

SQL Basics

Start MySQL Shell

```
MySQL Shell

MySQL JS > \connect root@localhost:3306
Creating a session to 'root@localhost:3306'
Fetching schema names for autocompletion... Press ^C to stop.
Your MySQL connection id is 11
Server version: 8.0.13 MySQL Community Server - GPL
No default schema selected; type \use <schema> to set one.

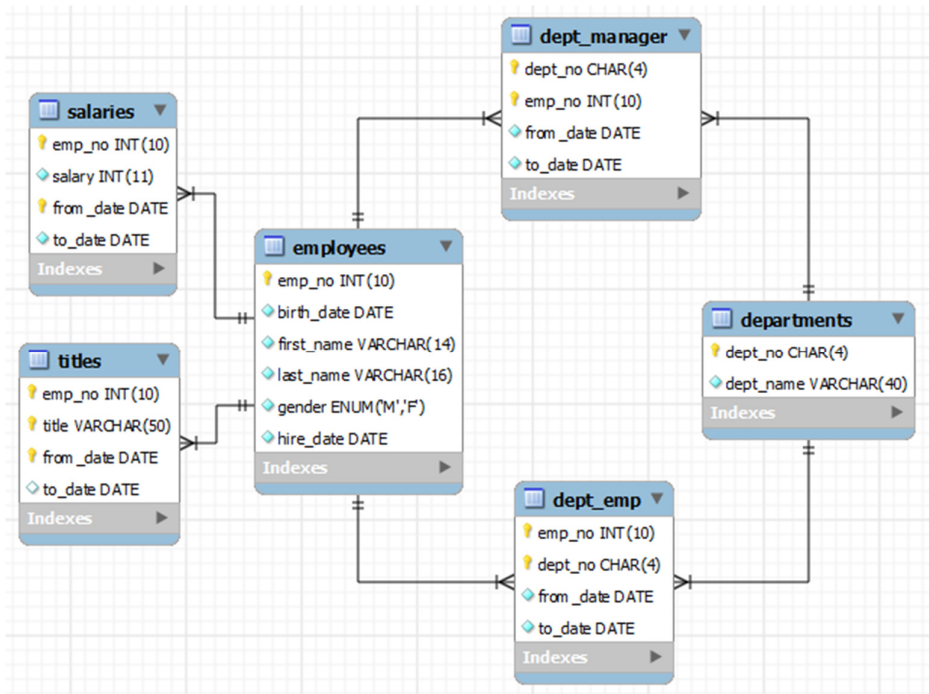
MySQL localhost:3306 ssl JS > \sql
Switching to SQL mode... Commands end with ;

MySQL localhost:3306 ssl SQL > show databases;
+-----+
| Database |
+-----+
| employees |
| information_schema |
| mysql |
| newstar |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
8 rows in set (0.0007 sec)

MySQL localhost:3306 ssl SQL > use employees;
Default schema set to 'employees'.
Fetching table and column names from 'employees' for auto-completion... Press ^C to stop.

MySQL localhost:3306 ssl employees SQL > show tables;
+-----+
| Tables_in_employees |
+-----+
| current_dept_emp |
| departments |
| dept_emp |
| dept_emp_latest_date |
| dept_manager |
| employees |
+-----+
```

The Employees database contain our Employees data. The Employees database schema or EER diagram is as follows:



SQL Databases

To create a database:

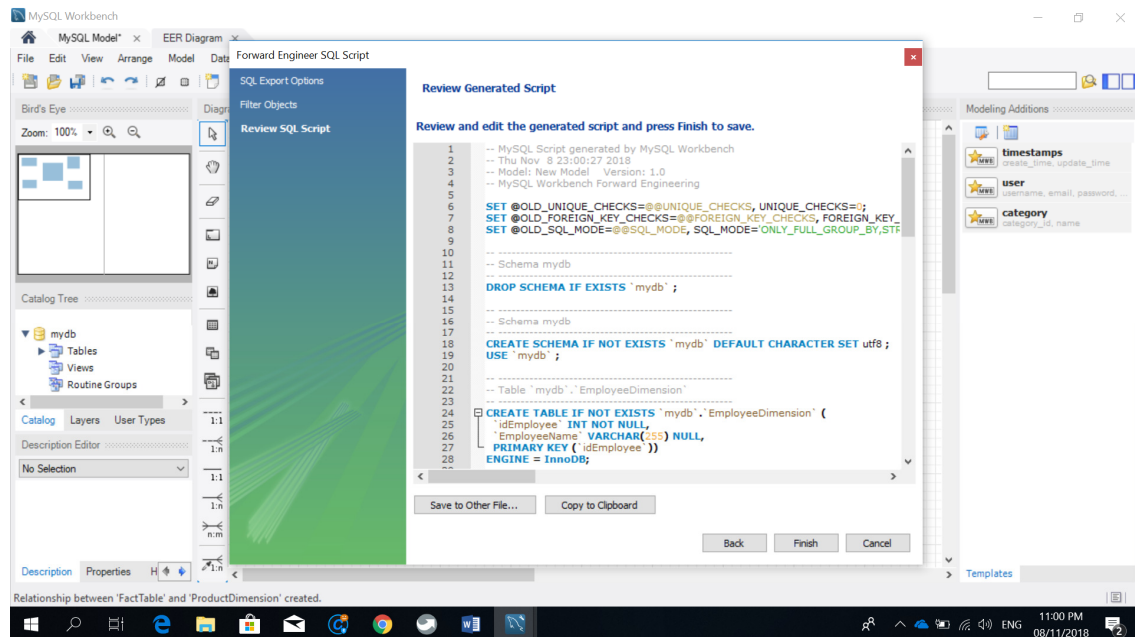
```
CREATE DATABASE databasename;
```

To delete a database:

```
DROP DATABASE databasename;
```

Source: https://www.w3schools.com/sql/sql_where.asp

SQL Create Table



You can use the MySQL Workbench to design the ERD diagram and export the create table SQL scripts.

