amount, or the amount in both accounts should be same as the amount they had before transaction began

e. Isolation:
    i. It refers to the ability of transaction to be executed independently without interfering with each other
    ii. In another words, concurrent transaction should not see each other changes until they're committed
    iii. For example, we have two transactions that involve updating the records. If one transaction updates the record and does not commit the changes before the other transaction starts, the second transaction should not see the changes made by the first transaction. The second transaction should only see the records of original values before the first transaction was committed

f. Durability:
    i. It refers to the ability of transaction changes to persist even if there is a system failure
    ii. In another words, we can say once transaction is committed, the change should be permanent
g. asa

→ Stored Functions
a. It is a set of statements that perform specific tasks and return a value
b. These are similar to stored procedures
c. Syntax for creating stored function:

```
CREATE FUNCTION function_name(arg0, arg1, arg2)
RETURNS return_type
BEGIN
     function_body
END;
```

d. asa

→ Rules for Stored functions:
a. It can return only single value
b. We can call stored functions from SQL statements
c. Stored function has only one type of parameter i.e. `IN`
d. We need to use delimiter to compile all of function definition in one go
e. asa

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