E-COMMERCE DATABASE

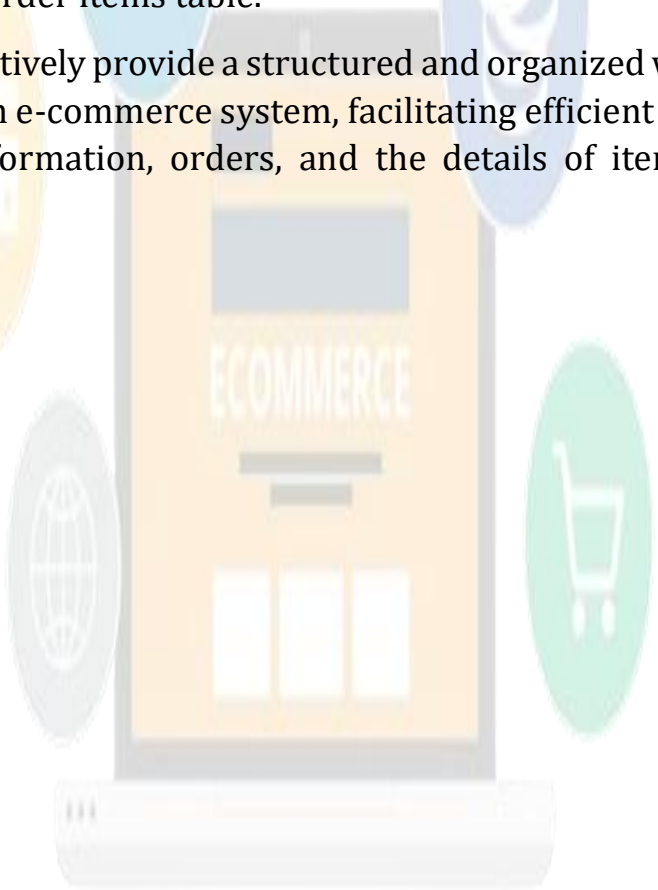
~ ATHARVA PAITL

1. INTRODUCTION:

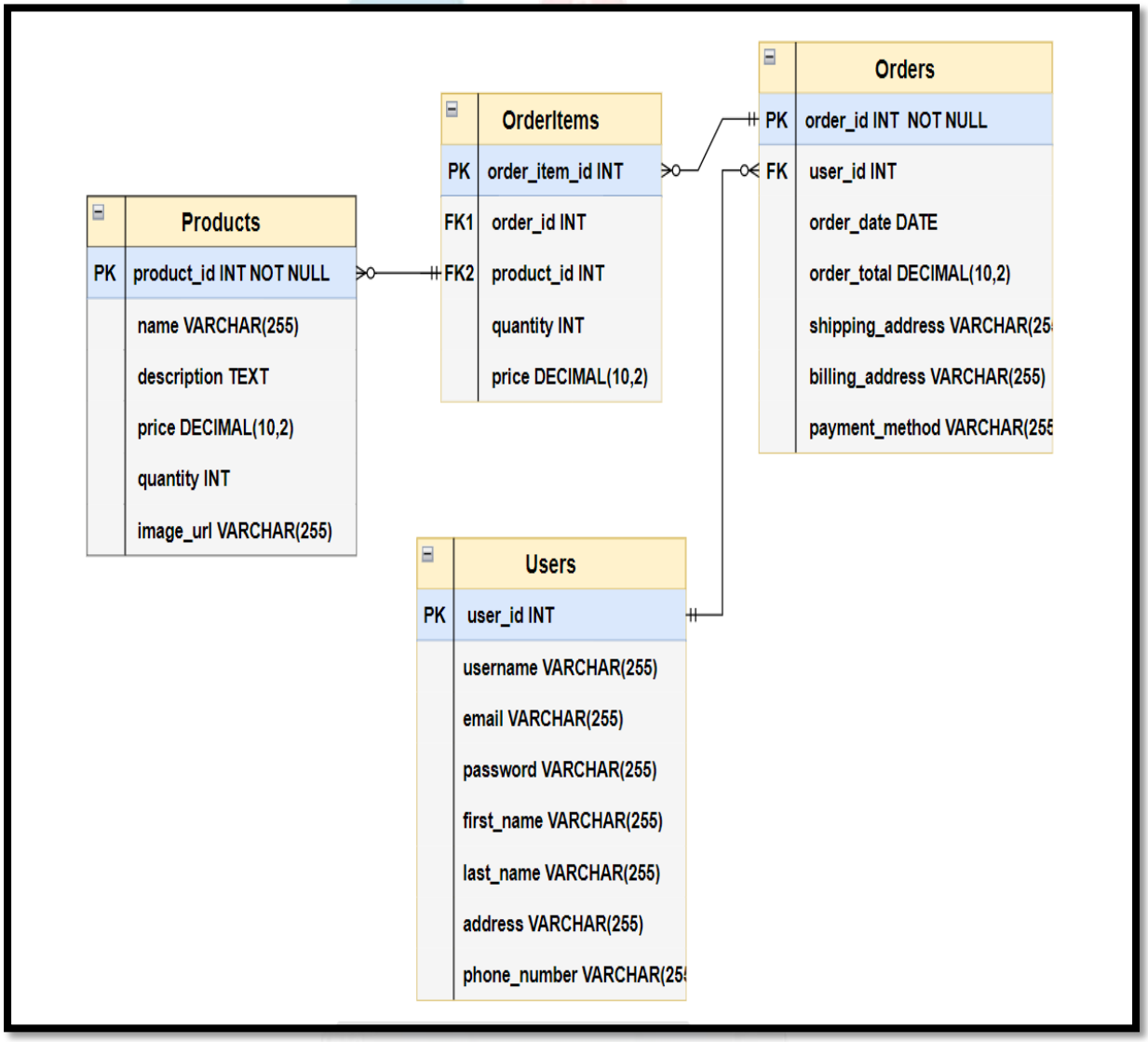
The goal of the e-commerce platform is to provide a seamless and secure online shopping experience for users. The system allows customers to browse, select, and purchase products, while also enabling administrators to manage inventory, user accounts, and track order fulfillment.

In this project, the information related to the e-commerce sales of various products is presented by using the relationships with each table to table. There are four tables in the database namely, products table, users table, orders table, and order items table.

These tables collectively provide a structured and organized way to store and retrieve data for an e-commerce system, facilitating efficient management of products, user information, orders, and the details of items within each order.



2. ER DIAGRAM:


Products
PK product_id INT NOT NULL
name VARCHAR(255)
description TEXT
price DECIMAL(10,2)
quantity INT
image_url VARCHAR(255)
OrderItems
PK order_item_id INT
FK1 order_id INT
FK2 product_id INT
quantity INT
price DECIMAL(10,2)
Orders
PK order_id INT NOT NULL
FK user_id INT
order_date DATE
order_total DECIMAL(10,2)
shipping_address VARCHAR(25
billing_address VARCHAR(255)
payment_method VARCHAR(255
Users
PK user_id INT
username VARCHAR(255)
email VARCHAR(255)
password VARCHAR(255)
first_name VARCHAR(255)
last_name VARCHAR(255)
address VARCHAR(255)
phone_number VARCHAR(25

3. DATABASE DESIGN:

Database: E_Com

Tables:

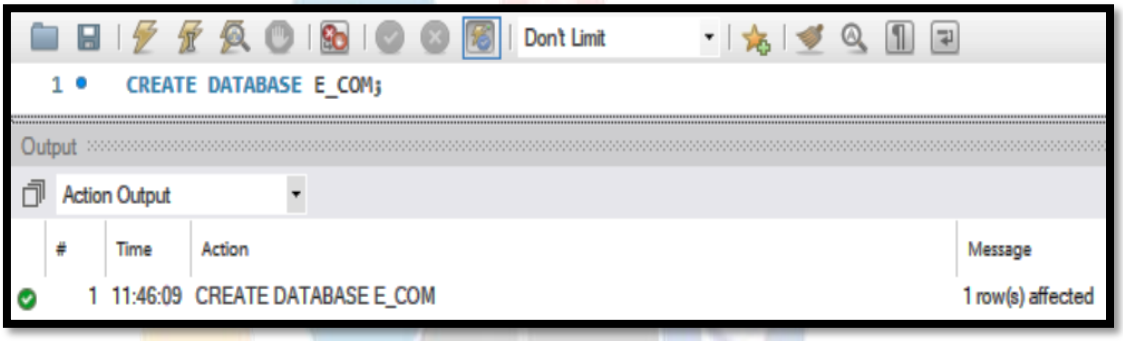
- Products
- Users
- Orders
- Orderitems

