

Sql commands

SELECT:

```
USE sql_store;

-- select all from customer table
SELECT *
FROM customers;

-- select specific columns
SELECT first_name, last_name
FROM customers;

-- select with arithmetic expressions
SELECT first_name, last_name, points, points+10
FROM customers;

-- select with an alias
SELECT
    first_name,
    last_name,
    points,
    points+10 AS Points_new
FROM customers;

-- select distinct values
SELECT DISTINCT state
FROM customers;
```

MySQL Workbench

Schemas: test

Query 1

```
1 • USE sql_store;
2
3 -- select all from customer table
4 • SELECT *
5   FROM customers;
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	point
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
3	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
4	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
5	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
6	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
7	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
8	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
9	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
10	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796

Object Info Session

Schema: sql_store

customers 1

Query Completed

MySQL Workbench

Schemas: test

Query 1

```
1 • USE sql_store;
2
3 -- select all from customer table
4 • SELECT *
5   FROM customers;
6
7 -- select specific columns
8 • SELECT first_name, last_name
9   FROM customers;|
```

Result Grid

#	first_name	last_name
1	Babara	MacCaffrey
2	Ines	Brushfield
3	Freddi	Boagey
4	Ambur	Roseburgh
5	Clemmie	Betchley
6	Elka	Twiddell
7	Ilene	Dowson
8	Thacher	Naseby
9	Romola	Rumgay
10	Levy	Mynett

Object Info Session

Schema: sql_store

Query Completed

MySQL Workbench

Schemas: test

Query 1

```
1 • USE sql_store;
2
3 -- select all from customer table
4 • SELECT *
  FROM customers;
6
7 -- select specific columns
8 • SELECT first_name, last_name
  FROM customers;
10
11 -- select with arithmetic expressions
12 • SELECT first_name, last_name, points, points+10
  FROM customers;
14
15
```

Result Grid

#	first_name	last_name	points	points+10
1	Barbara	MacCaffrey	2273	2283
2	Ines	Brushfield	947	957
3	Freddi	Boagey	2967	2977
4	Ambur	Roseburgh	457	467
5	Clemmie	Betchley	3675	3685
6	Elka	Twiddell	3073	3083
7	Ilene	Dowson	1672	1682
8	Thacher	Naseby	205	215
9	Romola	Rumgay	1486	1496
10	Levy	Mynett	796	806

Object Info Session

Schema: sql_store

customers 4 customers 5 Result 6

Query Completed

MySQL Workbench

Schemas: test

Query 1

```
1 • USE sql_store;
2
3 -- select all from customer table
4 • SELECT *
5   FROM customers;
6
7 -- select specific columns
8 • SELECT first_name, last_name
9   FROM customers;
10
11 -- select with arithmetic expressions
12 • SELECT first_name, last_name, points, points+10
13   FROM customers;
14
15 -- select with an alias
16 • SELECT
17     first_name,
18     last_name,
19     points,
20     points+10 AS Points_new
21
```

Result Grid

#	first_name	last_name	points	Points_new
1	Babara	MacCaffrey	2273	2283
2	Ines	Brushfield	947	957
3	Freddi	Boagey	2967	2977
4	Ambur	Roseburgh	457	467
5	Clemmie	Betchley	3675	3685
6	Elka	Twiddell	3073	3083
7	Ilene	Dowson	1672	1682
8	Thacher	Naseby	205	215
9	Romola	Rumgay	1486	1496
10	Levy	Mynett	796	806

Object Info Session Schema: sql_store

customers 7 customers 8 Result 9 Result 10

Read Only

Query Completed

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Schemas

SCHEMAS

Filter objects

- > db
- > sql_hr
- > sql_inventory
- > sql_invoicing
- > **sql_store**
- > Tables
- Views
- Stored Procedures
- Functions
- > sys

Query 1

```

8 •  SELECT first_name, last_name
9   FROM customers;
10
11   -- select with arithmetic expressions
12 •  SELECT first_name, last_name, points, points+10
13   FROM customers;
14
15   -- select with an alias
16 •  SELECT
17     first_name,
18     last_name,
19     points,
20     points+10 AS Points_new
21   FROM customers;
22
23   -- select distinct values
24 •  SELECT DISTINCT state
25   FROM customers;
26
27

```

Result Grid

#	state
1	MA
2	VA
3	CO
4	FL
5	TX
6	IL
7	TN
8	CA
9	GA

Object Info Session

Schema: sql_store

customers 11 customers 12 Result 13 Result 14 customers 15

Query Completed

WHERE :

```
-- where clause with > sign
SELECT *
FROM customers
WHERE points > 3000;

-- where clause with strings
SELECT *
FROM customers
WHERE state <> 'va';

-- where clause with multiple conditions
SELECT *
FROM customers
WHERE (state <> 'va' AND points > 2000);

SELECT *
FROM customers
WHERE (state <> 'va' OR points > 2000);

SELECT *
FROM customers
WHERE NOT state= 'va';
```

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Schemas SQL File 5*

SCHEMAS

Filter objects

db
sql_hr
sql_inventory
sql_invoicing
sql_store
Tables
Views
Stored Procedures
Functions
sys

1 -- where clause with > sign
2 • SELECT *
3 FROM customers
4 WHERE points > 3000;

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
2	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Object Info Session

Schema: sql_store

customers 1

Query Completed

MySQL Workbench

Schemas: test

SQL File 5*

```
1
2      -- where clause with > sign
3 •   SELECT *
4     FROM customers
5     WHERE points > 3000;
6
7      -- where clause with strings
8 •   SELECT *
9     FROM customers
10    WHERE state <> 'va';
```

Result Grid

customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	Barbara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Object Info Session

Schema: sql_store

customers 2 customers 3

Query Completed

MySQL Workbench

Schemas: test

SQL File 5*

```

1
2      -- where clause with > sign
3 •   SELECT *
4     FROM customers
5     WHERE points > 3000;
6
7      -- where clause with strings
8 •   SELECT *
9     FROM customers
10    WHERE state <> 'va';
11
12     -- where clause with multiple conditions
13 •   SELECT *
14     FROM customers
15    WHERE state <> 'va' AND points > 2000;

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
4	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073

Object Info Session

Schema: sql_store

customers 7 customers 8 customers 9

Query Completed

MySQL Workbench

Schemas: test

SQL File 5*

```

1
2      -- where clause with > sign
3 •   SELECT *
4     FROM customers
5     WHERE points > 3000;
6
7      -- where clause with strings
8 •   SELECT *
9     FROM customers
10    WHERE state <> 'va';
11
12     -- where clause with multiple conditions
13 •   SELECT *
14     FROM customers
15    WHERE (state <> 'va' AND points > 2000);
16
17 •   SELECT *
18     FROM customers
19    WHERE (state <> 'va' OR points > 2000);
20

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
4	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
5	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
6	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
7	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
8	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
9	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session Schema: sql_store

Query Completed

MySQL Workbench

Schemas: test

SQL File 5*

