Report on SQL Transactions

Introduction
SQL transactions are an essential part of database management systems. They ensure that database operations are performed reliably and maintain data integrity, especially in multi-user environments.

Definition of SQL Transaction
An SQL transaction is a sequence of SQL operations executed as a single logical unit. All operations must succeed; otherwise, none of them are applied to the database.

Importance of SQL Transactions
SQL transactions help maintain consistency, prevent partial updates, manage system failures, and support concurrent access.

ACID Properties
Atomicity: Ensures all operations complete successfully or none at all.
Consistency: Ensures the database remains in a valid state.
Isolation: Prevents interference between concurrent transactions.
Durability: Ensures committed data is permanently saved.

Transaction Control Statements
START TRANSACTION, COMMIT, ROLLBACK, and SAVEPOINT are used to manage transactions in SQL.

Conclusion
SQL transactions play a critical role in maintaining database reliability and integrity. Proper use of transactions ensures safe and consistent database operations.