To delete a table, you can use:

```
DROP TABLE table_name;
```

To alter a table, you can use:

```
ALTER TABLE table_name
ADD column_name datatype;
```

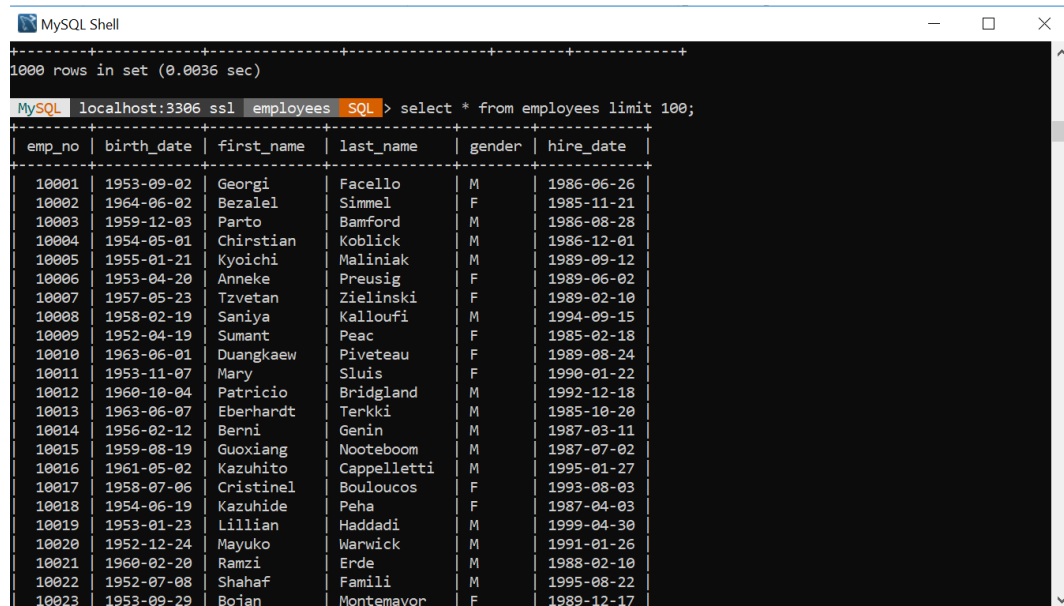
Source: https://www.w3schools.com/sql/sql_where.asp

SQL Select

To show the top 100 content in Employees table:

Select * from employees

limit 100;



MySQL Shell

1000 rows in set (0.0036 sec)

```
MySQL localhost:3306 ssl employees SQL > select * from employees limit 100;
```

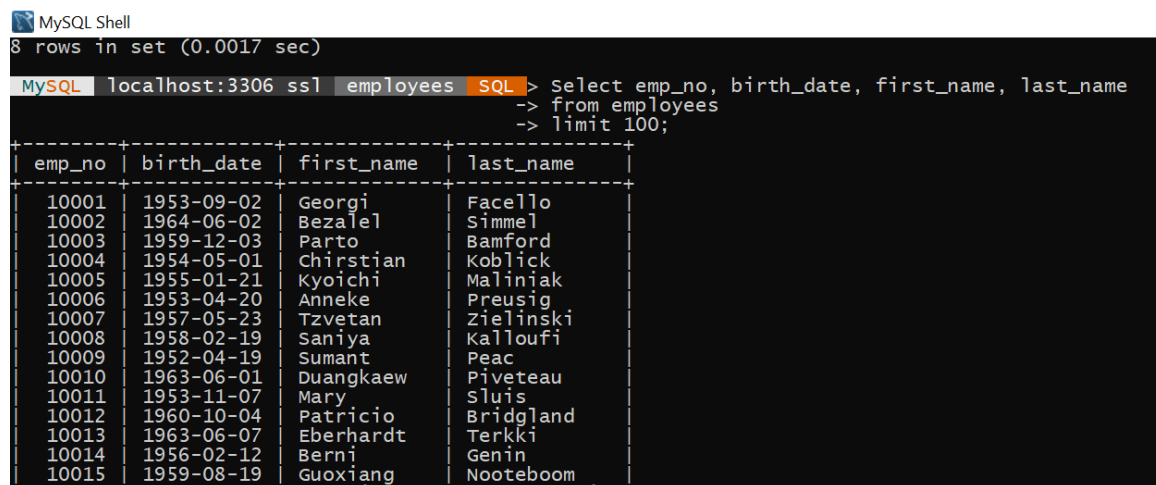
emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Chirstian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-09-12
10006	1953-04-20	Anneke	Preusig	F	1989-06-02
10007	1957-05-23	Tzvetan	Zielinski	F	1989-02-10
10008	1958-02-19	Saniya	Kalloufi	M	1994-09-15
10009	1952-04-19	Sumant	Peac	F	1985-02-18
10010	1963-06-01	Duangkaew	Piveteau	F	1989-08-24
10011	1953-11-07	Mary	Sluis	F	1990-01-22
10012	1960-10-04	Patricio	Bridgland	M	1992-12-18
10013	1963-06-07	Eberhardt	Terkki	M	1985-10-20
10014	1956-02-12	Berni	Genin	M	1987-03-11
10015	1959-08-19	Guoxiang	Nooteboom	M	1987-07-02
10016	1961-05-02	Kazuhiro	Cappelletti	M	1995-01-27
10017	1958-07-06	Cristinel	Bouloucos	F	1993-08-03
10018	1954-06-19	Kazuhide	Peha	F	1987-04-03
10019	1953-01-23	Lillian	Haddadi	M	1999-04-30
10020	1952-12-24	Mayuko	Warwick	M	1991-01-26
10021	1960-02-20	Ramzi	Erde	M	1988-02-10
10022	1952-07-08	Shahaf	Famili	M	1995-08-22
10023	1953-09-29	Bojan	Montemayor	F	1989-12-17