```

4   FROM customers
5   WHERE points > 3000;
6
7   -- where clause with strings
8 •   SELECT *
9   FROM customers
10  WHERE state <> 'va';
11
12  -- where clause with multiple conditions
13 •   SELECT *
14  FROM customers
15  WHERE (state <> 'va' AND points > 2000);
16
17 •   SELECT *
18  FROM customers
19  WHERE (state <> 'va' OR points > 2000);
20
21 •   SELECT *
22  FROM customers
23  WHERE NOT state= 'va';
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
4	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
5	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
6	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
7	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
8	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
9	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session Schema: sql_store

Query Completed

IN:

```
-- in statement
SELECT *
FROM customers
WHERE state IN ('VA' , 'GA' , 'FL');
```

```
-- not in statement
SELECT *
FROM customers
WHERE state NOT IN ('VA' , 'GA' , 'FL');
```

MySQL Workbench

Schemas

- db
- sql_hr
- sql_inventory
- sql_invoicing
- sql_store**
 - Tables
 - Views
 - Stored Procedures
 - Functions
- sys

SQL File 6*

```
1 -- in statement
2 • SELECT *
3 FROM customers
4 WHERE state IN ('VA' , 'GA' , 'FL');
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
2	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
3	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
4	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
*	HULL	HULL	HULL	HULL	HULL		HULL	HULL	HULL

Object Info **Session**

Schema: sql_store

customers 1

Query Completed

MySQL Workbench

Schemas: test

SQL File 6*

```

1 -- in statement
2 • SELECT *
3   FROM customers
4   WHERE state IN ('VA' , 'GA' , 'FL');
5
6 -- not in statement
7 • SELECT *
8   FROM customers
9   WHERE state NOT IN ('VA' , 'GA' , 'FL');

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
4	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
5	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
6	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486

Object Info Session Schema: sql_store

customers 2 customers 3 Apply

Query Completed

BETWEEN

```
-- between statement

SELECT *
FROM customers
WHERE points BETWEEN 1000 AND 3000;
```

MySQL Workbench

Schemas: test

SQL File 7*

```

1 -- between statement
2
3 • SELECT *
4 FROM customers
5 WHERE points BETWEEN 1000 AND 3000;

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
4	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 1

Query Completed

LIKE:

```
-- like statement (last name starting with string/char)

SELECT *
FROM customers
WHERE last_name LIKE 'b%';

SELECT *
FROM customers
WHERE last_name LIKE 'brush%';

-- like with char/string anywhere in lastname
SELECT *
FROM customers
WHERE last_name LIKE '%b%';

-- like with specific no of level before or after
SELECT *
FROM customers
WHERE last_name LIKE '__a__';
```

MySQL Workbench

Schemas: test

SQL File 8*

```
1 -- like statement (last name starting with string/char)
2
3 • SELECT *
4 FROM customers
5 WHERE last_name LIKE 'b%';
6
7
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	point
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
*	HULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Object Info Session

Schema: sql_store

customers 3

Query Completed

MySQL Workbench

Schemas

SQL File 8*

```
1 -- like statement (last name starting with string/char)
2
3 • SELECT *
4   FROM customers
5   WHERE last_name LIKE 'b%';
6
7 • SELECT *
8   FROM customers
9   WHERE last_name LIKE 'brush%';
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
*	HULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Object Info Session

Schema: sql_store

customers 1 customers 2 Apply

Query Completed

MySQL Workbench

Schemas: test

SQL File 8*

```

1 -- like statement (last name starting with string/char)
2
3 • SELECT *
4   FROM customers
5   WHERE last_name LIKE 'b%';
6
7 • SELECT *
8   FROM customers
9   WHERE last_name LIKE 'brush%';
10
11 -- like with char/string anywhere in lastname
12 • SELECT *
13   FROM customers
14   WHERE last_name LIKE '%b%';
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
3	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
4	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
5	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Object Info Session

Schema: sql_store

customers 4 customers 5 customers 6 Apply

Query Completed

MySQL Workbench

Schemas: test

SQL File 8*

```

1 -- like statement (last name starting with string/char)
2
3 • SELECT *
4   FROM customers
5   WHERE last_name LIKE 'b%';
6
7 • SELECT *
8   FROM customers
9   WHERE last_name LIKE 'brush%';
10
11 -- like with char/string anywhere in lastname
12 • SELECT *
13   FROM customers
14   WHERE last_name LIKE '%b%';
15
16 -- like with specific no of level before or after
17 • SELECT *
18   FROM customers
19   WHERE last_name LIKE '_a_';

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 7

Query Completed

REGEXP

```
-- regexp for string/char anywhere in lastname
SELECT *
FROM customers
WHERE last_name REGEXP 'field';
```

```
-- regexp for string/char in begining of lastname
SELECT *
FROM customers
WHERE last_name REGEXP '^brush';

-- regexp for string/char in end of lastname
SELECT *
FROM customers
WHERE last_name REGEXP 'field$';

-- regexp for multiple string/char anywhere in lastname
SELECT *
FROM customers
WHERE last_name REGEXP 'field|mac';

-- regexp for string/char in a pattern in lastname (ge/ie/me)
SELECT *
FROM customers
WHERE last_name REGEXP '[gim]e';
```

MySQL Workbench

Schemas: test

SQL File 9*

```
1 -- regexp for string/char anywhere in lastname
2
3 • SELECT *
4 FROM customers
5 WHERE last_name REGEXP 'field';
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 1

Query Completed

The screenshot shows the MySQL Workbench interface. In the left sidebar, under the 'test' database, the 'sql_store' schema is selected. A query is being run in the central pane, specifically line 5: 'WHERE last_name REGEXP 'field';'. The result grid displays one row of data for a customer named 'Ines Brushfield' with ID 2. The columns include customer_id, first_name, last_name, birth_date, phone, address, city, state, and points. All fields except first_name and last_name have null values. The 'customers' table is also listed at the bottom of the results.