4. DATA DEFINITION LANGUAGE (DDL):

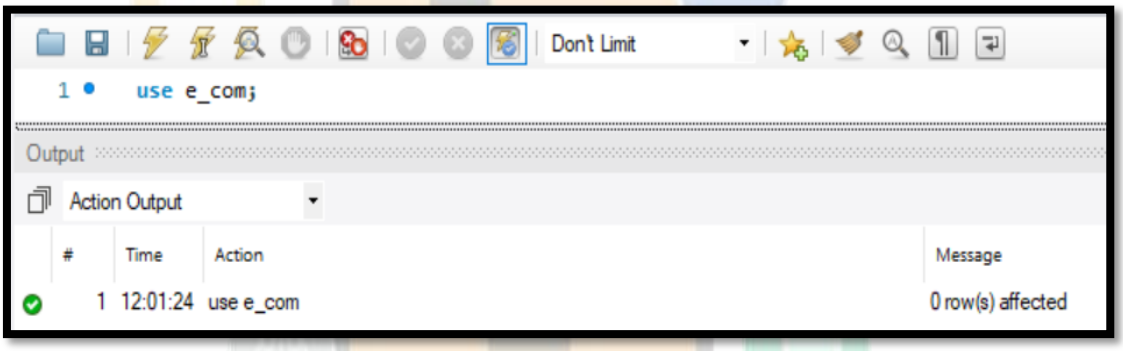
4.1 {CREATE}-

- **CREATING DATABASE & TABLES**

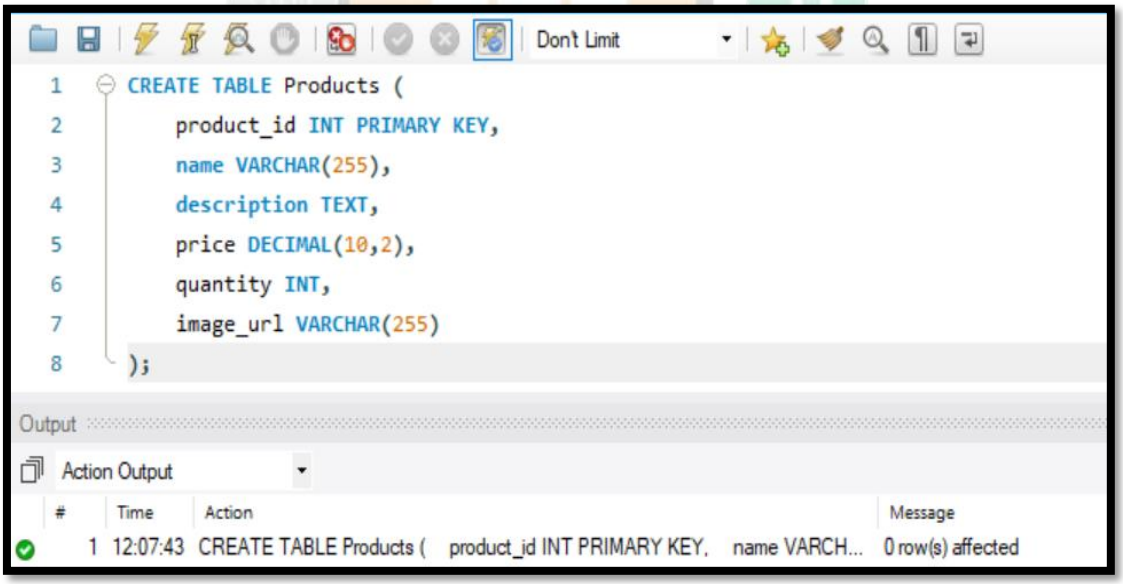
a) Creating Database:



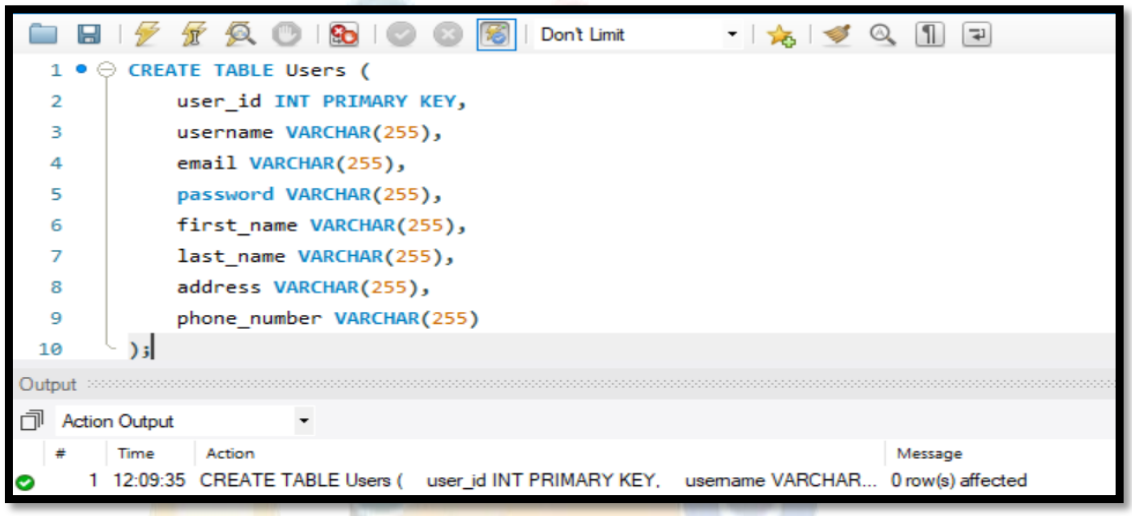
b) Using the Database:



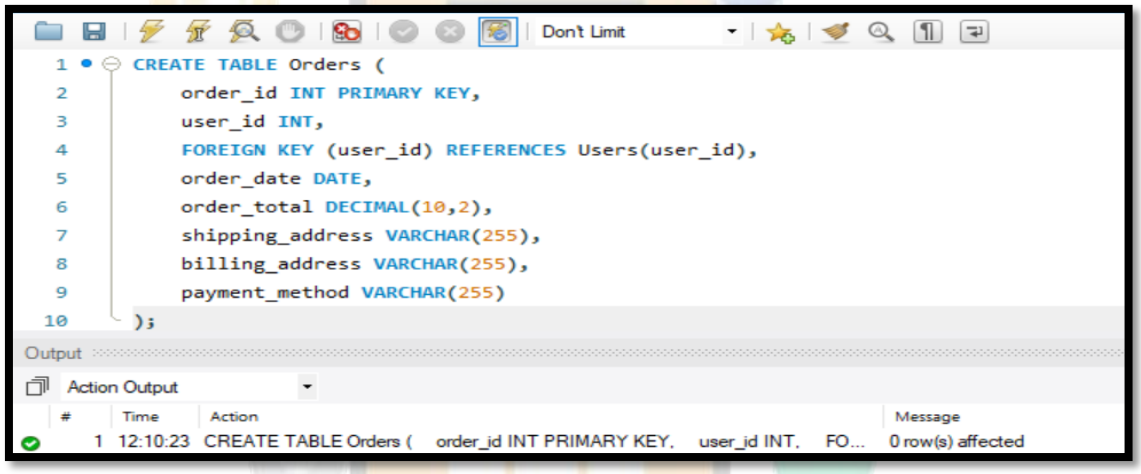
c) Creating Table (products):



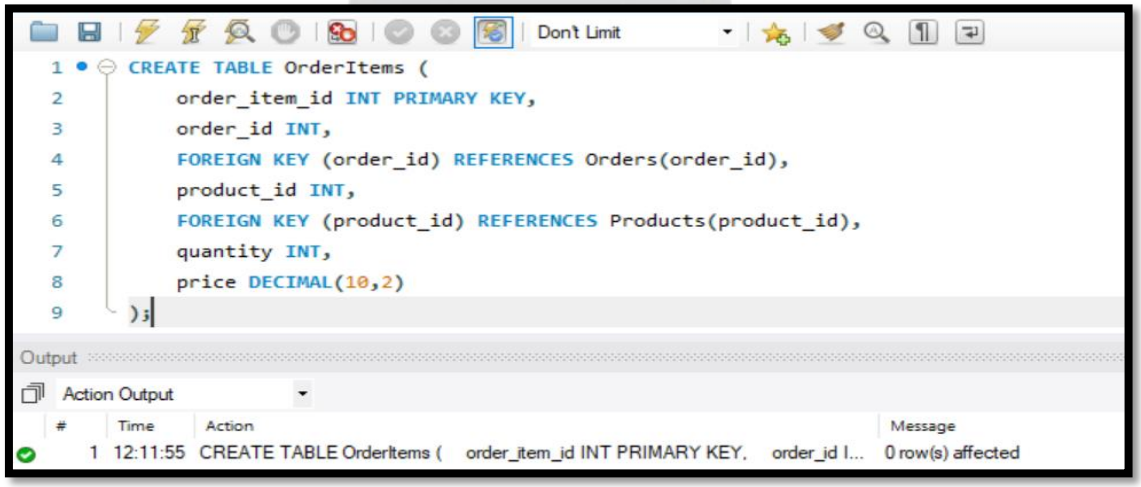
d) Creating Table (users):



e) Creating Table (orders):

