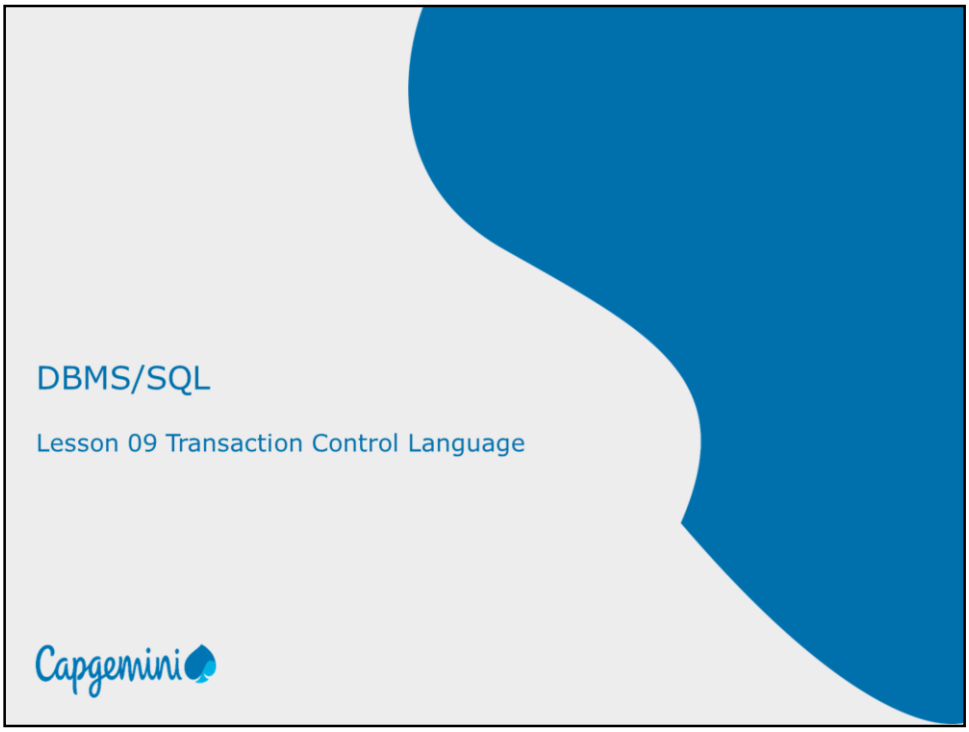
Instructor Notes:



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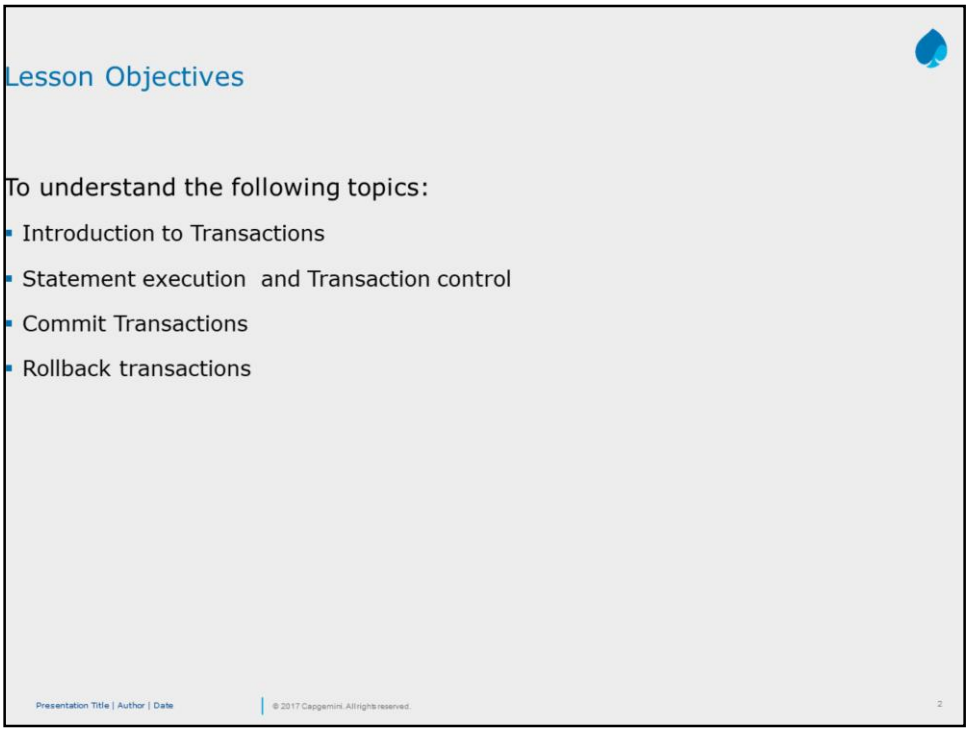