MySQL Workbench

Schemas: test

SQL File 9*

```
1
2      -- regexp for string/char anywhere in lastname
3 •   SELECT *
4     FROM customers
5     WHERE last_name REGEXP 'field';
6
7      -- regexp for string/char in beginning of lastname
8 •   SELECT *
9     FROM customers
10    WHERE last_name REGEXP '^brush';
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 2 customers 3

Query Completed

MySQL Workbench

Schemas: test

SQL File 9*

```

1
2      -- regexp for string/char anywhere in lastname
3 •   SELECT *
4     FROM customers
5     WHERE last_name REGEXP 'field';
6
7      -- regexp for string/char in beginning of lastname
8 •   SELECT *
9     FROM customers
10    WHERE last_name REGEXP '^brush';
11
12     -- regexp for string/char in end of lastname
13 •   SELECT *
14     FROM customers
15     WHERE last_name REGEXP 'field$';

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 4 customers 5 customers 6

Query Completed

MySQL Workbench

Schemas: test

SQL File 9*

```

1
2      -- regexp for string/char anywhere in lastname
3 •   SELECT *
4     FROM customers
5     WHERE last_name REGEXP 'field';
6
7      -- regexp for string/char in beginning of lastname
8 •   SELECT *
9     FROM customers
10    WHERE last_name REGEXP '^brush';
11
12     -- regexp for string/char in end of lastname
13 •   SELECT *
14     FROM customers
15     WHERE last_name REGEXP 'field$';
16
17     -- regexp for multiple string/char anywhere in lastname
18 •   SELECT *
19     FROM customers
20     WHERE last_name REGEXP 'field|mac';

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 7 customers 8 customers 9 customers 10

Query Completed

MySQL Workbench

Schemas: test

SQL File 9*

```

6
7      -- regexp for string/char in begining of lastname
8 •   SELECT *
9     FROM customers
10    WHERE last_name REGEXP '^brush';
11
12    -- regexp for string/char in end of lastname
13 •   SELECT *
14     FROM customers
15    WHERE last_name REGEXP 'field$';
16
17    -- regexp for multiple string/char anywhere in lastname
18 •   SELECT *
19     FROM customers
20    WHERE last_name REGEXP 'field|mac';
21
22    -- regexp for string/char in a pattern in lastname (ge/ie/me)
23 •   SELECT *
24     FROM customers
25    WHERE last_name REGEXP '[gim]e';

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	point
1	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
2	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

Query Completed

NULL:

```

-- null to get customer with no phone

SELECT *
FROM customers
WHERE phone IS NULL;

```

```
-- null to get customer with phone

SELECT *
FROM customers
WHERE phone IS NOT NULL
```

The screenshot shows the MySQL Workbench interface with a query editor and results grid.

Query Editor:

```
-- null to get customer with no phone

SELECT *
FROM customers
WHERE phone IS NULL
```

Result Grid:

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675

Status Bar: Query Completed

MySQL Workbench

Schemas: test

SQL File 10*

```

1 -- null to get customer with no phone
2
3 • SELECT *
4   FROM customers
5 WHERE phone IS NULL;
6
7 -- null to get customer with phone
8
9 • SELECT *
10  FROM customers
11 WHERE phone IS NOT NULL

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
3	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
4	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
5	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
6	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
7	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
8	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
9	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Object Info Session

Schema: sql_store

customers 2 customers 3

Query Completed

ORDER BY:

```

-- ordering data alphabetically by first_name
SELECT *
FROM customers
ORDER BY first_name;

```

```
-- ordering data alphabetically in decending order by first_name
SELECT *
FROM customers
ORDER BY first_name DESC;

-- ordering data alphabetically by first_name then state
SELECT *
FROM customers
ORDER BY first_name, state;

-- ordering data alphabetically in decending order by first_name then ascending
-- order by state
SELECT *
FROM customers
ORDER BY first_name DESC, state;

-- ordering data alphabetically by first_name then state using position no
SELECT first_name, state
FROM customers
ORDER BY 1,2;
```

MySQL Workbench

Schemas: test

Query 5

```

1 -- ordering data alphabetically by first_name
2 • SELECT *
3 FROM customers
4 ORDER BY first_name;
    
```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	poинт
1	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
2	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
3	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
4	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
5	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
6	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
7	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
8	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
9	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
10	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205

customers 1

Object Info Session

Schema: sql_store

Query Completed

MySQL Workbench

Schemas: test

Query 5

```

1 -- ordering data alphabetically by first_name
2 • SELECT *
3   FROM customers
4   ORDER BY first_name;
5
6 -- ordering data alphabetically in decending order by first_name
7 • SELECT *
8   FROM customers
9   ORDER BY first_name DESC;

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
2	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
3	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
4	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
5	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
6	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
7	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
8	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
9	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
10	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457

Object Info Session

Schema: sql_store

customers 2 customers 3

Query Completed

MySQL Workbench

Schemas: test

Query 5

```

1 -- ordering data alphabetically by first_name
2 • SELECT *
3   FROM customers
4   ORDER BY first_name;
5
6 -- ordering data alphabetically in decending order by first_name
7 • SELECT *
8   FROM customers
9   ORDER BY first_name DESC;
10
11 -- ordering data alphabetically by first_name then state
12 • SELECT *
13   FROM customers
14   ORDER BY first_name, state;

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457
2	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
3	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
4	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
5	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
6	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
7	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
8	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
9	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
10	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205

Object Info Session Schema: sql_store

customers 4 customers 5 customers 6

Query Completed

MySQL Workbench

Schemas: test

Query 5

```

1 -- ordering data alphabetically by first_name
2 • SELECT *
3   FROM customers
4   ORDER BY first_name;
5
6 -- ordering data alphabetically in decending order by first_name
7 • SELECT *
8   FROM customers
9   ORDER BY first_name DESC;
10
11 -- ordering data alphabetically by first_name then state
12 • SELECT *
13   FROM customers
14   ORDER BY first_name, state;
15
16 -- ordering data alphabetically in decending order by first_name then ascending
17 -- order by state
18 • SELECT *
19   FROM customers
20   ORDER BY first_name DESC, state;

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	poins
1	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
2	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
3	10	Levy	Mynett	1969-10-13	404-246-3370	68 Lawn Avenue	Atlanta	GA	796
4	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
5	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
6	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
7	6	Elka	Twiddell	1991-09-04	312-480-8498	7 Manley Drive	Chicago	IL	3073
8	5	Clemmie	Betchley	1973-11-07	NULL	5 Spohn Circle	Arlington	TX	3675
9	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
10	4	Ambur	Roseburgh	1974-04-14	407-231-8017	30 Arapahoe Terrace	Orlando	FL	457

Object Info Session Schema: sql_store

customers 7 × customers 8 × customers 9 × customers 10 × Apply

Query Completed

MySQL Workbench

Schemas: test

Query 5

```

6   -- ordering data alphabetically in decending order by first_name
7 • SELECT *
8   FROM customers
9   ORDER BY first_name DESC;
10
11  -- ordering data alphabetically by first_name then state
12 • SELECT *
13   FROM customers
14   ORDER BY first_name, state;
15
16  -- ordering data alphabetically in decending order by first_name then ascending
17  -- order by state
18 • SELECT *
19   FROM customers
20   ORDER BY first_name DESC, state;
21
22  -- ordering data alphabetically by first_name then state using position no
23 • SELECT first_name, state
24   FROM customers
25   ORDER BY 1,2;

```

Result Grid

#	first_name	state
1	Ambur	FL
2	Babara	MA
3	Clemmie	TX
4	Elka	IL
5	Freddi	CO
6	Ilene	TN
7	Ines	VA
8	Levy	GA
9	Romola	CA
10	Thacher	FL

