

```
mysql>
mysql> -- Product dimension
Query OK, 0 rows affected (0.000 sec)

mysql> INSERT INTO dim_product (product_id, product_name, category, brand, price, start_date, end_date, is_current)
-> VALUES
-> ('P001', 'Laptop A', 'Electronics', 'Dell', 800.00, '2024-01-01', '2024-12-31', 'N'),
-> ('P001', 'Laptop A', 'Electronics', 'Dell', 750.00, '2025-01-01', NULL, 'Y');
Query OK, 2 rows affected (0.001 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql>
mysql> -- Customer dimension
Query OK, 0 rows affected (0.000 sec)

mysql> INSERT INTO dim_customer (customer_id, first_name, last_name, city, state, country, start_date, end_date, is_current)
-> VALUES ('C001', 'John', 'Doe', 'New York', 'NY', 'USA', '2024-01-01', NULL, 'Y');
Query OK, 1 row affected (0.001 sec)

mysql>
mysql> -- Store dimension
Query OK, 0 rows affected (0.000 sec)

mysql> INSERT INTO dim_store (store_id, store_name, city, state, region)
-> VALUES ('S001', 'Downtown Store', 'New York', 'NY', 'East');
Query OK, 1 row affected (0.001 sec)

mysql> SELECT * FROM dim_date;
+-----+-----+-----+-----+-----+-----+
| date_key | full_date | day | month | quarter | year |
+-----+-----+-----+-----+-----+-----+
| 20250101 | 2025-01-01 | 1 | 1 | 1 | 2025 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.005 sec)

mysql> SELECT * FROM dim_product;
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mysql> SELECT * FROM dim_product;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| product_key | product_id | product_name | category | brand | price | start_date | end_date | is_current |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | P001 | Laptop A | Electronics | Dell | 800.00 | 2024-01-01 | 2024-12-31 | N |
| 2 | P001 | Laptop A | Electronics | Dell | 750.00 | 2025-01-01 | NULL | Y |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.000 sec)

mysql> SELECT * FROM dim_customer;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| customer_key | customer_id | first_name | last_name | city | state | country | start_date | end_date | is_curre |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | C001 | John | Doe | New York | NY | USA | 2024-01-01 | NULL | Y |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

mysql> SELECT * FROM dim_store;
+-----+-----+-----+-----+-----+-----+
| store_key | store_id | store_name | city | state | region |
+-----+-----+-----+-----+-----+-----+
| 1 | S001 | Downtown Store | New York | NY | East |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

mysql> INSERT INTO fact_sales (date_key, product_key, customer_key, store_key, quantity_sold, sales_amount, discount_
-> VALUES (20250101, 2, 1, 1, 2, 1500.00, 50.00);
Query OK, 1 row affected (0.002 sec)

mysql> SELECT f.sales_id, d.full_date, p.product_name, c.first_name, s.store_name,
-> f.quantity_sold, f.sales_amount, f.discount_amount
-> FROM fact_sales f
-> JOIN dim_date d ON f.date_key = d.date_key
-> JOIN dim_product p ON f.product_key = p.product_key
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-> SET end_date = '2024-12-31', is_current = 'N'
-> WHERE product_id = 'P001' AND is_current = 'Y';
Query OK, 1 row affected (0.017 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> INSERT INTO dim_product (product_id, product_name, category, brand, price, start_date, end_date, is_current)
-> VALUES ('P001', 'Laptop A', 'Electronics', 'Dell', 750.00, '2025-01-01', NULL, 'Y');
Query OK, 1 row affected (0.002 sec)

mysql> UPDATE dim_customer
-> SET end_date = '2025-02-28', is_current = 'N'
-> WHERE customer_id = 'C001' AND is_current = 'Y';
Query OK, 1 row affected (0.001 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> INSERT INTO dim_customer (customer_id, first_name, last_name, city, state, country, start_date, end_date, is_current)
-> VALUES ('C001', 'John', 'Doe', 'Los Angeles', 'CA', 'USA', '2025-03-01', NULL, 'Y');
Query OK, 1 row affected (0.001 sec)

mysql> INSERT INTO fact_sales (date_key, product_key, customer_key, store_key, quantity_sold, sales_amount, discount_amount)
-> VALUES (20250305, 3, 2, 1, 1, 750.00, 0.00);
ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`hospitaldb`.`fact_sales`, CONSTRAINT `fact_sales_ibfk_1` FOREIGN KEY (`date_key`) REFERENCES `dim_date` (`date_key`))
mysql> SELECT product_id, product_name, price, start_date, end_date, is_current
-> FROM dim_product
-> WHERE product_id = 'P001';
+-----+-----+-----+-----+-----+-----+
| product_id | product_name | price | start_date | end_date | is_current |
+-----+-----+-----+-----+-----+-----+
| P001      | Laptop A     | 800.00 | 2024-01-01 | 2024-12-31 | N          |
| P001      | Laptop A     | 750.00 | 2025-01-01 | 2024-12-31 | N          |
| P001      | Laptop A     | 750.00 | 2025-01-01 | NULL       | Y          |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.003 sec)

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mysql>
Terminal Shell Edit View Window Help
amitprajapati — mysql -u root -p — mysql — mysql -u root -p — 143x36

mysql> SELECT * FROM dim_customer;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| customer_key | customer_id | first_name | last_name | city      | state | country | start_date | end_date | is_current |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1            | C001        | John      | Doe       | New York  | NY     | USA     | 2024-01-01 | NULL     | Y          |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

mysql> SELECT * FROM dim_store;
+-----+-----+-----+-----+-----+-----+
| store_key | store_id | store_name      | city      | state | region |
+-----+-----+-----+-----+-----+-----+
| 1         | S001     | Downtown Store | New York  | NY     | East    |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

mysql> INSERT INTO fact_sales (date_key, product_key, customer_key, store_key, quantity_sold, sales_amount, discount_amount)
-> VALUES (20250101, 2, 1, 1, 2, 1500.00, 50.00);
Query OK, 1 row affected (0.002 sec)

mysql> SELECT f.sales_id, d.full_date, p.product_name, c.first_name, s.store_name,
-> f.quantity_sold, f.sales_amount, f.discount_amount
-> FROM fact_sales f
-> JOIN dim_date d ON f.date_key = d.date_key
-> JOIN dim_product p ON f.product_key = p.product_key
-> JOIN dim_customer c ON f.customer_key = c.customer_key
-> JOIN dim_store s ON f.store_key = s.store_key;
+-----+-----+-----+-----+-----+-----+-----+-----+
| sales_id | full_date | product_name | first_name | store_name      | quantity_sold | sales_amount | discount |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 3        | 2025-01-01 | Laptop A     | John      | Downtown Store | 2             | 1500.00      | 50.00    |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.003 sec)

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