To show top 100 content for emp_no, birth_date, first_name, last_name from employees table:

Select emp_no, birth_date, first_name, last_name

from employees

limit 100;



MySQL Shell

8 rows in set (0.0017 sec)

```
MySQL localhost:3306 ssl employees SQL > select emp_no, birth_date, first_name, last_name  
-> from employees  
-> limit 100;
```

emp_no	birth_date	first_name	last_name
10001	1953-09-02	Georgi	Facello
10002	1964-06-02	Bezalel	Simmel
10003	1959-12-03	Parto	Bamford
10004	1954-05-01	Chirstian	Koblick
10005	1955-01-21	Kyoichi	Maliniak
10006	1953-04-20	Anneke	Preusig
10007	1957-05-23	Tzvetan	Zielinski
10008	1958-02-19	Saniya	Kalloufi
10009	1952-04-19	Sumant	Peac
10010	1963-06-01	Duangkaew	Piveteau
10011	1953-11-07	Mary	Sluis
10012	1960-10-04	Patricio	Bridgland
10013	1963-06-07	Eberhardt	Terkki
10014	1956-02-12	Berni	Genin
10015	1959-08-19	Guoxiang	Nooteboom

Select Distinct

To show the distinct rows of top 100 content in employees table:

Select distinct *

from employees

limit 100;

MySQL Shell

100 rows in set (0.0006 sec)

```
MySQL localhost:3306 ssl employees SQL > Select distinct *  
-> from employees  
-> limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Chirstian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-09-12
10006	1953-04-20	Anneke	Preusig	F	1989-06-02
10007	1957-05-23	Tzvetan	Zielinski	F	1989-02-10
10008	1958-02-19	Saniya	Kalloufi	M	1994-09-15
10009	1952-04-19	Sumant	Peac	F	1985-02-18
10010	1963-06-01	Duangkaew	Piveteau	F	1989-08-24
10011	1953-11-07	Mary	Sluis	F	1990-01-22
10012	1960-10-04	Patricio	Bridgland	M	1992-12-18
10013	1963-06-07	Eberhardt	Terkki	M	1985-10-20
10014	1956-02-12	Berni	Genin	M	1987-03-11
10015	1959-08-19	Guoxiang	Nooteboom	M	1987-07-02
10016	1961-05-02	Kazuhiro	Cappelletti	M	1995-01-27
10017	1958-07-06	Cristinel	Bouloucos	F	1993-08-03
10018	1954-06-19	Kazuhide	Peha	F	1987-04-03
10019	1953-01-23	Lillian	Haddadi	M	1999-04-30
10020	1952-12-24	Mayuko	Warwick	M	1991-01-26
10021	1960-02-20	Ramzi	Erde	M	1988-02-10
10022	1952-07-08	Shahaf	Famili	M	1995-08-22
10023	1953-09-29	Bojan	Montemayor	F	1989-12-17
10024	1958-09-05	Suzette	Pettey	F	1997-05-19
10025	1958-10-31	Prasadram	Heyers	M	1987-08-17
10026	1953-04-03	Yongqiao	Berztiss	M	1995-03-20
10027	1962-07-10	Divier	Reistad	F	1989-07-07
10028	1963-11-26	Domenick	Tempesti	M	1991-10-22

To show the distinct values from gender column in employees table:

Select distinct gender from employees;

```
MySQL localhost:3306 ssl employees SQL > Select distinct gender from employees;
```

gender
M
F

2 rows in set (0.1923 sec)

To show the number of different (distinct) employees' gender:

Select count(distinct gender) from employees;

```
MySQL localhost:3306 ssl employees SQL > select count(distinct gender) from employees;
```

count(distinct gender)
2

1 row in set (1.5537 sec)

Where Clause

To show the top 1000 rows of employees with gender “male”:

Select * from

employees

where gender='M'

limit 100;