Object Info Session

Schema: sql_store

Query Completed

LIMIT:

```
-- get top 3 data
SELECT *
FROM customers
LIMIT 3;
```

```
-- get 3 data from between the data using offset
SELECT *
FROM customers
LIMIT 6, 3;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Title Bar:** MySQL Workbench
- Toolbar:** Standard MySQL Workbench toolbar with various icons for database management.
- Schemas Panel:** Shows the current schema is "test". It lists available databases: db, sql_hr, sql_inventory, sql_invoicing, and sql_store. The sql_store database is currently selected.
- Query Editor:** A SQL file named "SQL File 11*" containing the following code:


```
1 -- get top 3 data
2 • SELECT *
3 FROM customers
4 LIMIT 3
```
- Result Grid:** Displays the results of the executed query. The columns are: #, customer_id, first_name, last_name, birth_date, phone, address, city, state, and poin. The data is as follows:

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	poin
1	1	Babara	MacCaffrey	1986-03-28	781-932-9754	0 Sage Terrace	Waltham	MA	2273
2	2	Ines	Brushfield	1986-04-13	804-427-9456	14187 Commercial Trail	Hampton	VA	947
3	3	Freddi	Boagey	1985-02-07	719-724-7869	251 Springs Junction	Colorado Springs	CO	2967
- Status Bar:** Shows "Query Completed" at the bottom.

MySQL Workbench

Schemas: test

SQL File 11*

```

1 -- get top 3 data
2 • SELECT *
3   FROM customers
4   LIMIT 3;
5
6 -- get 3 data from between the data using offset
7 • SELECT *
8   FROM customers
9   LIMIT 6, 3;

```

Result Grid

#	customer_id	first_name	last_name	birth_date	phone	address	city	state	points
1	7	Ilene	Dowson	1964-08-30	615-641-4759	50 Lillian Crossing	Nashville	TN	1672
2	8	Thacher	Naseby	1993-07-17	941-527-3977	538 Mosinee Center	Sarasota	FL	205
3	9	Romola	Rumgay	1992-05-23	559-181-3744	3520 Ohio Trail	Visalia	CA	1486
*	HULL	NULL	NULL	NULL	NULL	NULL	HULL	NULL	NULL

Object Info Session

Schema: sql_store

customers 2 customers 3

Query Completed

INNER JOIN:

```
-- inner join to join 2 tables
SELECT *
FROM orders o
JOIN customers c
ON o.customer_id=c.customer_id;
```

```
SELECT o.order_id, c.first_name, c.last_name
FROM orders o
JOIN customers c
ON o.customer_id=c.customer_id;

SELECT *
FROM orders o, customers c
WHERE o.customer_id = c.customer_id;

-- joining across databases

SELECT *
FROM order_items oi
JOIN sql_inventory.products p
ON oi.product_id = p.product_id;

-- self join

SELECT
    e.employee_id,
    e.first_name,
    m.first_name
FROM employees e
JOIN employees m
ON e.reports_to = m.employee_id;

-- joining multiple tables

SELECT
    o.order_id,
    o.order_date,
    c.first_name,
    c.last_name,
    os.name AS status
FROM orders o
JOIN customers c
ON o.customer_id = c.customer_id
JOIN order_statuses os
ON o.status = os.order_status_id;
```

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Schemas: db, sql_hr, sql_inventory, sql_invoicing, sql_store, sys

Tables: customers, order_item_notes, order_items, orders, order_statuses, products, shippers

Views, Stored Procedures, Functions

Query 6: SELECT * FROM orders o JOIN customers c ON o.customer_id=c.customer_id;

Result Grid:

#	order_id	customer_id	order_date	status	comments	shipped_date	shipper_id	customer_id	first_name	last_name	birth_date	
1	1	6	2019-01-30	1	NULL	2018-08-03	4	7	Elka	Twiddell	1991-09-04	
2	2	7	2018-08-02	2	NULL	2018-08-03	4	7	Ilene	Dowson	1964-08-30	
3	3	8	2017-12-01	1	NULL	2018-08-03	4	7	Thacher	Naseby	1993-07-17	
4	4	2	2017-01-22	1	NULL	2018-08-03	4	7	Ines	Brushfield	1986-04-13	
5	5	5	2017-08-25	2	Aliquam erat volutpat. In congue.	2018-08-26	3	5	Clemmie	Betchley	1973-11-07	
6	6	10	2018-11-18	1	Mauris enim leo, rhoncus sed, vesti...	2018-09-23	4	2	Levy	Mynett	1969-10-13	
7	7	2	2018-09-22	2	Nulla mollis molestie lorem. Quisqu...	2018-09-23	4	2	Ines	Brushfield	1986-04-13	
8	8	5	2018-06-08	1	2017-07-06	2018-07-06	1	10	Clemmie	Betchley	1973-11-07	
9	9	10	2017-07-05	2	2018-04-22	2018-04-23	2	6	Levy	Mynett	1969-10-13	
10	10	6	2018-04-22	2	Elka	Twiddell	2018-04-23	2	6	Elka	Twiddell	1991-09-04

Object Info: Table: customers

Columns: customer_id int AI PK

Result 1

Query Completed

MySQL Workbench

Schemas: test

Query 6: orders, customers

```
1
2 -- inner join to join 2 tables
3 • SELECT *
4   FROM orders o
5   JOIN customers c
6     ON o.customer_id=c.customer_id;
7
8 • SELECT o.order_id, c.first_name, c.last_name
9   FROM orders o
10  JOIN customers c
11    ON o.customer_id=c.customer_id;
```

Result Grid

#	order_id	first_name	last_name
1	4	Ines	Brushfield
2	7	Ines	Brushfield
3	5	Clemmie	Betchley
4	8	Clemmie	Betchley
5	1	Elka	Twiddell
6	10	Elka	Twiddell
7	2	Ilene	Dowson
8	3	Thacher	Naseby
9	6	Levy	Mynett
10	9	Levy	Mynett

Object Info Session

Table: customers

Columns:

customer_id	int AI PK
4	
7	
5	
8	
1	
10	
2	
3	
6	
9	

Result 2 Result 3

Query Completed

MySQL Workbench

Schemas: test