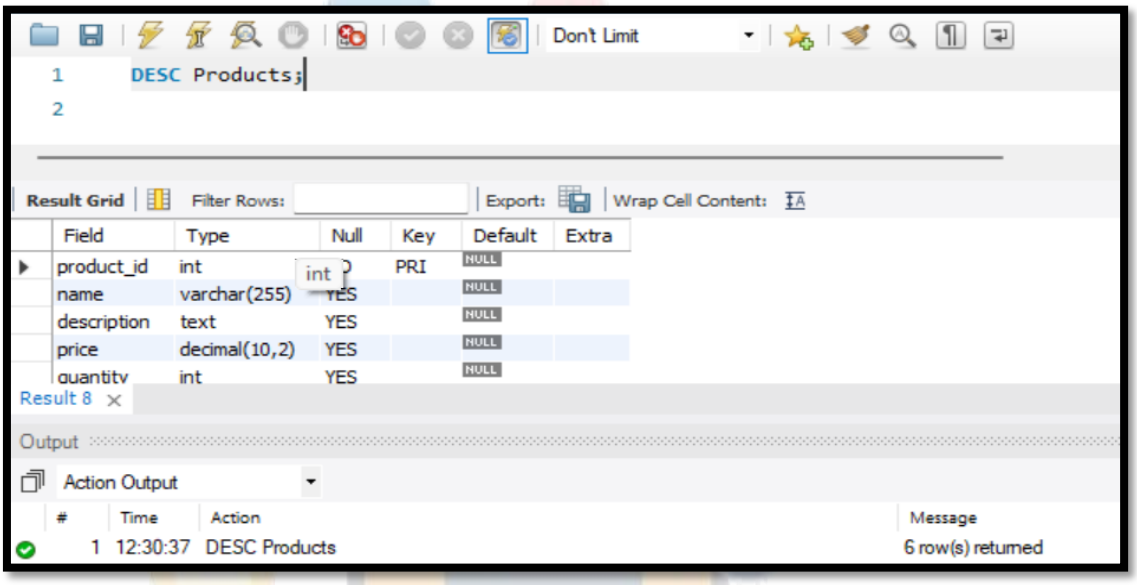


f) Creating Table (orderItems):

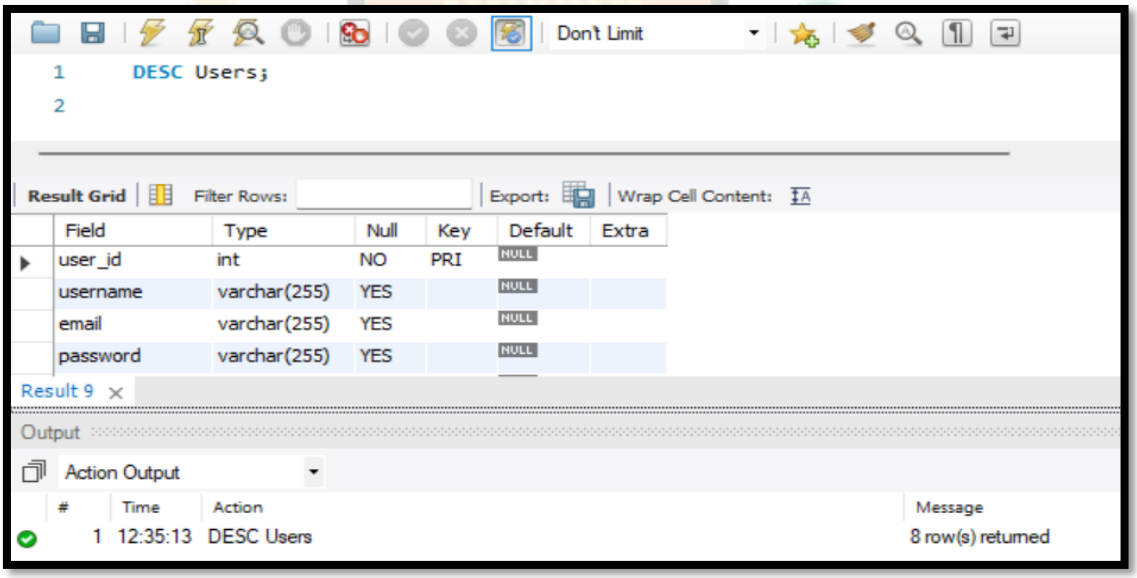


- **TO CHECK STRUCTURE OF TABLE**

a) Products-



b) Users-



c) Orders-

```
DESC Orders;
```

Field	Type	Null	Key	Default	Extra
order_id	int	NO	PRI	NULL	
user_id	int	YES	MUL	NULL	
order_date	date	YES		NULL	
order_total	decimal(10,2)	YES		NULL	
shipping_address	varchar(255)	YES		NULL	

Result 10

Output

Action Output

#	Time	Action	Message
1	12:38:18	DESC Orders	7 row(s) returned

d) OrderItems-

```
DESC OrderItems;
```

Field	Type	Null	Key	Default	Extra
order_item_id	int	NO	PRI	NULL	
order_id	int	YES	MUL	NULL	
product_id	int	YES	MUL	NULL	
quantity	int	YES		NULL	
price	decimal(10,2)	YES		NULL	

Result 11

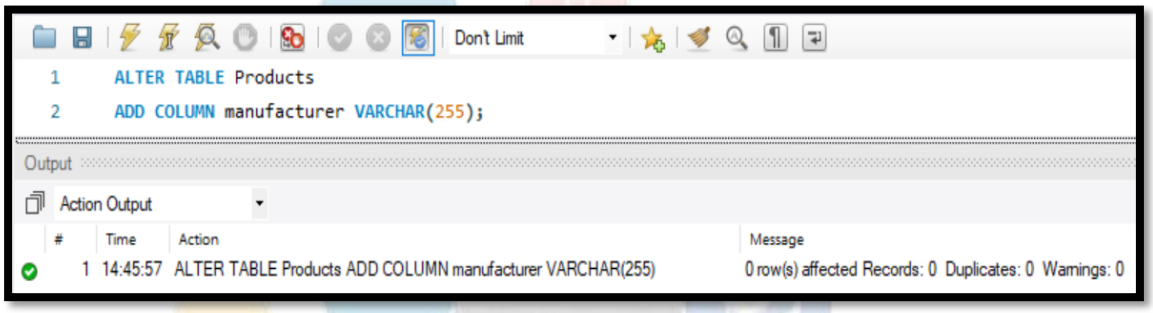
Output

Action Output

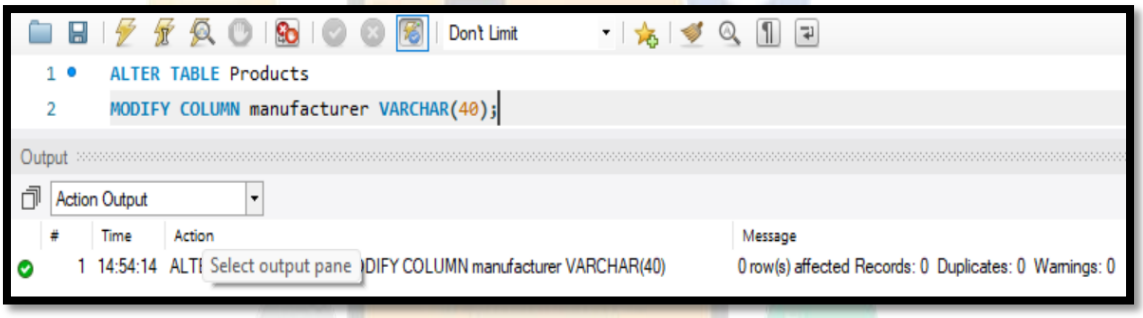
#	Time	Action	Message
1	12:40:32	DESC OrderItems	5 row(s) returned