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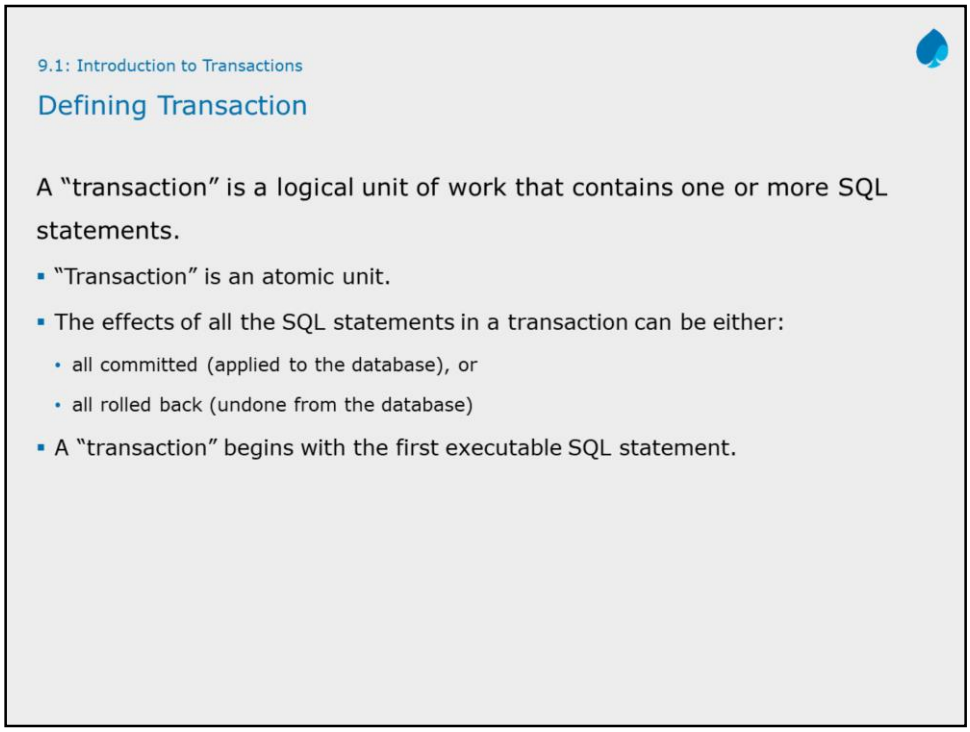