```

File Edit View Query Database Server Tools Scripting Help
Schemas sql_hr sql_inventory sql_invoicing sql_store sys
sql_inner_join* orders customers
Limit to 1000 rows
1 • USE sql_store;
2
3 -- joining across databases
4
5 • SELECT *
6   FROM order_items oi
7   JOIN sql_inventory.products p
8     ON oi.product_id = p.product_id;
9
10

```

Result Grid

#	order_id	product_id	quantity	unit_price	product_id	name	quantity_in_stoc	unit_price
1	2	1	2	9.10	1	Foam Dinner Plate	70	1.21
2	6	1	4	8.65	1	Foam Dinner Plate	70	1.21
3	10	1	10	6.01	1	Foam Dinner Plate	70	1.21
4	5	2	3	9.89	2	Pork - Bacon,back Peameal	49	4.65
5	6	2	4	3.28	2	Pork - Bacon,back Peameal	49	4.65
6	3	3	10	9.12	3	Lettuce - Romaine, Heart	38	3.35
7	4	3	7	6.99	3	Lettuce - Romaine, Heart	38	3.35
8	6	3	4	7.46	3	Lettuce - Romaine, Heart	38	3.35
9	7	3	7	9.17	3	Lettuce - Romaine, Heart	38	3.35
10	1	4	4	3.74	4	Brocolinni - Gaylan, Chinese	90	4.53
11	2	4	4	1.66	4	Brocolinni - Gaylan, Chinese	90	4.53

Object Info Session

Table: customers

Columns:

- customer_id int AI PK

Result 6

Query Completed

MySQL Workbench

Schemas: test

Query Editor: sql_inner_join*

```
1 • USE sql_hr;
2
3 -- self join
4
5 • SELECT
6     e.employee_id,
7     e.first_name,
8     m.first_name
9 FROM employees e
10 JOIN employees m
11     ON e.reports_to = m.employee_id;
12
13
```

Result Grid:

#	employee_id	first_name	first_name
1	33391	D'arcy	Yovonnda
2	37851	Sayer	Yovonnda
3	40448	Mindy	Yovonnda
4	56274	Kerianne	Yovonnda
5	63196	Alaster	Yovonnda
6	67009	North	Yovonnda
7	67370	Elladine	Yovonnda
8	68249	Nisse	Yovonnda
9	72540	Guthrey	Yovonnda
10	72913	Kass	Yovonnda
11	75900	Virge	Yovonnda

Object Info: customers

Table: customers

Columns:

customer_id	int AI PK
33391	
37851	
40448	
56274	
63196	
67009	
67370	
68249	
72540	
72913	
75900	

Result 7

Query Completed

MySQL Workbench

Schemas: test

Query Editor: sql_inner_join*

```

1 -- joining multiple tables
2 • USE sql_store;
3 • SELECT
4     o.order_id,
5     o.order_date,
6     c.first_name,
7     c.last_name,
8     os.name AS status
9 FROM orders o
10 JOIN customers c
11     ON o.customer_id = c.customer_id
12 JOIN order_statuses os
13     ON o.status = os.order_status_id;
14

```

Result Grid:

#	order_id	order_date	first_name	last_name	status
1	8	2018-06-08	Clemmie	Betchley	Processed
2	6	2018-11-18	Levy	Mynett	Processed
3	4	2017-01-22	Ines	Brushfield	Processed
4	3	2017-12-01	Thacher	Naseby	Processed
5	1	2019-01-30	Elka	Twiddell	Processed
6	10	2018-04-22	Elka	Twiddell	Shipped
7	9	2017-07-05	Levy	Mynett	Shipped
8	7	2018-09-22	Ines	Brushfield	Shipped
9	5	2017-08-25	Clemmie	Betchley	Shipped
10	2	2018-08-02	Ilene	Dowson	Shipped

Object Info: Table: customers

Columns:

customer_id	int AI PK
-------------	-----------

Result 8

Query Completed

OUTER JOIN:

```

-- outer join to get all customers even if there is no order
SELECT
    c.customer_id,
    c.first_name,
    o.order_id

```

```

FROM customers c
LEFT JOIN orders o
  ON c.customer_id = o.customer_id
ORDER BY c.customer_id;

-- outer join to get all customers even if there is no order using right
-- join
SELECT
  c.customer_id,
  c.first_name,
  o.order_id
FROM orders o
RIGHT JOIN customers c
  ON c.customer_id = o.customer_id
ORDER BY c.customer_id;

-- outer joins between multiple tables
SELECT
  c.customer_id,
  c.first_name,
  o.order_id
FROM customers c
LEFT JOIN orders o
  ON c.customer_id = o.customer_id
JOIN shippers sh
  ON o.shipper_id = sh.shipper_id
ORDER BY c.customer_id;

-- self outer join
SELECT
  e.employee_id,
  e.first_name,
  m.first_name AS manager
FROM employees e
LEFT JOIN employees m
  ON e.reports_to = m.employee_id;

```

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Schemas

SCHEMAS

Filter objects

db
sql_hr
Tables
Views
Stored Procedures
Functions
sql_inventory
Tables
Views
Stored Procedures
Functions
sql_invoicing
sql_store
Tables
customers
order_item_notes
order_items
orders
order_statuses
products
shippers
Views
Stored Procedures
Functions
sys

Object Info Session

Table: customers

Columns:
customer_id int AI PK

Query 9

```

1
2 -- outer join to get all customers even if there is no order
3 • SELECT
4     c.customer_id,
5     c.first_name,
6     o.order_id
7 FROM customers c
8 LEFT JOIN orders o
9     ON c.customer_id = o.customer_id
10 ORDER BY c.customer_id;

```

Result Grid

#	customer_id	first_name	order_id
1	1	Babara	NULL
2	2	Ines	4
3	2	Ines	7
4	3	Freddi	NULL
5	4	Ambur	NULL
6	5	Clemmie	5
7	5	Clemmie	8
8	6	Elka	1
9	6	Elka	10
10	7	Ilene	2
11	8	Thacher	3
12	9	Romola	NULL
13	10	Levy	6
14	10	Levy	9

Result 1

Read Only

Query Completed

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Schemas

SCHEMAS

Filter objects

db
sql_hr
Tables
Views
Stored Procedures
Functions
sql_inventory
Tables
Views
Stored Procedures
Functions
sql_invoicing
Tables
customers
order_item_notes
order_items
orders
order_statuses
products
shippers
Views
Stored Procedures
Functions
sys

Object Info Session

Table: customers

Columns:
customer_id int AI PK

Query 9

```

6      o.order_id
7  FROM customers c
8  LEFT JOIN orders o
9    ON c.customer_id = o.customer_id
10   ORDER BY c.customer_id;
11
12 -- outer join to get all customers even if there is no order using right
13 -- join
14 •  SELECT
15      c.customer_id,
16      c.first_name,
17      o.order_id
18  FROM orders o
19  RIGHT JOIN customers c
20    ON c.customer_id = o.customer_id
21  ORDER BY c.customer_id;

```

Result Grid Filter Rows: Export: Wrap Cell Content:

#	customer_id	first_name	order_id
1	1	Babara	NULL
2	2	Ines	4
3	2	Ines	7
4	3	Freddi	NULL
5	4	Ambur	NULL
6	5	Clemmie	5
7	5	Clemmie	8
8	6	Elka	1
9	6	Elka	10
10	7	Ilene	2
11	8	Thacher	3
12	9	Romola	NULL
13	10	Levy	6
14	10	Levy	9

Result 2 Result 3 Read Only

Query Completed

MySQL Workbench

Schemas: test

Query 9