```
MySQL localhost:3306 ssl employees SQL > Select * from employees where gender='M' limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Chirstian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-09-12
10008	1958-02-19	Saniya	Kalloufi	M	1994-09-15
10012	1960-10-04	Patricio	Bridgland	M	1992-12-18
10013	1963-06-07	Eberhardt	Terkki	M	1985-10-20
10014	1956-02-12	Berni	Genin	M	1987-03-11
10015	1959-08-19	Guoxiang	Nooteboom	M	1987-07-02
10016	1961-05-02	Kazuhito	Cappelletti	M	1995-01-27
10019	1953-01-23	Lillian	Haddadi	M	1999-04-30
10020	1952-12-24	Mayuko	Warwick	M	1991-01-26
10021	1960-02-20	Ramzi	Erde	M	1988-02-10
10022	1952-07-08	Shahaf	Famili	M	1995-08-22
10025	1958-10-31	Prasadram	Heyers	M	1987-08-17
10026	1953-04-03	Yongqiao	Berztiss	M	1995-03-20
10028	1963-11-26	Domenick	Tempesti	M	1991-10-22
10029	1956-12-13	Otmar	Herbst	M	1985-11-20
10030	1958-07-14	Elvis	Demeyer	M	1994-02-17
10031	1959-01-27	Karsten	Joslin	M	1991-09-01
10033	1956-11-14	Arif	Merlo	M	1987-03-18
10034	1962-12-29	Bader	Swan	M	1988-09-21
10035	1953-02-08	Alain	Chappelet	M	1988-09-05
10036	1959-08-10	Adamantios	Portugali	M	1992-01-03
10037	1963-07-22	Pradeep	Makrucki	M	1990-12-05
10038	1960-07-20	Huan	Lortz	M	1989-09-20
10039	1959-10-01	Alejandro	Brender	M	1988-01-19
10043	1960-09-19	Yishay	Tzvieli	M	1990-10-20
10045	1957-08-14	Moss	Shanbhogue	M	1989-09-02
10046	1960-07-23	Lucien	Rosenbaum	M	1992-06-20
10047	1952-06-29	Zvonko	Nyanchama	M	1989-03-31
10048	1963-07-11	Florian	Svetitskiy	M	1985-02-24

Operators in Where clause

Operator	Description
=	Equal
<>	Not equal. Note: In some versions of SQL this operator may be written as !=
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal
BETWEEN	Between a certain range
LIKE	Search for a pattern
IN	To specify multiple possible values for a column

Source: https://www.w3schools.com/sql/sql_where.asp

SQL And, Or, Not

To select the employees whose gender is male and the birth_date is between 1960 to 1980:

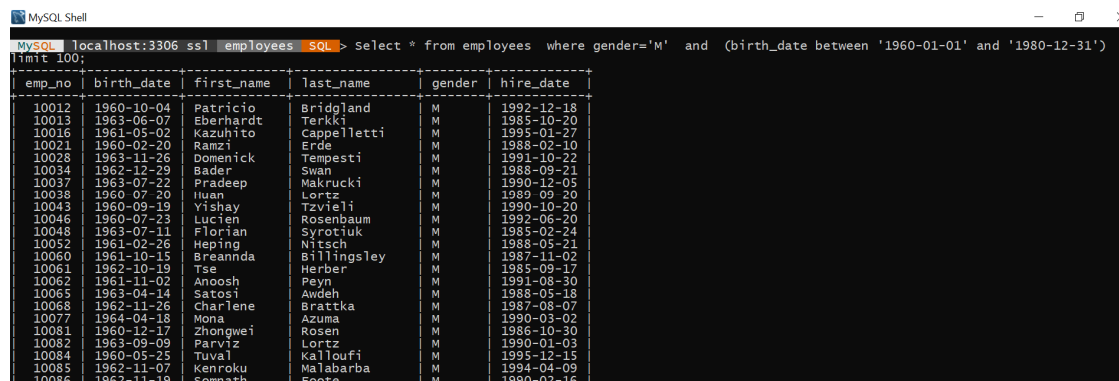
Select * from employees

where gender='M'

and

(birth_date between '1960-01-01' and '1980-12-31')

limit 100;



```
MySQL localhost:3306 ssl employees SQL> Select * from employees where gender='M' and (birth_date between '1960-01-01' and '1980-12-31') limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10012	1960-10-04	Patricio	Bridgland	M	1992-12-18
10013	1963-06-07	Eberhardt	Terkki	M	1985-10-20
10016	1961-05-02	Kazuhito	Cappelletti	M	1995-01-27
10021	1960-02-20	Ramzi	Erde	M	1988-02-10
10028	1963-11-26	Domenick	Tempesti	M	1991-10-22
10034	1962-12-29	Bader	Swan	M	1988-09-21
10037	1963-07-22	Pradeep	Makrucki	M	1990-12-05
10038	1960-07-20	Huan	Lortz	M	1989-09-20
10043	1960-09-19	Yishay	Tzvieli	M	1990-10-20
10046	1960-07-23	Lucien	Rosenbaum	M	1992-06-20
10048	1963-07-11	Florian	Syrotiuk	M	1985-02-24
10052	1961-02-26	Heping	Nitsch	M	1988-05-21
10060	1961-10-15	Breannnda	Billingsley	M	1987-11-02
10061	1962-10-19	Tse	Herber	M	1985-09-17
10062	1961-11-02	Anoosh	Peyn	M	1991-08-30
10065	1963-04-14	Satosi	Awdeh	M	1988-05-18
10068	1962-11-26	Charlene	Brattka	M	1987-08-07
10077	1964-04-18	Mona	Azuma	M	1990-03-02
10081	1960-12-17	Zhongwei	Rosen	M	1986-10-30
10082	1963-09-09	Parvizi	Lortz	M	1990-01-03
10084	1960-05-25	Tuval	Kalloufi	M	1995-12-15
10085	1962-11-07	Kenroku	Malabarba	M	1994-04-09
10086	1962-11-19	Somnath	Egote	M	1990-02-16

To select the employees whose gender is male or the birth_date is between 1960 to 1980:

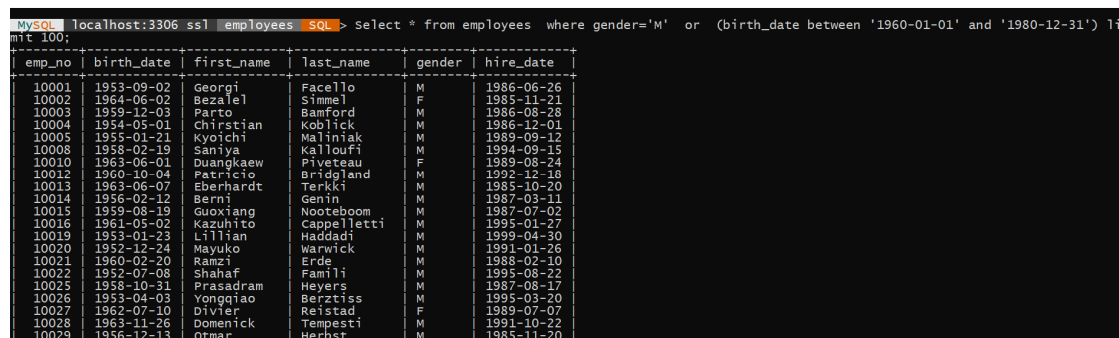
Select * from employees

where gender='M'

or

(birth_date between '1960-01-01' and '1980-12-31')

limit 100;