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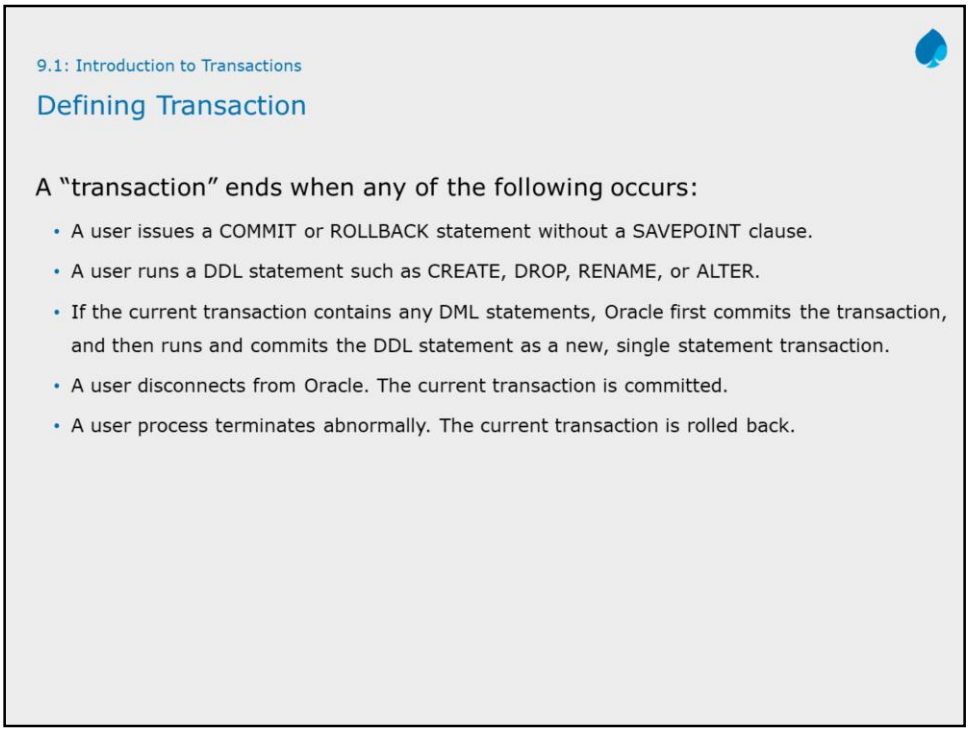
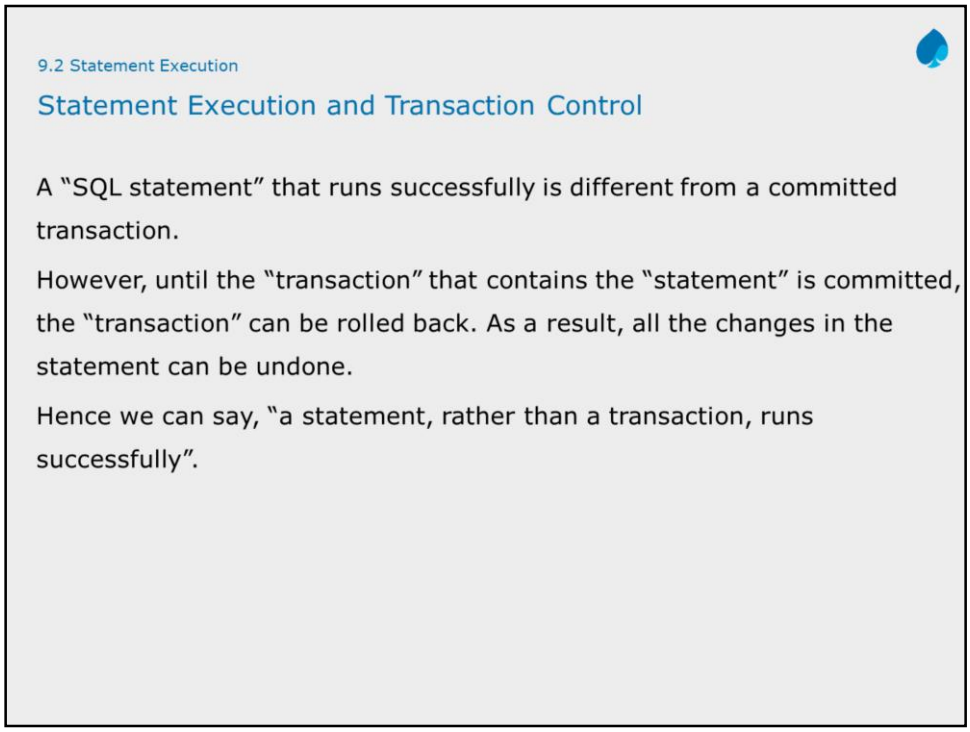


Note:
After one transaction ends, the next executable SQL statement automatically starts the subsequent transaction.