```

18  RIGHT JOIN customers c
19      ON c.customer_id = o.customer_id
20  ORDER BY c.customer_id;
21
22  -- outer joins between multiple tables
23 •  SELECT
24      c.customer_id,
25      c.first_name,
26      o.order_id
27  FROM customers c
28  LEFT JOIN orders o
29      ON c.customer_id = o.customer_id
30  JOIN shippers sh
31      ON o.shipper_id = sh.shipper_id
32  ORDER BY c.customer_id
33

```

Result Grid

#	customer_id	first_name	order_id
1	2	Ines	7
2	5	Clemmie	5
3	6	Elka	10
4	7	Ilene	2
5	10	Levy	9

Object Info Session

Table: customers

Columns:

- customer_id int AI PK

Result 4 Result 5 Result 6 Read Only

Query Completed

MySQL Workbench

Schemas: test

Query 9

```

1 • USE sql_hr;
2 -- self outer join
3 • SELECT
4     e.employee_id,
5     e.first_name,
6     m.first_name AS manager
7 FROM employees e
8 LEFT JOIN employees m
9     ON e.reports_to = m.employee_id;
10

```

Result Grid

#	employee_id	first_name	manager
1	33391	D'arcy	Yovonnda
2	37270	Yovonnda	HULL
3	37851	Sayer	Yovonnda
4	40448	Mindy	Yovonnda
5	56274	Kerianne	Yovonnda
6	63196	Alaster	Yovonnda
7	67009	North	Yovonnda
8	67370	Elladine	Yovonnda
9	68249	Nisse	Yovonnda
10	72540	Guthrey	Yovonnda
11	72913	Kass	Yovonnda
12	75900	Virge	Yovonnda
13	76196	Mirilla	Yovonnda
14	80529	Lynde	Yovonnda

Object Info Session

Table: customers

Columns:

customer_id	int AI PK
-------------	-----------

Result 10

Query Completed

USING, NATURAL JOIN, CARTESIAN JOIN

```

USE sql_store;
-- using clause
SELECT

```

```
o.order_id,
c.first_name
FROM orders o
JOIN customers c
USING (customer_id);

-- natural join
SELECT
o.order_id,
c.first_name
FROM orders o
NATURAL JOIN customers c;

-- cross join
SELECT
o.order_id,
c.first_name
FROM orders o
CROSS JOIN customers c;
```

MySQL Workbench

Schemas

SCHEMAS

Filter objects

db

sql_hr

Tables

Views

Stored Procedures

Functions

sql_inventory

Tables

Views

Stored Procedures

Functions

sql_invoicing

sql_store

Tables

customers

order_item_notes

order_items

orders

order_statuses

products

shippers

Views

Stored Procedures

Functions

sys

Object Info Session

Table: customers

Columns:

customer_id	int AI PK
-------------	-----------

Result Grid

Filter Rows:

Export: Wrap Cell Content:

#	order_id	first_name
1	4	Ines
2	7	Ines
3	5	Clemmie
4	8	Clemmie
5	1	Elka
6	10	Elka
7	2	Ilene
8	3	Thacher
9	6	Levy
10	9	Levy

Result 1

Read Only

Query Completed

```
1 • USE sql_store;
2     -- using clause
3 • SELECT
4         o.order_id,
5             c.first_name
6     FROM orders o
7     JOIN customers c
8         USING (customer_id);
```

MySQL Workbench

Schemas

SCHEMAS

Filter objects

db

sql_hr

Tables

Views

Stored Procedures

Functions

sql_inventory

Tables

Views

Stored Procedures

Functions

sql_invoicing

sql_store

Tables

customers

order_item_notes

order_items

orders

order_statuses

products

shippers

Views

Stored Procedures

Functions

sys

Object Info Session

Table: customers

Columns:

customer_id	int	AI	PK
-------------	-----	----	----

Query 10

```
1 • USE sql_store;
2   -- using clause
3 • SELECT
4     o.order_id,
5     c.first_name
6   FROM orders o
7   JOIN customers c
8     USING (customer_id);
9
10  -- natural join
11 • SELECT
12    o.order_id,
13    c.first_name
14  FROM orders o
15  NATURAL JOIN customers c;
```

Result Grid

#	order_id	first_name
1	4	Ines
2	7	Ines
3	5	Clemmie
4	8	Clemmie
5	1	Elka
6	10	Elka
7	2	Ilene
8	3	Thacher
9	6	Levy
10	9	Levy

Result 2 Result 3 Read Only

Query Completed

MySQL Workbench

Schemas: test

Query 10

```

7   JOIN customers c
8     USING (customer_id);
9
10   -- natural join
11 •  SELECT
12     o.order_id,
13     c.first_name
14   FROM orders o
15   NATURAL JOIN customers c;
16
17   -- cross join
18 •  SELECT
19     o.order_id,
20     c.first_name
21   FROM orders o
22   CROSS JOIN customers c;

```

Result Grid

#	order_id	first_name
1	10	Babara
2	9	Babara
3	7	Babara
4	5	Babara
5	2	Babara
6	8	Babara
7	6	Babara
8	4	Babara
9	3	Babara
10	1	Babara
11	10	Ines
12	9	Ines
13	7	Ines
14	5	Ines

Object Info Session

Table: customers

Columns:

- customer_id int AI PK
- first_name varchar(45)

Result 4 Result 5 Result 6 Read Only

Query Completed

INSERT:

```
-- inserting single entries
```

```
INSERT INTO customers
VALUES (
    DEFAULT,
    'John',
    'Smith',
    '1990-01-01',
    NULL,
    'address',
    'city',
    'CA',
    200
);

INSERT INTO customers(
    first_name,
    last_name,
    birth_date,
    address,
    city,
    state
)
VALUES (
    'John',
    'Smith',
    '1990-01-01',
    'address',
    'city',
    'CA'
);

-- inserting multiple entries

INSERT INTO shippers (name)
VALUES ('shipper1'),
       ('shipper2'),
       ('shipper3');
```

MySQL Workbench

Schemas: test

Query 11

```

1
2 •  INSERT INTO customers
3   VALUES (
4     DEFAULT,
5     'John',
6     'Smith',
7     '1990-01-01',
8     NULL,
9     'address',
10    'city',
11    'CA',
12    200
13 )

```

Action Output

#	Time	Action	Message
303	14:45:54	USE sql_store	0 row(s) affected
304	14:45:54	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
305	14:47:09	USE sql_store	0 row(s) affected
306	14:47:09	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
307	14:47:09	SELECT o.order_id, c.first_name FROM orders o WHERE o.order_id = 1	10 row(s) returned
308	14:48:11	USE sql_store	0 row(s) affected
309	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
310	14:48:11	SELECT o.order_id, c.first_name FROM orders o WHERE o.order_id = 1	10 row(s) returned
311	14:48:11	SELECT o.order_id, c.first_name FROM orders o WHERE o.order_id = 1	100 row(s) returned
312	15:10:48	INSERT INTO customers VALUES (DEFAULT, 'John', 'Smith', '1990-01-01', NULL, 'address', 'city', 'CA', 200)	1 row(s) affected

Query Completed

MySQL Workbench

Schemas: test

Query 11: shippers

