

# Data Retrieval Techniques

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# Outline

- Basics of SELECT statement

```
SELECT Column_List  
FROM Table_Name  
WHERE Filter_Condition  
ORDER BY Column_List  
LIMIT Row_Limit
```

# Setup for Demo

- MySQL Server
- MySQL Workbench
- Sample Database sakila

OR

- MySQL installer for Windows

# Basic Syntax of the SELECT statement

```
SELECT Column_List  
FROM Table_Name  
WHERE Filter_Condition  
ORDER BY Column_List  
LIMIT Row_Limit
```

# Beginning SELECT Statements

- Retrieve static value
- Retrieve all the data from table
- Retrieve all the data ordered by single column
- Retrieve selected columns from table
- Retrieve the data with filter condition
- Retrieve the data with filter condition and ordered by columns
- Retrieve empty result set

# **SELECT clause – Arithmetic Expressions**

- **Retrieve column names using aliases**
- **Retrieve values based on arithmetic expressions**
  - Multiplication (\*)
  - Division (/)
  - Integer Division (DIV)
  - Modulo (% or MOD)
  - Addition (+)
  - Subtraction (-)

# **SELECT clause – Various Functions**

- **Retrieve results based on function**
  - Numbers
  - Strings
  - Dates
- **Retrieve distinct values from table (remove duplicates)**

# WHERE clause

```
SELECT *  
FROM TableName
```

```
SELECT Col1, Col2, Col3  
FROM TableName
```

```
SELECT Col1, Col2, Col3  
FROM TableName  
WHERE Col1 = 'SomeValue'
```



# WHERE clause – Comparison Operators

- WHERE clause comparison operators
  - Equal (=)
  - Less than (<)
  - Greater than (>)
  - Less than or Equal to (<=)
  - Greater than or Equal to (>=)
  - Not equal (<> or !=)

# WHERE clause – Logical Operators

- WHERE clause logical operators
  - AND
  - OR
  - NOT

Operator	Description
AND	True if all conditions are True
OR	True if any one condition is True
NOT	Negate Logic

# WHERE clause – Other Operators and Phrases

- **WHERE clause other operators**

- IN (and NOT IN)
- BETWEEN (and NOT BETWEEN)
- LIKE (and NOT LIKE)
  - Wildcard - %
  - Wildcard - \_

- **NULL clause**

- IS NULL clause
- IS NOT NULL clause

# ORDER BY clause

- **Sequence**
  - Ascending
  - Descending
- **Single Column**
- **Multi Column**
- **Expression**
- **Alias**
- **Column Number**

# **LIMIT clause**

- **Retrieving Top Rows**
- **Retrieving Rows from offset**

# Summary in Sixty Seconds

**#1 SELECT clause describes the columns list in the resultset**

**#2 FROM clause describes the table names from which the query retrieves the data**

**#3 WHERE clause describes the conditions to match for rows to qualify for resultset**

**#4 ORDER BY clause describes the sort order and sequence for resultset**

**#5 LIMIT clause describes the number of rows resultset returns and offset**



# Summary in Sixty Seconds



**#1 Use column names in SELECT statement instead of \* to reduce ambiguity and impact performance**

**#2 Using aliases improves readability**

**#3 Use various comparison and logical operator in WHERE clause to retrieve rows relevant to application**

**#4 Always use ORDER BY clause if you want your result ordered**