```
MySQL localhost:3306 ssl employees SQL> Select * from employees where gender='M' or (birth_date between '1960-01-01' and '1980-12-31') limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezael	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Christian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-08-12
10008	1958-02-19	Saniya	Kalloufi	M	1994-09-15
10010	1963-06-01	Duangkaew	Piveteau	F	1989-08-24
10012	1960-10-04	Patricio	Bridgland	M	1992-12-18
10013	1963-06-07	Eberhardt	Terkki	M	1985-10-20
10014	1956-02-12	Berni	Gemin	M	1987-03-11
10015	1959-08-19	Guoxiang	Nooteboom	M	1987-07-02
10016	1961-05-02	Kazuhito	Cappelletti	M	1995-01-27
10019	1953-01-23	Lillian	Haddadi	M	1999-04-30
10020	1952-12-24	Mayuko	Warwick	M	1991-01-26
10021	1960-02-20	Ramzi	Erde	M	1988-02-10
10022	1952-07-08	Shahaf	Famili	M	1995-08-22
10025	1958-10-31	Prasadram	Heyers	M	1987-08-17
10026	1953-04-03	Yongqiao	Bertziss	M	1995-03-20
10027	1962-07-10	Olivier	Reistad	F	1989-07-07
10028	1963-11-26	Domenick	Tempesti	M	1991-10-22
10029	1956-12-13	Otmar	Herbst	M	1985-11-20

To select the employees whose gender is not male:

Select * from employees

where not

gender='M'

limit 100;

MySQL Shell

499995	1958-09-24	Dekang	Lichtner	F	1993-01-12
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120051 rows in set (0.0029 sec)

```
MySQL localhost:3306 ssl employees SQL> select * from employees where not gender='M' limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10006	1953-04-20	Anneke	Preusig	F	1989-06-02
10007	1957-05-23	Tzvetan	Zielinski	F	1989-02-10
10009	1952-04-19	Sumant	Peac	F	1985-02-18
10010	1963-06-01	Duangkaew	Piveteau	F	1989-08-24
10011	1953-11-07	Mary	Sluis	F	1990-01-22
10017	1958-07-06	Cristinel	Bouloucos	F	1993-08-03
10018	1954-06-19	Kazuhide	Peha	F	1987-04-03
10023	1953-09-29	Bojan	Montemayor	F	1989-12-17
10024	1958-09-05	Suzette	Pettey	F	1997-05-19
10027	1962-07-10	Divier	Reistad	F	1989-07-07
10032	1960-08-09	Jeong	Reistad	F	1990-06-20
10040	1959-09-13	Weiyi	Meriste	F	1993-02-14
10041	1959-08-27	Uri	Lenart	F	1989-11-12
10042	1956-02-26	Mary	Stamatiev	F	1993-02-21

SQL Order By

To select all employees and sort the birth_date by ascending order:

Select * from employees

order by birth_date

limit 100;

MySQL Shell

221356	1952-02-03	Pradeep	Hagimont	M	1987-09-24
294298	1952-02-03	Vesna	Coney	M	1999-06-28

100 rows in set (0.6714 sec)