```

1
2 -- inserting multiple entries
3
4 • INSERT INTO shippers (name)
5   VALUES ('shipper1'),
6         ('shipper2'),
7         ('shipper3');

```

Action Output:

#	Time	Action	Message
303	14:45:54	USE sql_store	0 row(s) affected
304	14:45:54	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
305	14:47:09	USE sql_store	0 row(s) affected
306	14:47:09	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
307	14:47:09	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
308	14:48:11	USE sql_store	0 row(s) affected
309	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
310	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
311	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	100 row(s) returned
312	15:10:48	INSERT INTO customers VALUES (DEFAULT, 'John', 'Doe', 'john.doe@example.com', 'Customer')	1 row(s) affected
313	15:16:25	INSERT INTO shippers (name) VALUES ('shipper1'), ('shipper2'), ('shipper3')	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
314	15:16:29	SELECT * FROM sql_store.shippers LIMIT 0, 1000	8 row(s) returned

Query Completed

MySQL Workbench

Schemas: test

Query 11: shippers

```
1 • SELECT * FROM sql_store.shippers;
```

Result Grid:

#	shipper_id	name
1	1	Hettinger LLC
2	2	Schinner-Predovic
3	3	Satterfield LLC
4	4	Mraz, Renner and Nolan
5	5	Waters, Mayert and Prohaska
6	6	shipper1
7	7	shipper2
8	8	shipper3
*	NULL	NULL

Object Info: Table: shippers

Columns:

- shipper_id smallint AI

Action Output:

#	Time	Action	Message
1			

Query Completed

COPY TABLE

```
--creating copy of a table
```

```
CREATE TABLE orders_archieved AS
SELECT * FROM orders;
```

MySQL Workbench

Schemas: test

Query 13

```
-- creating copy of a table
CREATE TABLE orders_archieved AS
SELECT * FROM orders;
```

Action Output

#	Time	Action	Message
303	14:45:54	USE sql_store	0 row(s) affected
304	14:45:54	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
305	14:47:09	USE sql_store	0 row(s) affected
306	14:47:09	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
307	14:47:09	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
308	14:48:11	USE sql_store	0 row(s) affected
309	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
310	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	10 row(s) returned
311	14:48:11	SELECT o.order_id, c.first_name FROM orders o JOIN customers c ON o.customer_id = c.customer_id	100 row(s) returned
312	15:10:48	INSERT INTO customers VALUES (DEFAULT, 'John', 'Doe', 'john.doe@example.com', 'Customer')	1 row(s) affected
313	15:16:25	INSERT INTO shippers (name) VALUES ('shipper1'), ('shipper2'), ('shipper3')	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
314	15:16:29	SELECT * FROM sql_store.shippers LIMIT 0, 1000	8 row(s) returned
315	15:22:19	CREATE TABLE orders_archieved AS SELECT * FROM orders	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0

Query Completed

MySQL Workbench

Schemas: test

Query 13: orders_archived

```
1 • SELECT * FROM sql_store.orders_archived;
```

Result Grid

#	order_id	customer_ic	order_date	status	comments	shipped_date	shipper_ic
1	1	6	2019-01-30	1	NULL	NULL	NULL
2	2	7	2018-08-02	2	NULL	2018-08-03	4
3	3	8	2017-12-01	1	NULL	NULL	NULL
4	4	2	2017-01-22	1	NULL	NULL	NULL
5	5	5	2017-08-25	2		2017-08-26	3
6	6	10	2018-11-18	1	Aliquam erat volutpat. In congue.	NULL	NULL
7	7	2	2018-09-22	2	NULL	2018-09-23	4
8	8	5	2018-06-08	1	Mauris enim leo, rhoncus sed, vesti...	NULL	NULL
9	9	10	2017-07-05	2	Nulla mollis molestie lorem. Quisqu...	2017-07-06	1
10	10	6	2018-04-22	2	NULL	2018-04-23	2

Object Info Session

Table: orders_archived

Columns:

- order_id int

orders_archived 1 Read Only

Query Completed

UPDATE/DELETE:

```
USE sql_invoicing;
-- updating single row
UPDATE invoices
SET payment_total=10, payment_date='2019-03-01'
WHERE invoice_id=1;

-- updating multiple rows
UPDATE invoices
SET
payment_total=invoice_total*0.5, payment_date=due_date
WHERE client_id=3;

-- using subqueries in updates
UPDATE invoices
SET
payment_total=invoice_total*0.5, payment_date=due_date
WHERE client_id=
(SELECT client_id
FROM clients
WHERE name='Myworks'
);

-- deleting rows
DELETE FROM invoices
WHERE client_id=
(SELECT client_id
FROM clients
WHERE name='Myworks'
);
```

MySQL Workbench

Schemas: test

Query 15

```

1 • USE sql_invoicing;
2 -- updating single row
3 • UPDATE invoices
4 SET payment_total=10, payment_date='2019-03-01'
5 WHERE invoice_id=1;

```

Action Output

#	Time	Action	Message
311	14:46:11	SELECT * FROM orders WHERE ...	100 rows(s) returned
312	15:10:48	INSERT INTO customers VALUES ('...', 'John', ...)	1 row(s) affected
313	15:16:25	INSERT INTO shippers (name) VALUES ('shipper1'), (...)	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
314	15:16:29	SELECT * FROM sql_store.shippers LIMIT 0, 1000	8 row(s) returned
315	15:22:19	CREATE TABLE orders_achieved AS SELECT * FROM orders WHERE ...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
316	15:22:50	SELECT * FROM sql_store.orders_achieved LIMIT 0, 1000	10 row(s) returned
317	15:28:03	UPDATE invoices SET payment_total=10, payment_date=...	Error Code: 1146. Table 'sql_invoicing' doesn't exist
318	15:28:36	USE sql_invoicing	0 row(s) affected
319	15:28:36	UPDATE invoices SET payment_total=10, payment_date=...	1 row(s) affected Rows matched: 1 Changed: 1

Query Completed

MySQL Workbench

Schemas: test

Query 15: invoices