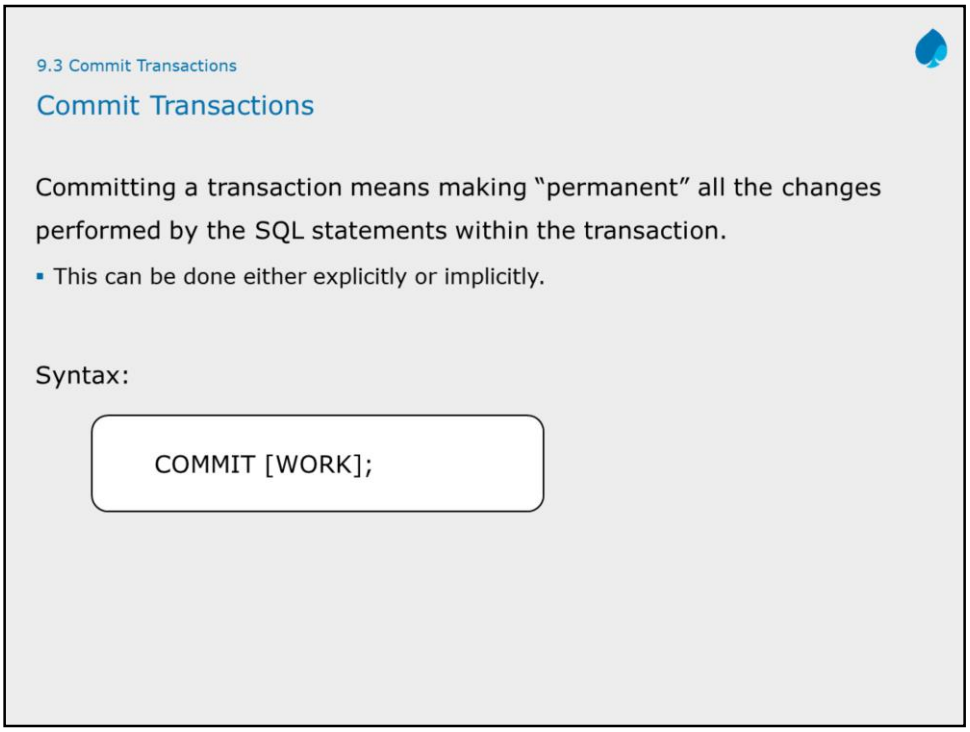
Instructor Notes:



Statement Execution and Transaction Control:

- Executing successfully means that a single statement was:
  - Parsed
  - Found to be a valid SQL construction
  - Run without error as an atomic unit.
- For example: All rows of a multi-row update are changed.

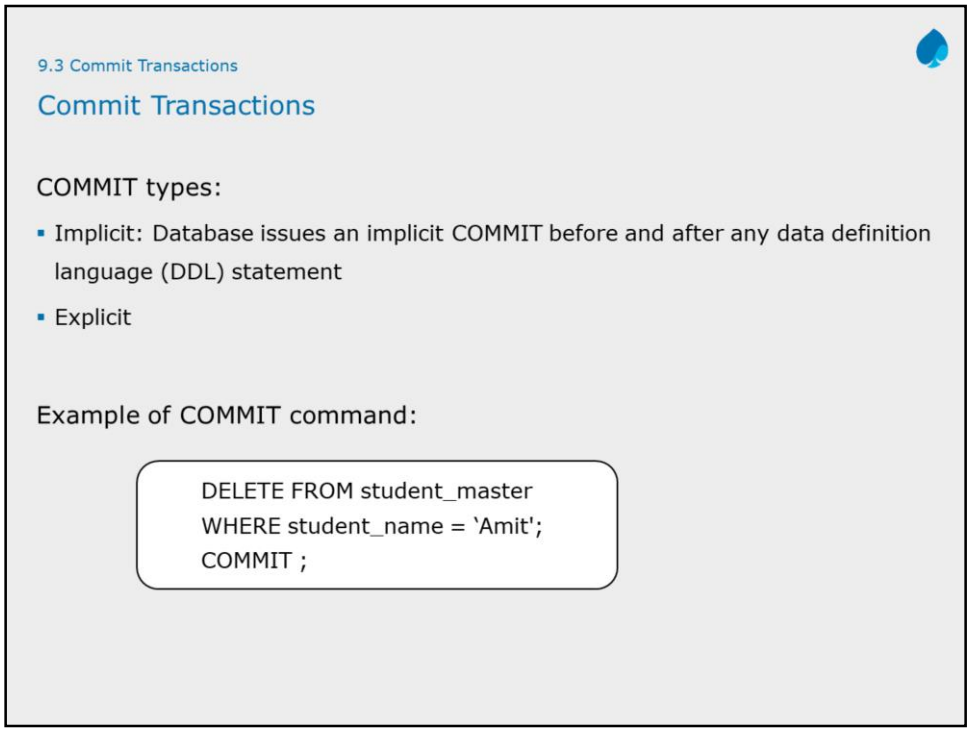
Instructor Notes:



Note:

- An "explicit request" occurs when the user issues a COMMIT statement.
- An "implicit request" occurs after normal termination of an application or completion of a data definition language (DDL) operation.
- The changes made by the SQL statement(s) of a transaction become permanent and visible to other users only after that transaction is committed. Queries that are issued after the transaction is committed will see the committed changes.

Instructor Notes:



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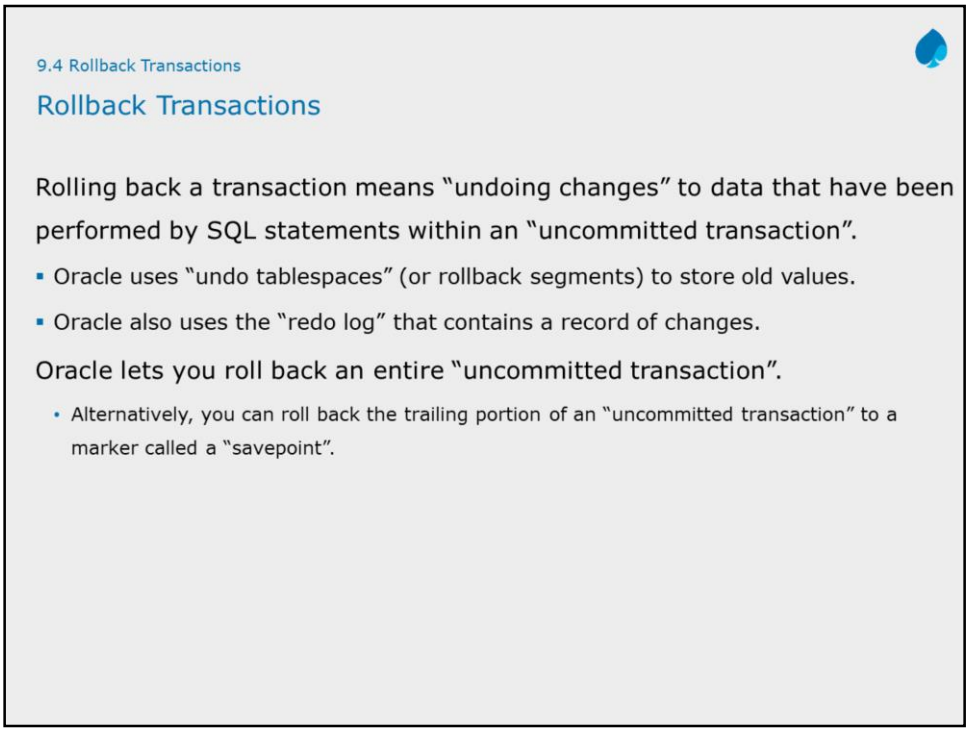
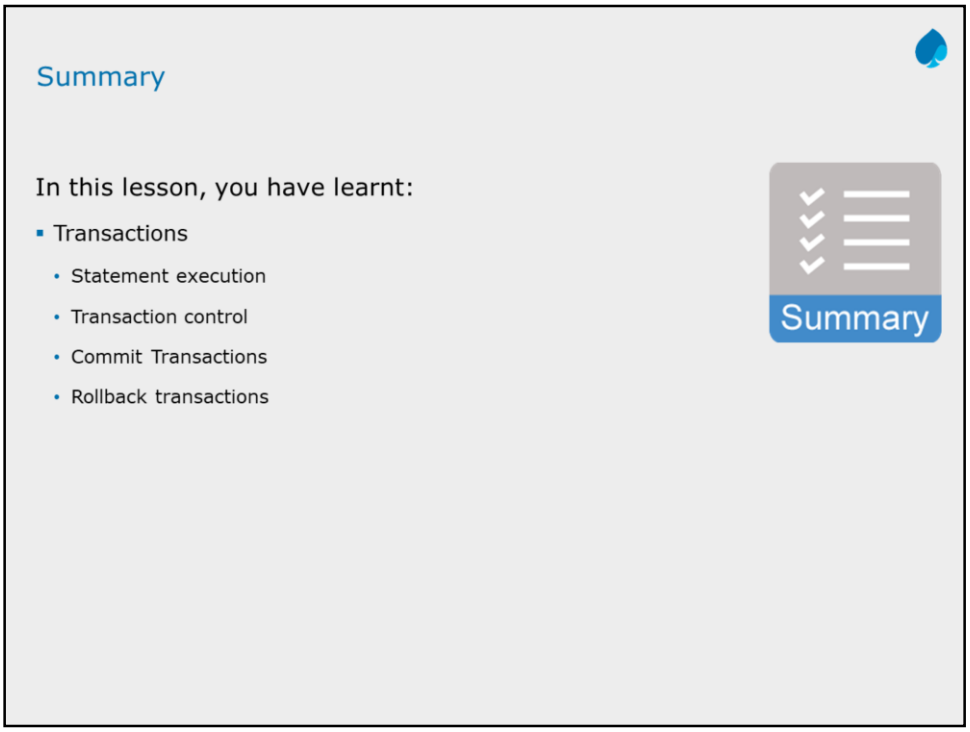