```
MySQL localhost:3306 ssl employees SQL> select * from employees
-> order by birth_date
-> limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
406121	1952-02-01	Supot	Remmele	M	1989-01-27
91374	1952-02-01	Eishiro	Kuzuoka	M	1992-02-12
65308	1952-02-01	Jouni	Pocchiola	M	1985-03-10
237571	1952-02-01	Ronghao	Schaad	M	1988-07-10
87461	1952-02-01	Moni	Decaestecker	M	1986-10-06
207658	1952-02-01	Kiyokazu	Whitcomb	M	1988-07-26
498106	1952-02-02	Shai	Calkin	M	1990-12-02
405962	1952-02-02	Moto	Staudhammer	M	1995-02-20
409040	1952-02-02	Mayuko	Pardalos	M	1991-07-03
94615	1952-02-02	Toshimi	Bruckman	M	1989-04-29
93928	1952-02-02	Tomoyuki	Axelband	F	1987-09-08
244265	1952-02-02	Pantung	Halavi	M	1993-11-12
51486	1952-02-02	Jianwen	Sigstam	F	1989-07-20
73959	1952-02-02	True	Denny	M	1994-05-25
467161	1952-02-02	Visit	Demos	F	1986-06-25
22614	1952-02-02	Dung	Madeira	M	1989-01-24
280643	1952-02-02	Dmitry	Peroz	M	1987-01-12
429276	1952-02-02	Juyoung	Seghrouchni	M	1992-08-17
423460	1952-02-02	wuxu	Miara	M	1991-10-10
103295	1952-02-02	Shigehito	Sommer	F	1992-03-15
430690	1952-02-02	Huican	Marquardt	M	1991-05-17
234728	1952-02-02	Kolar	Chepyzhov	M	1992-01-24
242509	1952-02-02	Rosalyn	Hebden	F	1986-02-01
296735	1952-02-02	Mamdouh	Gischer	M	1986-07-24
101519	1952-02-02	Marek	Macedo	M	1985-05-06
462007	1952-02-02	Rasiah	Smeets	M	1995-03-09
274355	1952-02-02	Mara	Pfau	M	1987-08-09
40660	1952-02-02	Piyush	Erbe	F	1988-04-04
282473	1952-02-02	Vidar	Eppinger	M	1989-12-02
279510	1952-02-02	Makoto	Munck	F	1986-01-26

To select all employees and sort the birth_date by descending order:

Select * from employees

order by birth_date desc

limit 100;

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100 rows in set (0.4587 sec)

```
MySQL localhost:3306 ssl employees SQL > Select * from employees
-> order by birth_date desc
-> limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
457832	1965-02-01	Jackson	Zielinski	F	1985-04-04
424584	1965-02-01	Kagan	Dredge	M	1994-02-26
298953	1965-02-01	Zita	Syang	F	1995-06-16
241917	1965-02-01	Wuxu	Poupard	M	1987-01-23
471397	1965-02-01	Nigel	Zirintsis	F	1995-01-20
287323	1965-02-01	Steve	Dengi	M	1987-10-07
299737	1965-02-01	Patricio	Itzfeldt	M	1985-05-21
223595	1965-02-01	Chiranjit	Dredge	M	1994-11-10
106242	1965-02-01	Nevio	Thisen	M	1988-03-25
470472	1965-02-01	Zhiguo	Staudhammer	F	1985-12-03
248758	1965-02-01	Snehasis	Muhlberg	M	1991-07-16
243077	1965-02-01	Kazunori	Perz	F	1986-08-28
431759	1965-02-01	Alassane	Ramsay	M	1987-11-05
272860	1965-02-01	Minghong	Candan	F	1994-02-10
235729	1965-02-01	Henk	Anger	M	1993-01-19
407837	1965-02-01	Fei	Erez	M	1986-10-15
211569	1965-02-01	Zhonghua	Snyers	F	1986-11-06
459685	1965-02-01	Hirochika	Goldhammer	M	1986-08-25
270794	1965-02-01	Dannz	Zhang	M	1990-10-24
240132	1965-02-01	Mizuhito	Kobara	F	1994-09-13
248351	1965-02-01	Jaana	Milicia	M	1985-06-02
222616	1965-02-01	Badri	Schapiro	F	1995-12-08
217800	1965-02-01	Shay	Servieres	F	1987-04-11
59869	1965-02-01	Zsolt	Riefers	M	1987-09-25
214866	1965-02-01	Gopalakrishnan	Angel	F	1985-09-19
74344	1965-02-01	Hiroyasu	Provine	M	1994-11-25
37592	1965-02-01	Berni	Stranks	M	1985-11-05
66702	1965-02-01	Deniz	Thibadeau	F	1986-03-11
266206	1965-02-01	Zsolt	Anily	F	1985-08-19
109062	1965-02-01	Jamaludin	Kandlur	M	1985-05-26
411906	1965-02-01	Anneli	Pappas	F	1990-07-09
93549	1965-02-01	Arie	Coullard	F	1986-11-01
11157	1965-02-01	Mario	Cochrane	M	1985-03-30
86422	1965-02-01	Jaewon	Thummel	F	1985-09-14
270792	1965-02-01	Domenico	Wendorf	M	1988-09-08
80850	1965-02-01	Koldo	Luit	M	1993-11-19

SQL Insert

To insert the following data into employees:

Emp_no: 500001

Birth_date: '1964-06-02'

First_name: 'Goh'

Last_name: 'M. H.'

Gender: 'M'

Hire_date: '1987-09-21'

Insert into employees

Values(500001, '1964-06-02', 'Goh', 'M. H.', 'M', '1987-09-21');

```
MySQL localhost:3306 ssl employees SQL> insert into employees values(500001, '1964-06-02', 'Goh', 'M. H.', 'M', '1987-09-21');
Query OK, 1 row affected (0.1323 sec)
```

To view the inserted data:

```
MySQL localhost:3306 ssl employees SQL> select * from employees where emp_no = 500001;
+-----+-----+-----+-----+-----+-----+
| emp_no | birth_date | first_name | last_name | gender | hire_date |
+-----+-----+-----+-----+-----+-----+
| 500001 | 1964-06-02 | Goh       | M. H.     | M      | 1987-09-21 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.0006 sec)

MySQL localhost:3306 ssl employees SQL> _
```

We can also use:

Insert into employees (emp_no, birth_date, first_name, last_name, gender, hire_date)

Values(500001, '1964-06-02', 'Goh', 'M. H.', 'M', '1987-09-21');

Note: If we insert the data with all columns values, we do not need to state the column names. If we insert only some columns, we will need to state the column names.

SQL NULL values

To select all employees where the last_name is not null:

Select * from employees

Where last_name is not null

limit 100;

```
MySQL Shell
+-----+-----+-----+-----+-----+-----+
| 500001 | 1964-06-02 | Goh       | M. H.     | M      | 1987-09-21 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.0006 sec)

MySQL localhost:3306 ssl employees SQL> Select * from employees
-> where last_name is not null
-> limit 100;
+-----+-----+-----+-----+-----+-----+
| emp_no | birth_date | first_name | last_name | gender | hire_date |
+-----+-----+-----+-----+-----+-----+
| 10001  | 1953-09-02 | Georgi    | Facello   | M      | 1986-06-26 |
| 10002  | 1964-06-02 | Bezalel   | Simmel    | F      | 1985-11-21 |
| 10003  | 1959-12-03 | Parto     | Bamford   | M      | 1986-08-28 |
| 10004  | 1954-05-01 | Chirstian | Koblick   | M      | 1986-12-01 |
| 10005  | 1955-01-21 | Kyoichi   | Maliniak  | M      | 1989-09-12 |
| 10006  | 1953-04-20 | Anneke    | Preusig   | F      | 1989-06-02 |
| 10007  | 1957-05-23 | Tzvetan   | Zielinski | F      | 1989-02-10 |
| 10008  | 1958-02-19 | Saniya    | Kalloufi  | M      | 1994-09-15 |
| 10009  | 1952-04-19 | Sumant    | Peac      | F      | 1985-02-18 |
| 10010  | 1963-06-01 | Duangkaew | Piveteau  | F      | 1989-08-24 |
| 10011  | 1953-11-07 | Mary      | Sluis     | F      | 1990-01-22 |
| 10012  | 1960-10-04 | Patricio  | Bridgland | M      | 1992-12-18 |
| 10013  | 1963-06-07 | Eberhardt | Terkki    | M      | 1985-10-20 |
| 10014  | 1956-02-12 | Berni     | Genin     | M      | 1987-03-11 |
| 10015  | 1959-08-19 | Guoxiang  | Nooteboom | M      | 1987-07-02 |
| 10016  | 1961-05-02 | Kazuhito  | Cappelletti | M      | 1995-01-27 |
| 10017  | 1958-07-06 | Cristinel | Bouloucos | F      | 1993-08-03 |
| 10018  | 1954-06-19 | Kazuhide  | Peha      | F      | 1987-04-03 |
+-----+-----+-----+-----+-----+-----+
```

To select all employees where the last_name is null:

Select * from employees

Where last_name is null

limit 100;

```
MySQL localhost:3306 ssl employees SQL > select * from employees
-> where last_name is null
-> limit 100;
Empty set (0.0006 sec)
```

SQL Update

To update the date first_name to "Goh M. H. " and last_name to "Eric"

```
MySQL localhost:3306 ssl employees SQL > select * from employees where emp_no = 500001;
+-----+-----+-----+-----+-----+-----+
| emp_no | birth_date | first_name | last_name | gender | hire_date |
+-----+-----+-----+-----+-----+-----+
| 500001 | 1964-06-02 | Goh       | M. H.    | M      | 1987-09-21 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.0006 sec)

MySQL localhost:3306 ssl employees SQL > _
```

We can use:

Update employees

Set first_name='Goh M. H. ', last_name='Eric'

Where emp_no=500001;

```
MySQL localhost:3306 ssl employees SQL > Update employees Set first_name='Goh M. H. ', last_name='Eric' where emp_no=500001;
Query OK, 1 row affected (0.0339 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MySQL localhost:3306 ssl employees SQL > select * from employees where emp_no=500001;
+-----+-----+-----+-----+-----+-----+
| emp_no | birth_date | first_name | last_name | gender | hire_date |
+-----+-----+-----+-----+-----+-----+
| 500001 | 1964-06-02 | Goh M. H. | Eric      | M      | 1987-09-21 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.0005 sec)
```

SQL Delete

To delete the employees with emp_no=500001, we can use:

Delete from employees where emp_no=500001;

```
MySQL localhost:3306 ssl employees SQL > Delete from employees where emp_no=500001;
Query OK, 1 row affected (0.1505 sec)

MySQL localhost:3306 ssl employees SQL > select * from employees where emp_no=500001;
Empty set (0.0005 sec)

MySQL localhost:3306 ssl employees SQL > _
```

We can insert again using:

```
MySQL localhost:3306 ssl employees SQL> Insert into employees (emp_no, birth_date, first_name, last_name, gender, hire_date) values(500001,
1964-06-02, 'Goh', 'M. H.', 'M', '1987-09-21');
Query OK, 1 row affected (0.0710 sec)

