

Basics

```
USE sql_store;
```

```
SELECT *  
FROM customers WHERE  
state = 'CA' ORDER BY  
first_name LIMIT 3;
```

- SQL is **not** a case-sensitive language.
- In MySQL, every statement must be terminated with a semicolon.

Comments

We use comments to add notes to our code.

— This is a comment and it won't get executed.

SELECT Clause

— Using expressions

```
SELECT (points * 10 + 20) AS discount_factor FROM customers
```

Order of operations:

- Parenthesis
- Multiplication / division
- Addition / subtraction

— Removing duplicates

```
SELECT
```

```
DISTINCT state  
FROM customers
```

WHERE Clause

We use the WHERE clause to filter data.

Comparison operators:

- Greater than: >
- Greater than or equal to: >=
- Less than: <
- Less than or equal to: <=
- Equal: =
- Not equal: <>
- Not equal: !=

Logical Operators

-- AND (both conditions must be True)SELECT *
FROM customers
WHERE birthdate > '1990-01-01' AND points > 1000

-- OR (at least one condition must be True)SELECT *
FROM customers
WHERE birthdate > '1990-01-01' OR points > 1000

-- NOT (to negate a condition)SELECT *
FROM customers
WHERE NOT (birthdate > '1990-01-01')

IN Operator

— Returns customers in any of these states: VA, NY, CA
SELECT *
FROM customers
WHERE state IN ('VA', 'NY', 'CA')

BETWEEN Operator

SELECT *
FROM customers
WHERE points BETWEEN 100 AND 200

LIKE Operator

— Returns customers whose first name starts with b
SELECT *
FROM customers
WHERE first_name LIKE 'b%'

- %: any number of characters
- _: exactly one character

REGEXP Operator

— Returns customers whose first name starts with a
SELECT *
FROM customers
WHERE first_name REGEXP '^a'

- ^: beginning of a string
- \$: end of a string
- |: logical OR
- [abc]: match any single characters
- [a-d]: any characters from a to d

More Examples

— Returns customers whose first name ends with EY or ONWHERE first_name
REGEXP 'ey\$|on\$'

— Returns customers whose first name starts with MY
— or contains SE
WHERE first_name REGEXP '^my|se'

— Returns customers whose first name contains B followed by
— R or U
WHERE first_name REGEXP 'b[ru]'

IS NULL Operator

— Returns customers who don't have a phone numberSELECT *
FROM customers WHERE
phone IS NULL

ORDER BY Clause

— Sort customers by state (in ascending order), and then
— by their first name (in descending order)SELECT *
FROM customers
ORDER BY state, first_name DESC

LIMIT Clause

— Return only 3 customersSELECT *
FROM customers
LIMIT 3

—- Skip 6 customers and return 3
SELECT *
FROM customers
LIMIT 6, 3

Inner Joins

SELECT *
FROM customers c
JOIN
orders o
ON c.customer_id = o.customer_id

Outer Joins

—- Return all customers whether they have any orders or not
SELECT *
FROM customers c
LEFT JOIN orders o
ON c.customer_id = o.customer_id

USING Clause

If column names are exactly the same, you can simplify the join with the USING clause.

SELECT *
FROM customers c
JOIN
orders o
USING (customer_id)

Cross Joins

—- Combine every color with every size
SELECT *
FROM colors
CROSS JOIN sizes

Unions

—- Combine records from multiple result sets
SELECT name,
address

FROM customers

UNION

SELECT name, address
FROM
clients

Inserting Data

—- Insert a single record

INSERT INTO customers(first_name, phone, points)VALUES ('Mosh',
NULL, DEFAULT)

—- Insert multiple single records

INSERT INTO customers(first_name, phone, points)VALUES
('Mosh', NULL, DEFAULT),
('Bob', '1234', 10)