

Introduction to Database

1. Create Database

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
[Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.26 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
[mysql> create database mydb;
Query OK, 1 row affected (0.00 sec)
```

```
[mysql> show databases;
```

Database
information_schema
mydb
mysql
performance_schema
sys

5 rows in set (0.00 sec)

```
mysql> █
```

2. Create tables

```
[mysql> use mydb;
Database changed
[mysql> create table orders(
  -> order_id int,
  -> order_name varchar(200),
  -> sales_id int,
  -> cust_id int
  -> );
Query OK, 0 rows affected (0.01 sec)

[mysql> create table sales(
  -> id int,
  -> name varchar(200)
  -> );
Query OK, 0 rows affected (0.01 sec)

[mysql> create table customer(
  -> id int,
  -> name varchar(200)
  -> );
Query OK, 0 rows affected (0.01 sec)

[mysql> alter table orders
  -> add foreign key (sales_id) references sales(id);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'references sales(id)' at line 2
[mysql> alter table orders
  -> add foreign key (sales_id) references sales(id);
ERROR 1822 (HY000): Failed to add the foreign key constraint. Missing index for constraint 'orders_ibfk_1' in the referenced table 'sales'
[mysql> alter table orders
  -> add primary key (order_id);
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

[mysql> alter table sales
  -> add primary key (id);
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

[mysql> alter table customer
  -> add primary key (id);
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

[mysql> alter table orders
  -> add foreign key (sales_id) references sales(id);
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0

[mysql> alter table orders
  -> alter table orders add foreign key (cust_id) references customer(id);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'table orders add foreign k
ey (cust_id) references customer(id)' at line 2
[mysql> alter table orders
  -> add foreign key (cust_id) references customer(id);
Query OK, 0 rows affected (0.03 sec)
```

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 8.0.26 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
[mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
```

Database changed

```
[mysql> desc orders;
```

Field	Type	Null	Key	Default	Extra
order_id	int	NO	PRI	NULL	
order_name	varchar(200)	YES		NULL	
sales_id	int	YES	MUL	NULL	
cust_id	int	YES	MUL	NULL	

4 rows in set (0.00 sec)

```
[mysql> desc sales;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
name	varchar(200)	YES		NULL	

2 rows in set (0.00 sec)

```
[mysql> desc customer;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
name	varchar(200)	YES		NULL	

2 rows in set (0.01 sec)

```
[mysql> █
```

3. Insert sample data

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 21
Server version: 8.0.26 Homebrew

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> insert into sales values
[   -> (01, "Gaurav"),
[   -> (02, "Saurav"),
[   -> (03, "Rahul"),
[   -> (04, "Rohan"),
[   -> (05, "Ananya"),
[   -> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near
mysql> insert into sales values
[   -> (01, "Gaurav"),
[   -> (02, "Saurav"),
[   -> (03, "Rahul"),
[   -> (04, "Rohan"),
[   -> (05, "Ananya");
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> insert into customer values
[   -> (01, "Vij"),
[   -> (02, "Rids"),
[   -> (03, "Neel"),
[   -> (04, "Pri"),
[   -> (05, "Anuj");
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> insert into orders values (01, "phone", 01, 03), (02, "laptop", 02, 05), (03, "earphones", 01, 02), (04, "mouse", 04, 01), (05, "key", 03, 04);
Query OK, 5 rows affected (0.00 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> █
```

4. Find the sales persons who have multiple orders.

```
[gaaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
[Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 23
Server version: 8.0.26 Homebrew

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

[mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
[mysql> select s.name, s.id, count(sales_id)
[      -> from sales s, orders o
[      -> where o.sales_id = s.id
[      -> group by sales_id
[      -> having count(sales_id)>1;
+-----+-----+-----+
| name  | id  | count(sales_id) |
+-----+-----+-----+
| Gaurav | 1  | 2               |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql> █
```

5. Find the all sales person details along with order details

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
[Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 25
Server version: 8.0.26 Homebrew

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

[mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
[mysql> select s.id, s.name, o.order_id, o.order_name
[      -> from sales s, orders o
[      -> where s.id=o.sales_id;
+-----+-----+-----+-----+
| id | name | order_id | order_name |
+-----+-----+-----+-----+
| 1 | Gaurav | 1 | phone |
| 2 | Saurav | 2 | laptop |
| 1 | Gaurav | 3 | earphones |
| 4 | Rohan | 4 | mouse |
| 3 | Rahul | 5 | key |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> █
```

6. Create index

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
[Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 27
Server version: 8.0.26 Homebrew

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

[mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
[mysql> create index myindex on orders(order_name);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> █
```

7. How to show index on a table

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 28
Server version: 8.0.26 Homebrew

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show index from orders from mydb;
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expression
orders	0	PRIMARY	1	order_id	A	5	NULL	NULL		BTREE			YES	NULL
orders	1	sales_id	1	sales_id	A	4	NULL	NULL	YES	BTREE			YES	NULL
orders	1	cust_id	1	cust_id	A	5	NULL	NULL	YES	BTREE			YES	NULL
orders	1	myindex	1	order_name	A	5	NULL	NULL	YES	BTREE			YES	NULL

```
4 rows in set (0.00 sec)

mysql> █
```

8. Find the order number, sale person name, along with the customer to whom that order belongs to.

```
[gaurav@TTNs-MacBook-Pro ~ % mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 29
Server version: 8.0.26 Homebrew

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use mydb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select o.order_id as order_number , s.name as sales_person, c.name as customer_name, c.id
[    -> from orders o, sales s, customer c
[    -> where c.id=o.cust_id and s.id=o.sales_id
[    -> group by o.order_id;
+-----+-----+-----+-----+
| order_number | sales_person | customer_name | id |
+-----+-----+-----+-----+
|          1 | Gaurav      | Neel          | 3  |
|          2 | Saurav      | Anuj          | 5  |
|          3 | Gaurav      | Rids          | 2  |
|          4 | Rohan       | Vij           | 1  |
|          5 | Rahul       | Pri           | 4  |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> █
```