MySQL localhost:3306 ssl employees SQL> select * from employees where emp_no=500001;
+-----+-----+-----+-----+-----+-----+
| emp_no | birth_date | first_name | last_name | gender | hire_date |
+-----+-----+-----+-----+-----+-----+
| 500001 | 1964-06-02 | Goh       | M. H.     | M      | 1987-09-21 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.0005 sec)

MySQL localhost:3306 ssl employees SQL> _
```

SQL Min Max

To get the min and max of salary from the salaries table, we can use;

Select min(salary) from salaries;

Select max(salary) from salaries;

```
MySQL localhost:3306 ssl employees SQL> select min(salary) from salaries;
+-----+
| min(salary) |
+-----+
| 38623       |
+-----+
1 row in set (1.1726 sec)

MySQL localhost:3306 ssl employees SQL> select max(salary) from salaries;
+-----+
| max(salary) |
+-----+
| 158220      |
+-----+
1 row in set (1.0926 sec)
```

SQL Count, Sum, Avg

To count the number of rows in salaries table, we can use:

Select count(*) from salaries;

```
MySQL localhost:3306 ssl employees SQL> select count(*) from salaries;
+-----+
| count(*) |
+-----+
| 2844047  |
+-----+
1 row in set (0.8314 sec)
```

To get the sum of the salary from salaries table, we can use:

Select sum(salary) from salaries;

```
MySQL localhost:3306 ssl employees SQL> select sum(salary) from salaries;
+-----+
| sum(salary) |
+-----+
| 181480757419 |
+-----+
1 row in set (1.3449 sec)
```

To get the average salary from the salaries table, we can use;

Select avg(salary) from salaries;

```
MySQL localhost:3306 ssl employees SQL > select avg(salary) from salaries;
+-----+
| avg(salary) |
+-----+
| 63810.7448  |
+-----+
1 row in set (1.1808 sec)
```

SQL Like

To select employees whose last_name start with d:

Select * from employees

where last_name like 'd%'

limit 100;

```
MySQL Shell
MySQL localhost:3306 ssl employees SQL > Select * from employees where last_name like 'd%' limit 100;
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10030	1958-07-14	Elvis	Demeyer	M	1994-02-17
10050	1958-05-21	Yinghua	Dredge	M	1990-12-25
10055	1956-06-06	Georgy	Dredge	M	1992-04-27
10075	1960-03-09	Gao	Dolinsky	F	1987-03-19
10093	1964-06-11	Sailaja	Desikan	M	1996-11-05
10114	1957-02-16	Munir	Demeyer	F	1992-07-17
10179	1961-11-25	Deniz	Duclos	F	1990-10-04
10215	1954-04-02	Xiaobin	Duclos	M	1987-10-19
10231	1963-07-21	Shaowen	Desikan	F	1996-04-13
10280	1964-10-29	Stabislas	Delgrange	M	1988-03-18
10298	1954-07-06	Dietrich	DuCasse	F	1999-03-30
10312	1957-06-18	Rasiah	Deyuan	F	1986-08-28
10322	1954-05-28	Isamu	Dahlbom	F	1990-01-29
10333	1953-04-27	Snehasis	Dymetman	M	1993-01-16
10362	1963-09-16	Shalesh	dAstous	M	1988-08-24
10364	1954-09-21	Nakhon	Dengi	M	1985-11-14
10382	1955-06-12	Shirish	Dredge	M	1990-07-04
10393	1958-03-24	Yagil	dassarma	M	1989-06-23
10395	1952-02-17	Takahiro	Deverell	M	1987-02-04
10433	1954-09-02	Reuven	Dengi	M	1989-02-14
10545	1963-01-12	Hauke	dAstous	M	1990-06-30
10588	1956-07-30	Shigeo	Dulay	F	1987-01-28
10615	1955-08-30	Keung	Delgrange	M	1996-03-10
10623	1953-07-11	Aleksander	Danlos	F	1987-03-07
10626	1957-06-26	Danil	Deverell	M	1996-12-03
10655	1959-02-02	Remko	Dalton	F	1985-07-14
10676	1953-08-26	Valeri	Danley	F	1986-03-20
10693	1953-12-14	Berhard	Daescu	F	1986-01-08
10699	1964-02-02	Hatim	Deverell	M	1985-11-17
10711	1963-06-20	Arvind	DuBourdieu	F	1991-06-21
10750	1953-06-14	Roddy	Demeyer	F	1991-08-04
10760	1963-05-27	Phillip	Dratva	M	1994-06-15
10767	1954-02-28	Monique	Doering	F	1987-06-17
10772	1956-01-21	Munehiro	Dayana	M	1987-06-29
10786	1964-05-19	Patricia	dAstous	M	1989-03-14
10814	1952-09-17	Nidapan	Dymetman	F	1993-07-17
10827	1953-09-25	Willard	Danley	M	1996-11-07

LIKE Operator	Description
WHERE CustomerName LIKE 'a%'	Finds any values that start with "a"
WHERE CustomerName LIKE '%a'	Finds any values that end with "a"
WHERE CustomerName LIKE '%or%'	Finds any values that have "or" in any position
WHERE CustomerName LIKE '_r%'	Finds any values that have "r" in the second position
WHERE CustomerName LIKE 'a_%_%'	Finds any values that start with "a" and are at least 3 characters in length
WHERE ContactName LIKE 'a%o'	Finds any values that start with "a" and ends with "o"

Source: https://www.w3schools.com/sql/sql_like.asp