```
1 • SELECT * FROM sql_invoicing.invoices;
```

Result Grid

#	invoice_ic	number	client_ic	invoice_tota	payment_tota	invoice_date	due_date	payment_date
1	1	91-953-3396	2	101.79	10.00	2019-03-09	2019-03-29	2019-03-01
2	2	03-898-6735	5	175.32	8.18	2019-06-11	2019-07-01	2019-02-12
3	3	20-228-0335	5	147.99	0.00	2019-07-31	2019-08-20	NULL
4	4	56-934-0748	3	152.21	0.00	2019-03-08	2019-03-28	NULL
5	5	87-052-3121	5	169.36	0.00	2019-07-18	2019-08-07	NULL
6	6	75-587-6626	1	157.78	74.55	2019-01-29	2019-02-18	2019-01-03
7	7	68-093-9863	3	133.87	0.00	2019-09-04	2019-09-24	NULL
8	8	78-145-1093	1	189.12	0.00	2019-05-20	2019-06-09	NULL
9	9	77-593-0081	5	172.17	0.00	2019-07-09	2019-07-29	NULL
10	10	48-266-1517	1	159.50	0.00	2019-06-30	2019-07-20	NULL
11	11	20-848-0181	3	126.15	0.03	2019-01-07	2019-01-27	2019-01-11
12	13	41-666-1035	5	135.01	87.44	2019-06-25	2019-07-15	2019-01-26
13	15	55-105-9605	3	167.29	80.31	2019-11-25	2019-12-15	2019-01-15

Table: invoices

Columns:

- invoice_id int PK

Object Info Session

invoices 1

Apply

Query Completed

MySQL Workbench

Schemas: test

Query 15: invoices

```

1 • USE sql_invoicing;
2   -- updating single row
3 • UPDATE invoices
4   SET payment_total=10, payment_date='2019-03-01'
5   WHERE invoice_id=1;
6
7   -- updating multiple rows
8 • UPDATE invoices
9   SET
10  payment_total=invoice_total*0.5, payment_date=due_date
11 WHERE client_id=3;
12
13

```

Action Output

#	Time	Action	Message
313	15:16:25	INSERT INTO shippers (name) VALUES ('shipper1'), (...)	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
314	15:16:29	SELECT * FROM sql_store.shippers LIMIT 0, 1000	8 row(s) returned
315	15:22:19	CREATE TABLE orders_archived AS SELECT * FROM ord...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
316	15:22:50	SELECT * FROM sql_store.orders_archived LIMIT 0, 1000	10 row(s) returned
317	15:28:03	UPDATE invoices SET payment_total=10, payment_date=...	Error Code: 1146. Table 'sql_...'. Error: 1265 Data truncated for column 'payment_date' at row 1
318	15:28:36	USE sql_invoicing	0 row(s) affected
319	15:28:36	UPDATE invoices SET payment_total=10, payment_date=...	1 row(s) affected Rows matched: 1 Changed: 1
320	15:29:01	SELECT * FROM sql_invoicing.invoices LIMIT 0, 1000	17 row(s) returned
321	15:32:34	USE sql_invoicing	0 row(s) affected
322	15:32:34	UPDATE invoices SET payment_total=10, payment_date=...	0 row(s) affected Rows matched: 1 Changed: 0
323	15:32:34	UPDATE invoices SET payment_total=invoice_total*0.5, ...	5 row(s) affected, 4 warning(s) 1265 Data truncated for column 'payment_total' at row 1 1265 Data truncated for column 'payment_date' at row 1 1265 Data truncated for column 'payment_total' at row 1 1265 Data truncated for column 'payment_date' at row 1 Rows matched: 5 Changed: 5

Table: invoices

Columns:

```

invoice_id int PK

```

Query Completed

MySQL Workbench

Schemas: test

Query 15: invoices

```
1 • SELECT * FROM sql_invoicing.invoices;
```

Result Grid:

#	invoice_id	number	client_id	invoice_total	payment_total	invoice_date	due_date	payment_date
1	1	91-953-3396	2	101.79	10.00	2019-03-09	2019-03-29	2019-03-01
2	2	03-898-6735	5	175.32	8.18	2019-06-11	2019-07-01	2019-02-12
3	3	20-228-0335	5	147.99	0.00	2019-07-31	2019-08-20	NULL
4	4	56-934-0748	3	152.21	76.11	2019-03-08	2019-03-28	2019-03-28
5	5	87-052-3121	5	169.36	0.00	2019-07-18	2019-08-07	NULL
6	6	75-587-6626	1	157.78	74.55	2019-01-29	2019-02-18	2019-01-03
7	7	68-093-9863	3	133.87	66.94	2019-09-04	2019-09-24	2019-09-24
8	8	78-145-1093	1	189.12	0.00	2019-05-20	2019-06-09	NULL
9	9	77-593-0081	5	172.17	0.00	2019-07-09	2019-07-29	NULL
10	10	48-266-1517	1	159.50	0.00	2019-06-30	2019-07-20	NULL
11	11	20-848-0181	3	126.15	63.08	2019-01-07	2019-01-27	2019-01-27
12	13	41-666-1035	5	135.01	87.44	2019-06-25	2019-07-15	2019-01-26
13	15	55-105-9605	3	167.29	83.65	2019-11-25	2019-12-15	2019-12-15

Table: invoices

Columns:

- invoice_id int PK

Object Info Session

invoices 1

Query Completed

MySQL Workbench

Schemas: test

Query 15: invoices

```

15  SET
16      payment_total=invoice_total*0.5, payment_date=due_date
17  WHERE client_id=
18      (SELECT client_id
19          FROM clients
20          WHERE name='Myworks'
21      );
22
23  -- deleting rows
24 •  DELETE FROM invoices
25  WHERE client_id=
26      (SELECT client_id
27          FROM clients
28          WHERE name='Myworks'
29      );
30
31

```

Action Output:

#	Time	Action	Message
328	15:35:15	UPDATE invoices SET payment_total=invoice_total*0.5, ...	1265 Data truncated for column 'payment_total'. Rows matched: 1 Changed: 1
329	15:35:36	SELECT * FROM sql_invoicing.invoices LIMIT 0, 1000	17 row(s) returned
330	15:37:16	USE sql_invoicing	0 row(s) affected
331	15:37:16	UPDATE invoices SET payment_total=10, payment_date=...	1 row(s) affected Rows matched: 1 Changed: 1 0 row(s) affected, 4 warning(s)
332	15:37:16	UPDATE invoices SET payment_total=invoice_total*0.5, ...	1265 Data truncated for column 'payment_total'. 1265 Data truncated for column 'payment_date'. 1265 Data truncated for column 'due_date'. Rows matched: 5 Changed: 0
333	15:37:16	UPDATE invoices SET payment_total=invoice_total*0.5, ...	1 row(s) affected, 1 warning(s) 1265 Data truncated for column 'payment_total'. Rows matched: 1 Changed: 1
334	15:37:16	DELETE FROM invoices WHERE client_id= (SELE...	1 row(s) affected

Object Info Session

Table: invoices

Columns:

```

invoice_id int PK

```

Query Completed