Types of Roll back:

- All the following types of rollbacks use the same roll back procedure:
  - Statement-level rollback (due to statement or deadlock execution error)
  - Rollback to a savepoint
  - Rollback of a transaction due to user request
  - Rollback of a transaction due to abnormal process termination
  - Rollback of all outstanding transactions when an instance terminates abnormally
  - Rollback of incomplete transactions during recovery
- In rolling back an entire transaction, without referencing any savepoints, there is an occurrence of the following sequence:
  1. Oracle undoes all changes made by all the SQL statements in the transaction by using the corresponding undo tablespace.
  2. Oracle releases all the locks of data for the transaction.
  3. The transaction ends.

Instructor Notes:



Instructor Notes:

Answers to Review Questions

Question 1: Transaction

Question 2: True

Question 3: Option1, Option3

Question 4: True

Review – Questions

Question 1 : ___ is a logical unit of work.

Question 2: A transaction is committed when the user issues a DDL statement.

- True/False

Question 3: A transaction is rolled back when ___.

- Option 1: rollback statement is issued
- Option 2: the user session is abruptly terminated
- Option 3: an error occurs in DML statement
- Option 4: none of the above

Question 4:In a transaction, DDL statement after DML

Instructor Notes:

Answers to Review Questions

Question 1: Transaction

Question 2: True

Question 3: Option1, Option3

Question 4: True

Review – Questions

- **Question 1 : ___ is a logical unit of work.**
- **Question 2: A transaction is committed when the user issues a DDL statement.**
  - True/False
- **Question 3: A transaction is rolled back when ___.**
  - Option 1: rollback statement is issued
  - Option 2: the user session is abruptly terminated
  - Option 3: an error occurs in DML statement
  - Option 4: none of the above

Question 4:In a transaction, DDL statement after DML statement commits the changes done by DML.

- True/False