4.2 {ALTER}-

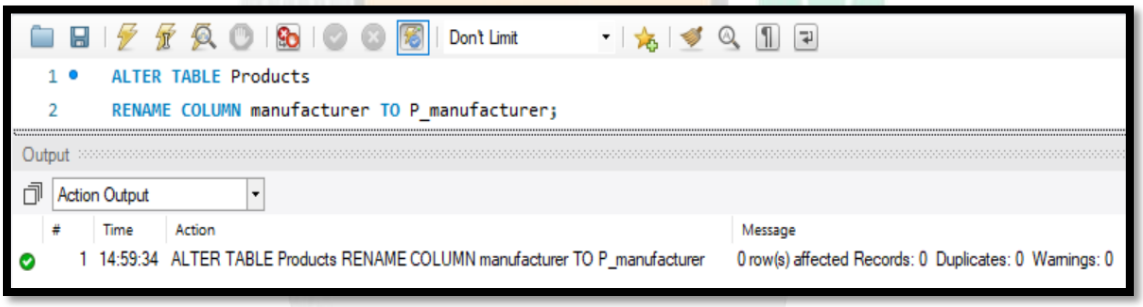
1. Alter Table Add Column



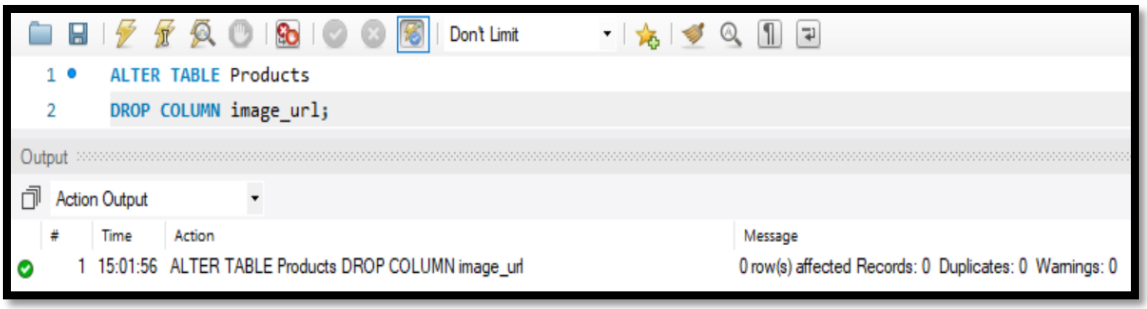
2. Alter Table Modify Column



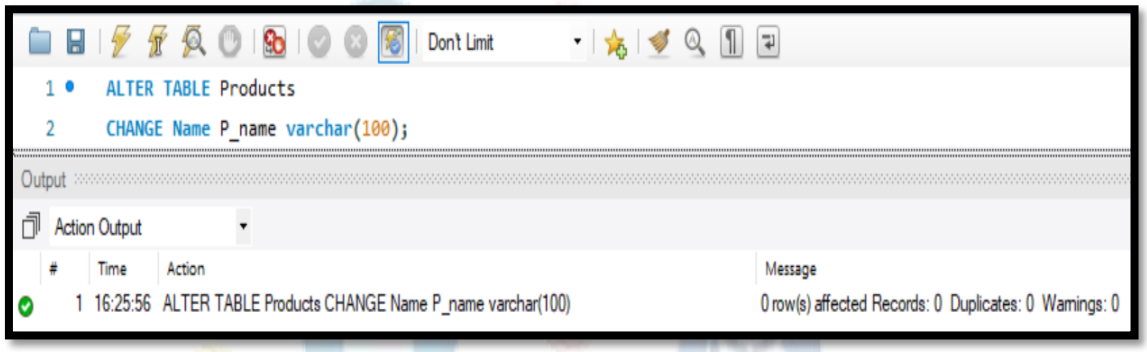
3. Alter Table Rename Column



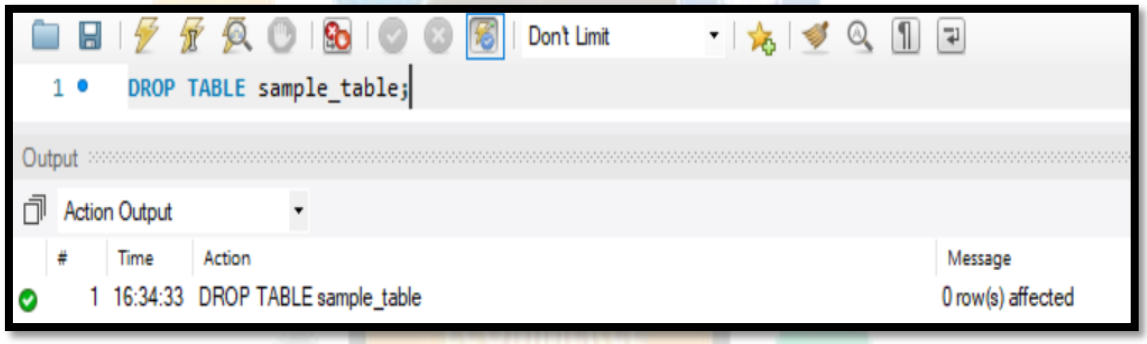
4. Alter Table Drop Column



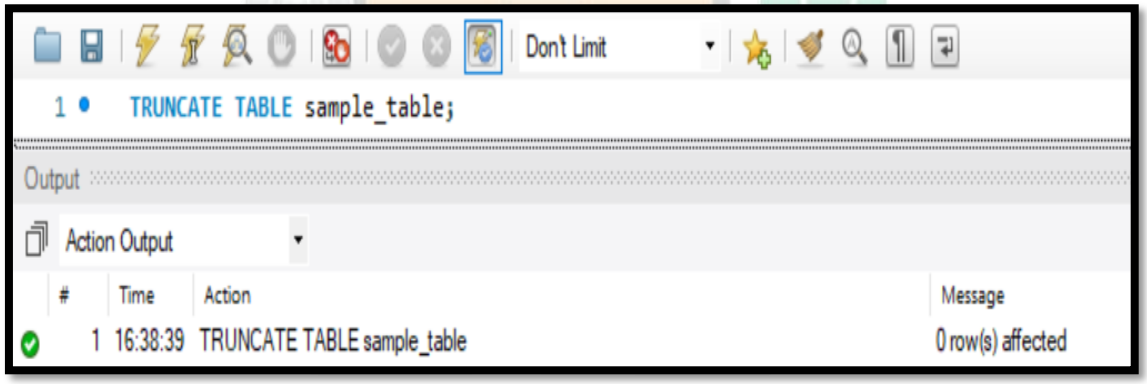
5. Alter Column using Change



4.3 {DROP}-

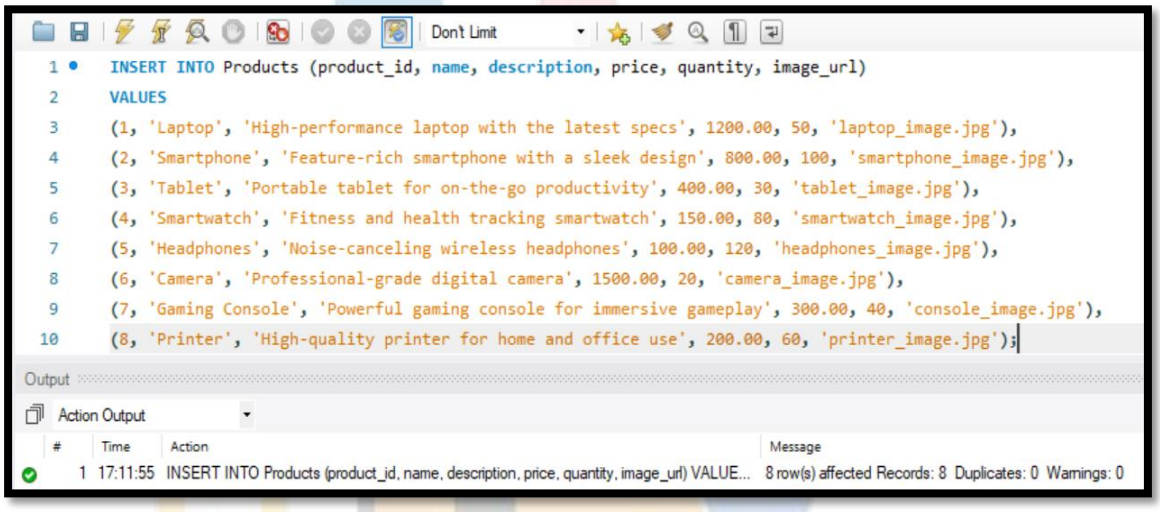


4.4 {TRUNCATE}-

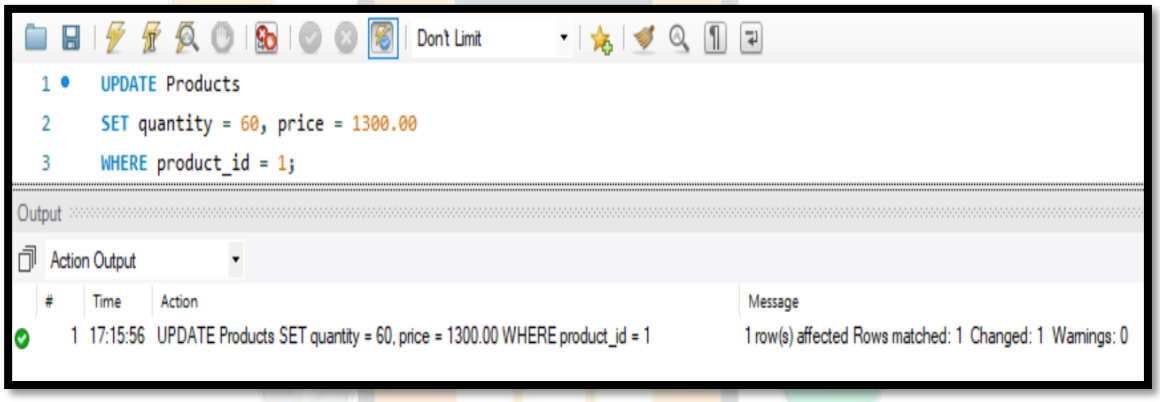


5. DATA MANIPULATION LANGUAGE (DML):

5.1 {INSERT INTO}:



5.2 {UPDATE} With SET & WHERE Clause:

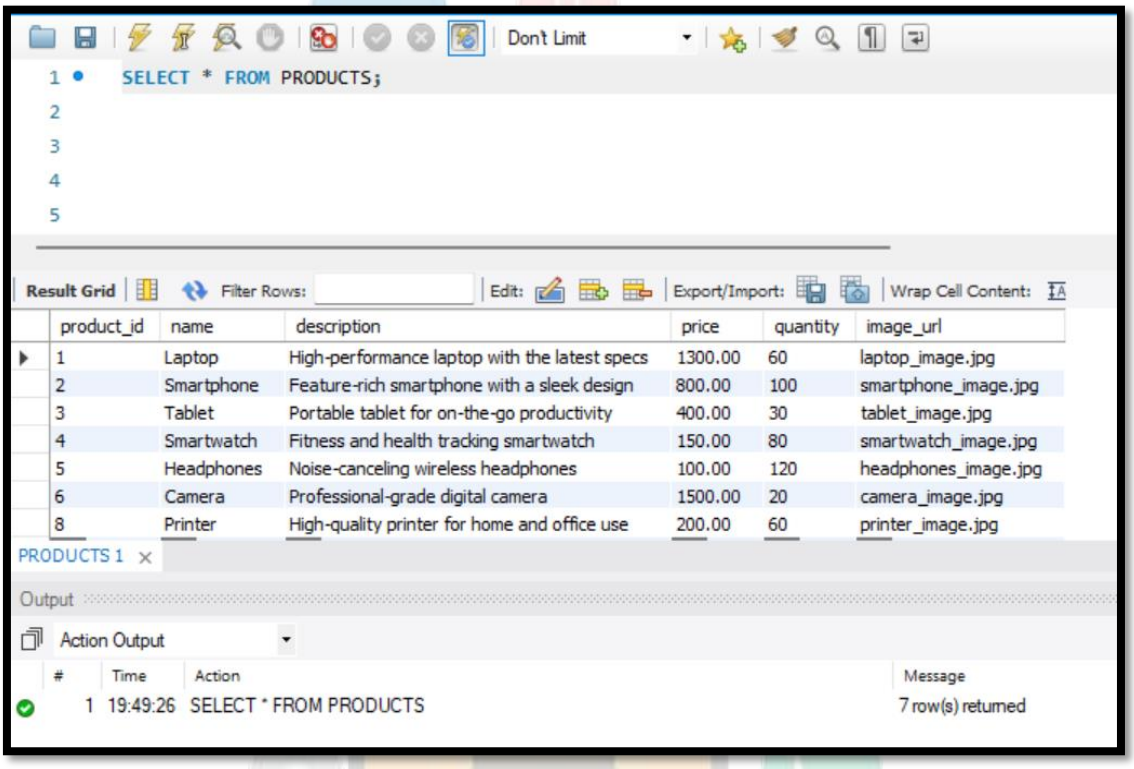


5.3 {DELETE FROM} With WHERE Clause:

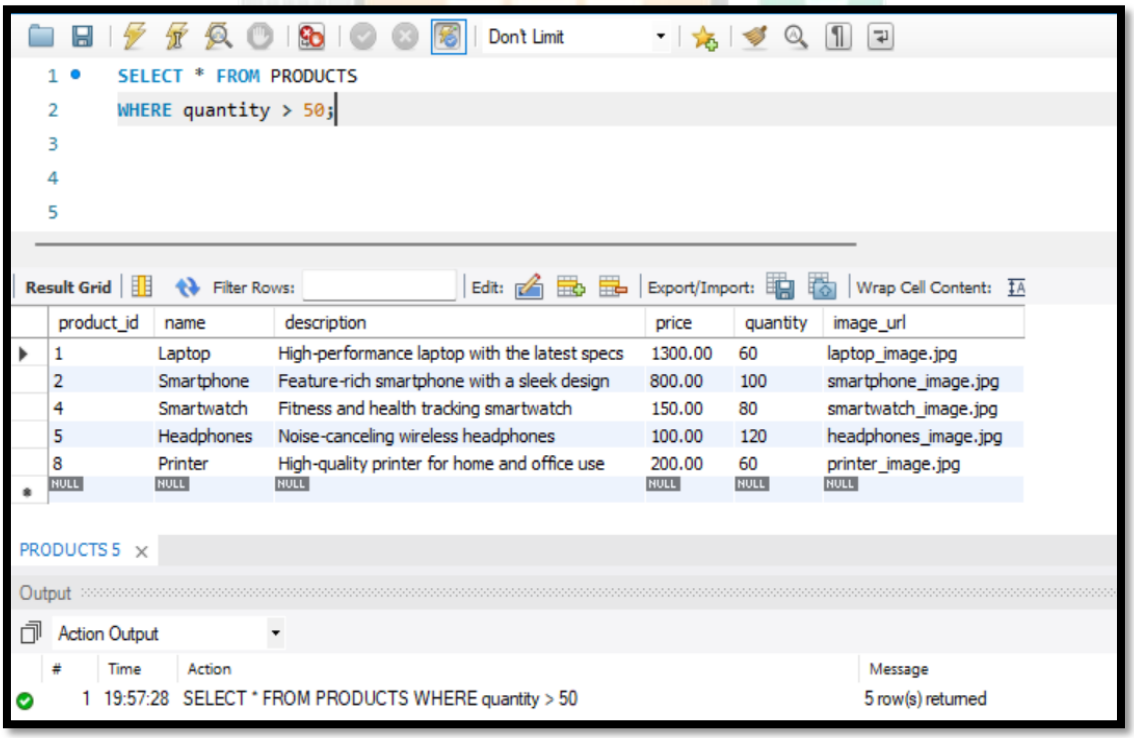
6. DATA QUERY LANGUAGE (DQL):

6.1 {SELECT COMMAND}:

- To display all records in a table:

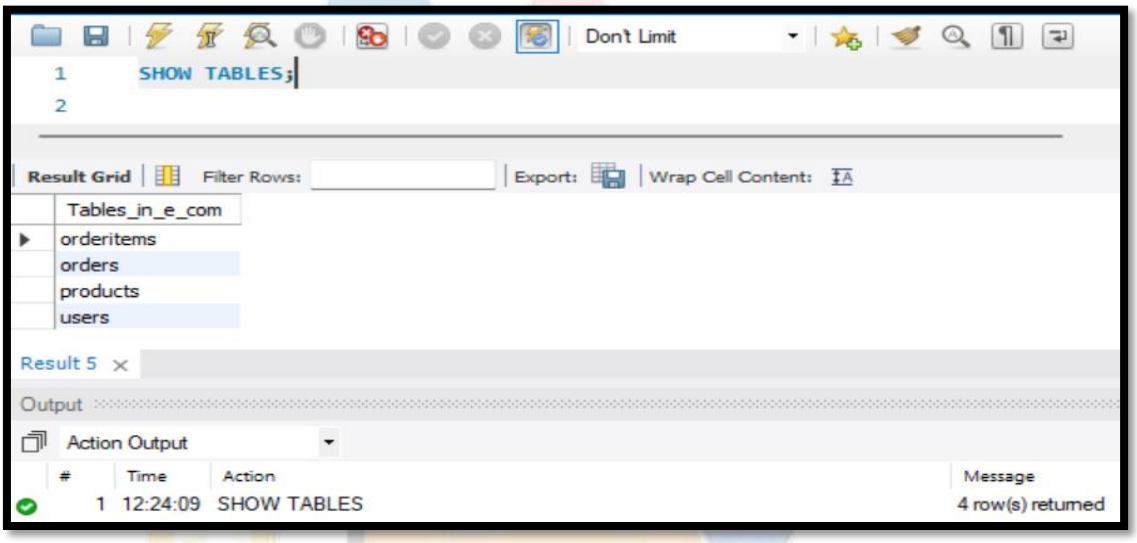


- SELECT command with WHERE clause:

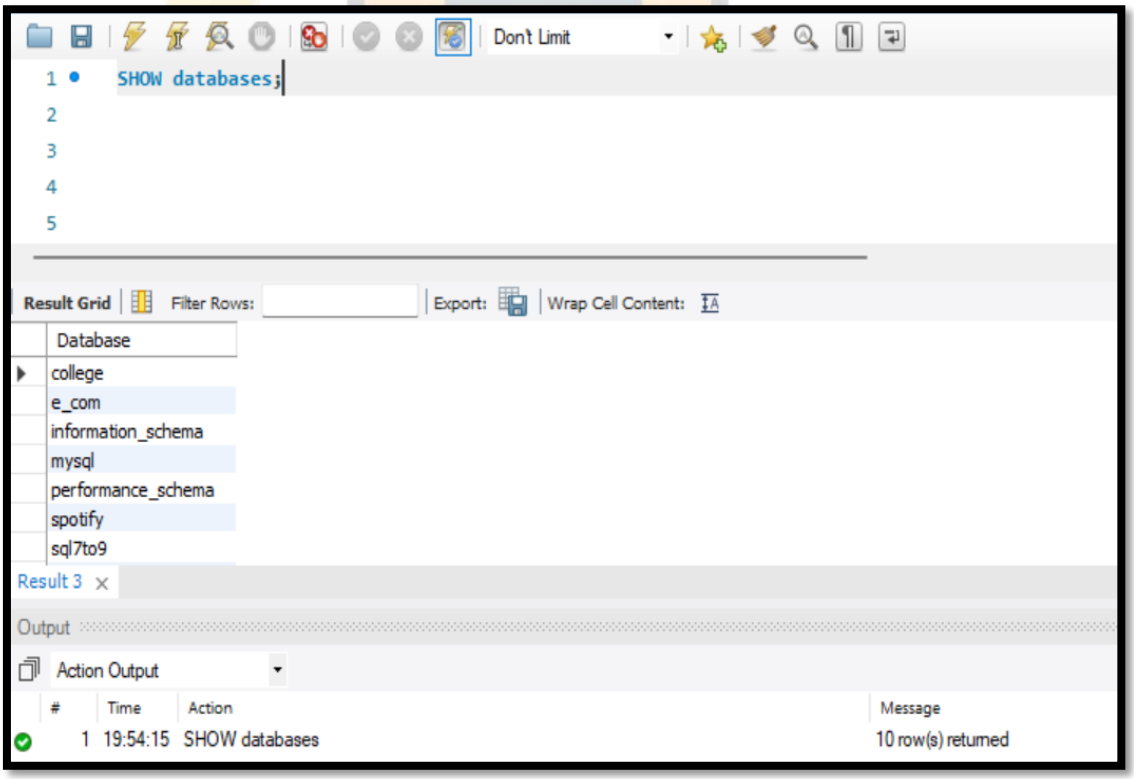


6.2 {SHOW COMMAND}:

- To display all tables in a database:



- To display databases:



7. LIKE Query:

- Using '%':

```
SELECT * FROM products
WHERE name LIKE 'S%';
```

product_id	name	description	price	quantity	image_url
2	Smartphone	Feature-rich smartphone with a sleek design	800.00	100	smartphone_image.jpg
4	Smartwatch	Fitness and health tracking smartwatch	150.00	80	smartwatch_image.jpg

Output

#	Time	Action	Message
1	20:05:00	SELECT * FROM products WHERE name LIKE 'S%'	2 row(s) returned

- Using '_':

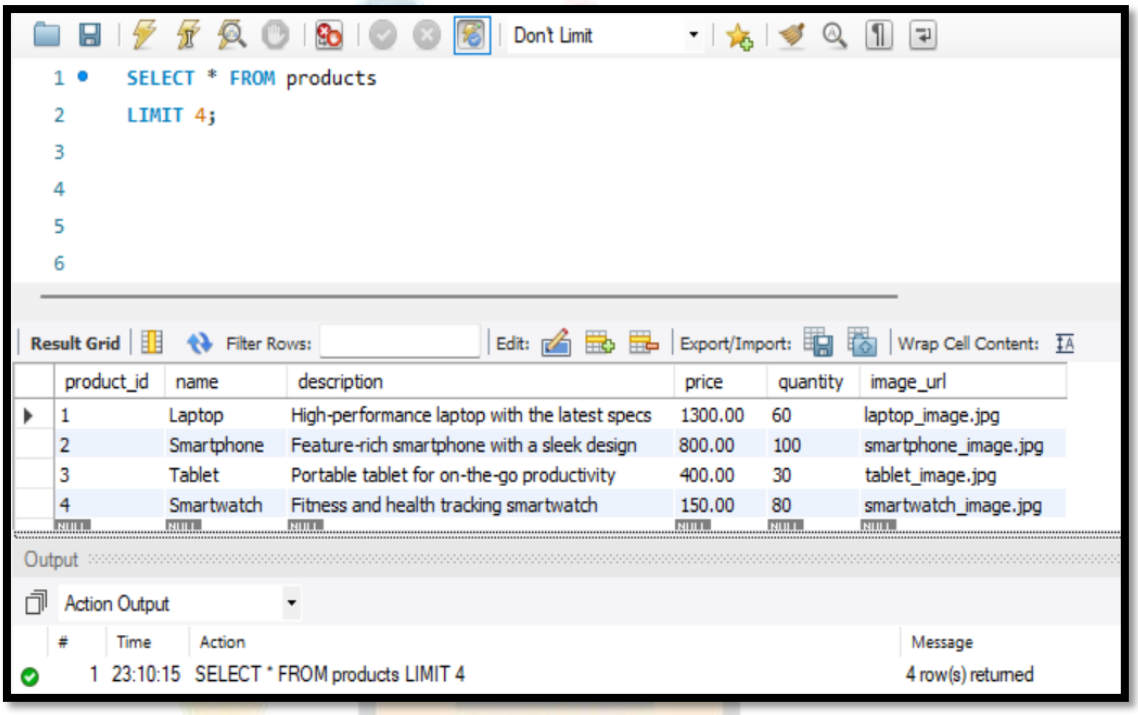
```
WHERE name LIKE 'Ta_let';
```

product_id	name	description	price	quantity	image_url
3	Tablet	Portable tablet for on-the-go productivity	400.00	30	tablet_image.jpg

Output

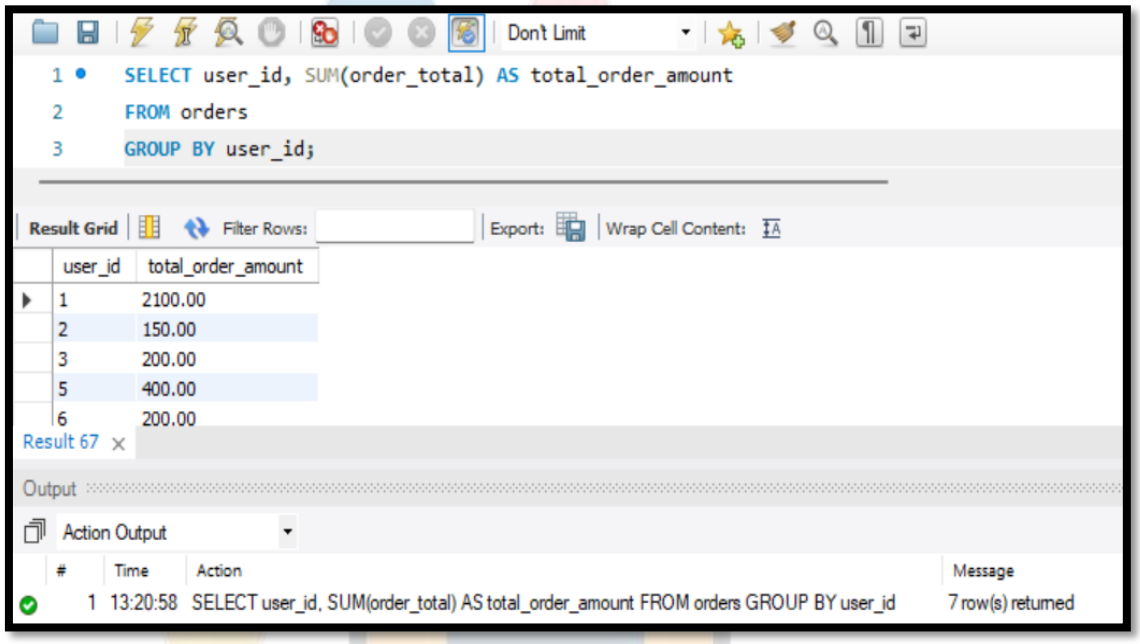
#	Time	Action	Message
1	20:10:37	SELECT * FROM products WHERE name LIKE 'Ta_let'	1 row(s) returned

8. LIMIT Clause:

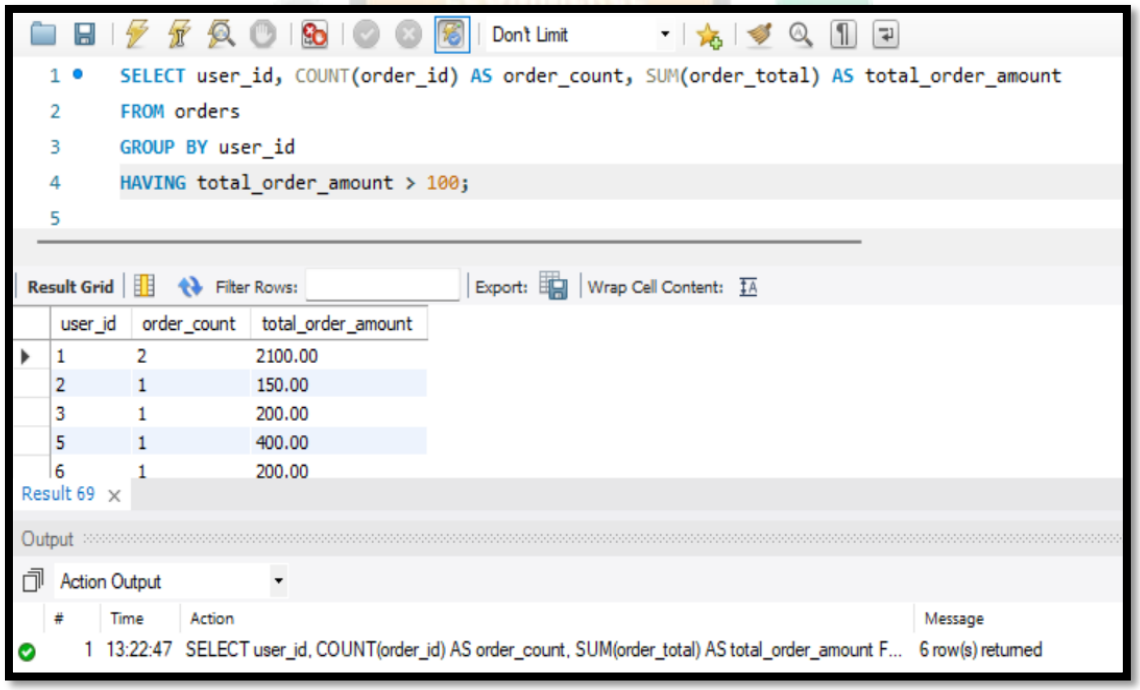


9. GROUP BY Clause:

a) GROUP BY:

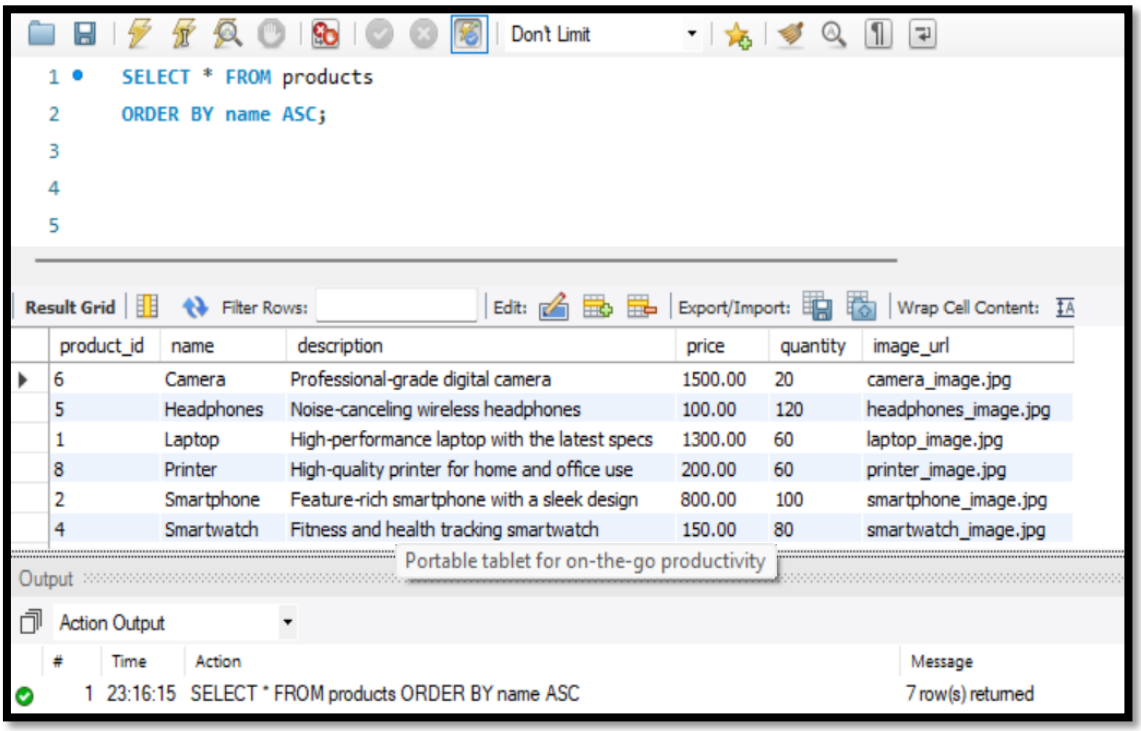


b) GROUP BY with HAVING Clause:



10.ORDER BY Clause:

a) ORDER BY ASC:



```
SELECT * FROM products
ORDER BY name ASC;
```

product_id	name	description	price	quantity	image_url
6	Camera	Professional-grade digital camera	1500.00	20	camera_image.jpg
5	Headphones	Noise-canceling wireless headphones	100.00	120	headphones_image.jpg
1	Laptop	High-performance laptop with the latest specs	1300.00	60	laptop_image.jpg
8	Printer	High-quality printer for home and office use	200.00	60	printer_image.jpg
2	Smartphone	Feature-rich smartphone with a sleek design	800.00	100	smartphone_image.jpg
4	Smartwatch	Fitness and health tracking smartwatch	150.00	80	smartwatch_image.jpg

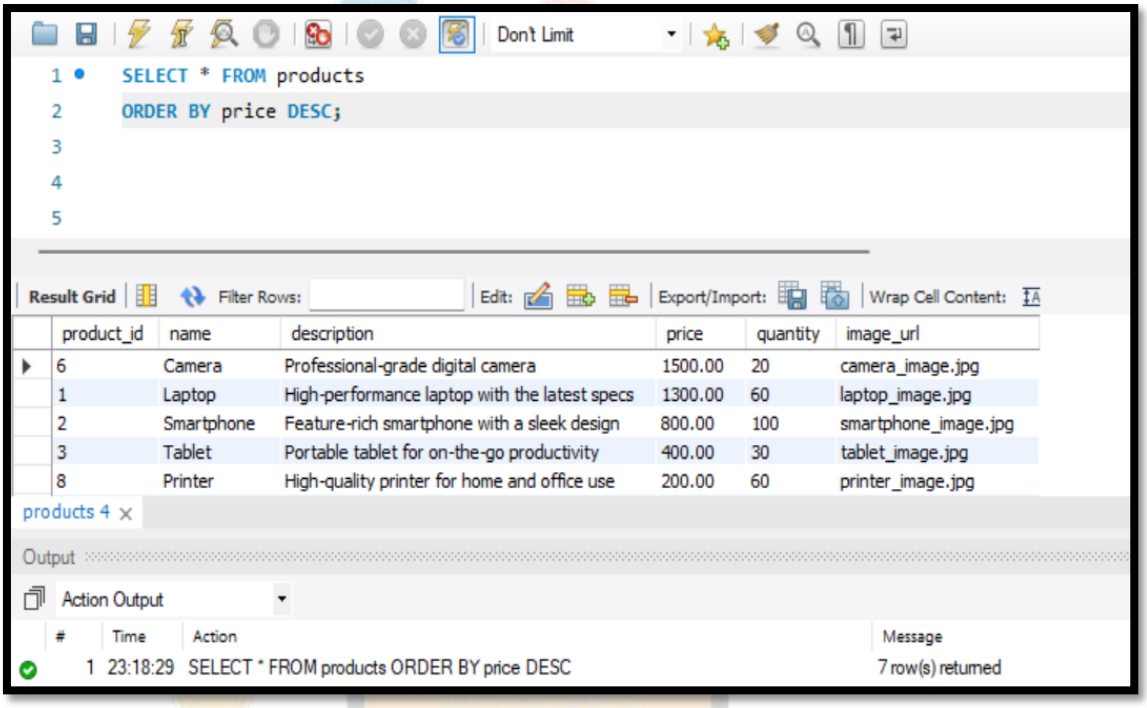
Portable tablet for on-the-go productivity

Output

Action Output

#	Time	Action	Message
1	23:16:15	SELECT * FROM products ORDER BY name ASC	7 row(s) returned

b) ORDER BY DESC:



```
SELECT * FROM products
ORDER BY price DESC;
```

product_id	name	description	price	quantity	image_url
6	Camera	Professional-grade digital camera	1500.00	20	camera_image.jpg
1	Laptop	High-performance laptop with the latest specs	1300.00	60	laptop_image.jpg
2	Smartphone	Feature-rich smartphone with a sleek design	800.00	100	smartphone_image.jpg
3	Tablet	Portable tablet for on-the-go productivity	400.00	30	tablet_image.jpg
8	Printer	High-quality printer for home and office use	200.00	60	printer_image.jpg

