

DATABASE SYSTEMS

COURSE

2021/2022

SESSION 2

SESSION 2

- **SQL BASICS**
- DDL CREATE TABLE
- DML INSERT STATEMENT
- DML UPDATE STATEMENT
- DML DELETE STATEMENT
- DDL ALTER TABLE STATEMENT
- DDL TRUNCATE TABLE
- DDL DROP TABLE

Data Types

MySQL	Oracle
INT/INTEGER	NUMBER
BIGINT	NUMBER
DOUBLE/DECIMAL	NUMBER/FLOAT
TEXT	VARCHAR2
VARCHAR	VARCHAR2
TINYTEXT	VARCHAR2
DATE	DATE
DATETIME	DATE
TIME	DATE
BLOB	BLOB
LONGBLOB	BLOB

Source: https://docs.oracle.com/cd/E12151_01/doc.150/e12155/oracle_mysql_compared.htm#i1026116

Statement Types

- **Data Definition Language (DDL)**

- CREATE
- ALTER
- DROP
- TRUNCATE

- **Data Manipulation Language (DML)**

- SELECT
- INSERT
- UPDATE
- DELETE

- **Data Control Language (DCL)**

- CREATE USER
- GRANT
- REVOKE
- ALTER SESSION

- **Transaction Control Language (TCL)**

- COMMIT
- ROLLBACK
- SAVEPOINT
- SET TRANSACTION

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DDL CREATE TABLE STATEMENT

CREATE TABLE Example

MySQL

```
CREATE TABLE sale (  
    id            INT,  
    product       VARCHAR(100),  
    quantity      INT,  
    price         DECIMAL(10,5),  
    sale_date     DATE  
);
```

Oracle

```
CREATE TABLE sale (  
    id            NUMBER,  
    product       VARCHAR2(100),  
    quantity      NUMBER,  
    price         NUMBER,  
    sale_date     DATE  
);
```

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INSERT Syntax

MySQL/Oracle

- **INSERT INTO** *table* (*field1,field2,...,fieldN*) **VALUES** (*value1,value2,...,valueN*)
- **INSERT INTO** *table*
VALUES (*value1,value2,...,valueN*)

MySQL

- **INSERT INTO** *table* (*field1,field2,...,fieldN*) **VALUES** (*value1,value2,...,valueN*) ,
(*value1,value2,...,valueN*)

DML INSERT STATEMENT

INSERT Example

MySQL

Oracle

- **INSERT INTO** sale (id, product, quantity, price, sale_date)
VALUES (1, 'oil bottle', 2, 3.5, '19-05-2020');
- **INSERT INTO** sale
VALUES (2, 'milk carton', 1, 1.8, '20-05-2020');

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UPDATE Syntax

MySQL/Oracle

```
UPDATE table  
SET fieldN = NewValueN  
WHERE field1 = Value1 AND  
       field2 = Value2 AND  
       ...;
```

DML UPDATE STATEMENT

UPDATE Example

MySQL/Oracle

- **UPDATE** sale **SET** quantity = 3 **WHERE** id = 1;

MySQL

- **UPDATE** sale **SET** price = price + price * 20/100
WHERE sale_date > '2020-05-18';

Oracle

- **UPDATE** sale **SET** price = price + price * 20/100
WHERE sale_date > '18-05-2020';

DML UPDATE STATEMENT

UPDATE Example

MySQL

```
UPDATE sale SET price = price + price * 15/100  
WHERE sale_date > '2020-05-18'  
      AND product = 'milk carton';
```

Oracle

```
UPDATE sale SET price = price + price * 15/100  
WHERE sale_date > '18-05-2020'  
      AND product = 'milk carton';
```

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DML DELETE STATEMENT

DELETE Syntax

MySQL/Oracle

```
DELETE FROM table  
WHERE field1 = Value1 AND  
       field2 = Value2 AND  
       ...;
```

DML DELETE STATEMENT

DELETE Example

MySQL/Oracle

- **DELETE FROM** sale
WHERE price > 5;
- **DELETE FROM** sale
WHERE product = 'oil bottle';

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DDL ALTER TABLE STATEMENT

ALTER TABLE to Add Column Syntax

MySQL/Oracle

```
ALTER TABLE table  
ADD ColumnName DataType;
```

DDL ALTER TABLE STATEMENT

ALTER TABLE to Add Column Example

MySQL

```
ALTER TABLE sale ADD seller VARCHAR(100) ;
```

Oracle

```
ALTER TABLE sale ADD seller VARCHAR2(100) ;
```

DDL ALTER TABLE STATEMENT

ALTER TABLE to Remove Column Syntax

MySQL

```
ALTER TABLE table DROP ColumnName;
```

Oracle

```
ALTER TABLE table DROP COLUMN ColumnName;
```

DDL ALTER TABLE STATEMENT

ALTER TABLE to Remove Column Example

MySQL

```
ALTER TABLE sale DROP seller;
```

Oracle

```
ALTER TABLE sale DROP COLUMN seller;
```

DDL ALTER TABLE STATEMENT

ALTER TABLE to Modify Column Syntax

MySQL

```
ALTER TABLE table MODIFY COLUMN field DataType;
```

Oracle

```
ALTER TABLE table MODIFY field DataType;
```

NOTE: MySQL attempts to perform a CAST while Oracle does not allow change the datatype in populated columns.

DDL ALTER TABLE STATEMENT

ALTER TABLE to Modify Column Example

MySQL

```
ALTER TABLE sale MODIFY COLUMN product VARCHAR(200) ;
```

Oracle

```
ALTER TABLE sale MODIFY product VARCHAR2(200) ;
```

DDL ALTER TABLE STATEMENT

ALTER TABLE to Rename Column Syntax

MySQL/Oracle

```
ALTER TABLE table  
RENAME COLUMN field1 TO NewField1;
```

ALTER TABLE to Rename Column Example

MySQL/Oracle

```
ALTER TABLE sale  
RENAME COLUMN product TO NewProductName;
```


DDL ALTER TABLE STATEMENT

ALTER TABLE to Rename Table Syntax

MySQL/Oracle

```
ALTER TABLE table RENAME TO NewTableName;
```

ALTER TABLE to Rename Table Example

MySQL/Oracle

```
ALTER TABLE sale RENAME TO newsale;
```

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DDL TRUNCATE TABLE STATEMENT

TRUNCATE TABLE Syntax

MySQL/Oracle

```
TRUNCATE TABLE table;
```

TRUNCATE TABLE Example

MySQL/Oracle

```
TRUNCATE TABLE newsale;
```

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DDL DROP TABLE STATEMENT

DROP TABLE Syntax

MySQL/Oracle

```
DROP TABLE table;
```

DROP TABLE Example

MySQL/Oracle

```
DROP TABLE newsale;
```