products 4

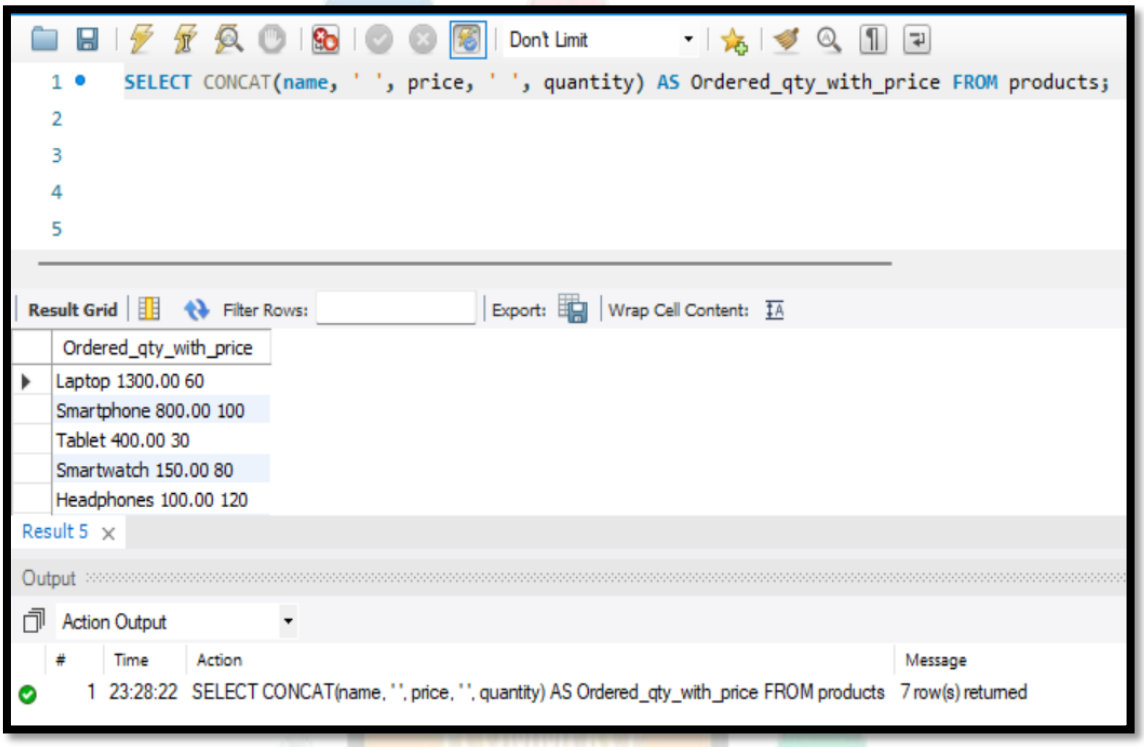
Output

Action Output

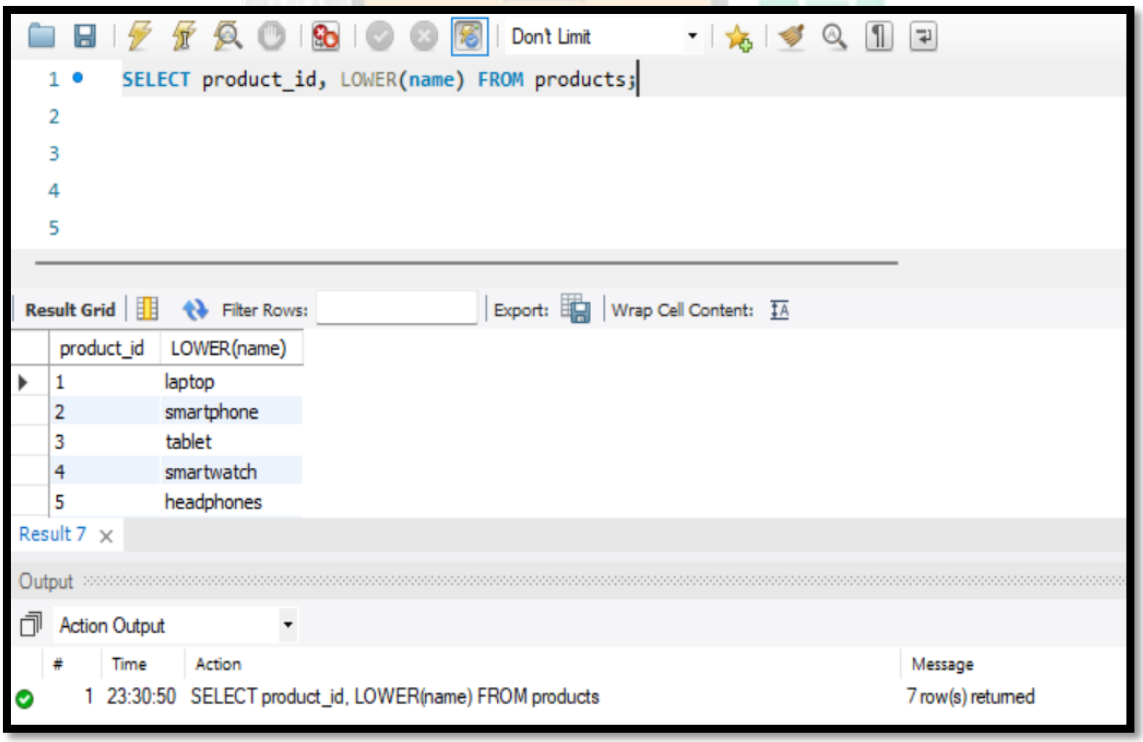
#	Time	Action	Message
1	23:18:29	SELECT * FROM products ORDER BY price DESC	7 row(s) returned

11. BUILT IN FUNCTIONS:

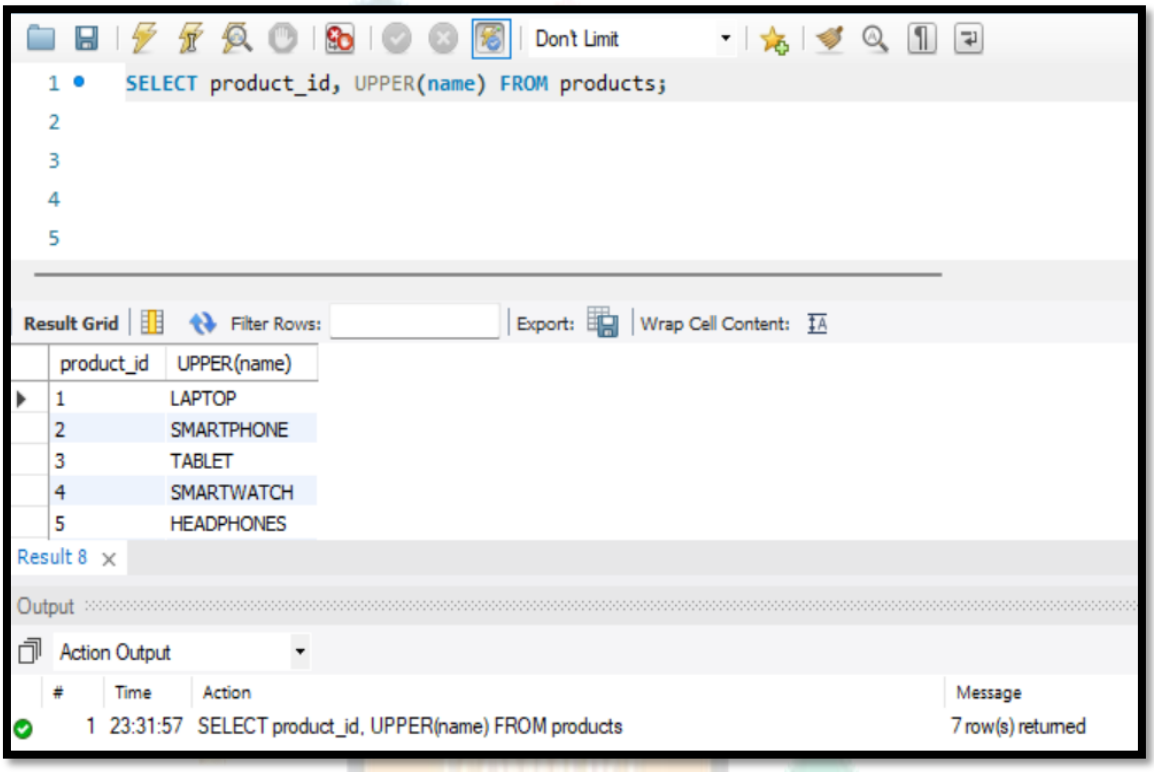
a) CONCAT:



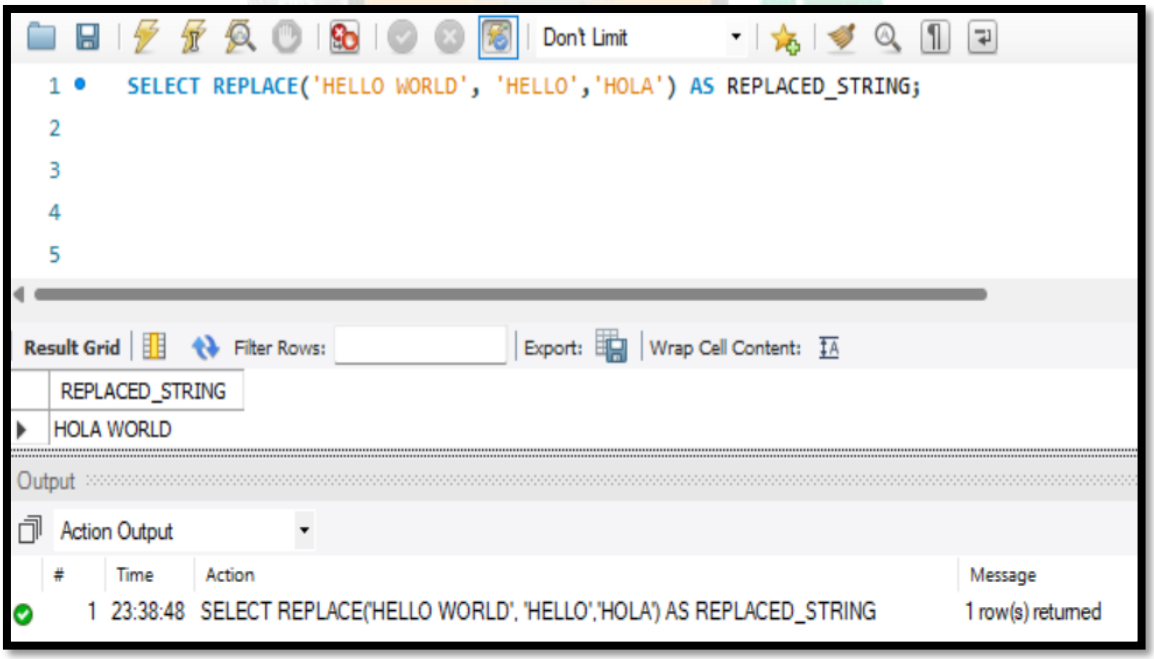
b) LOWER:



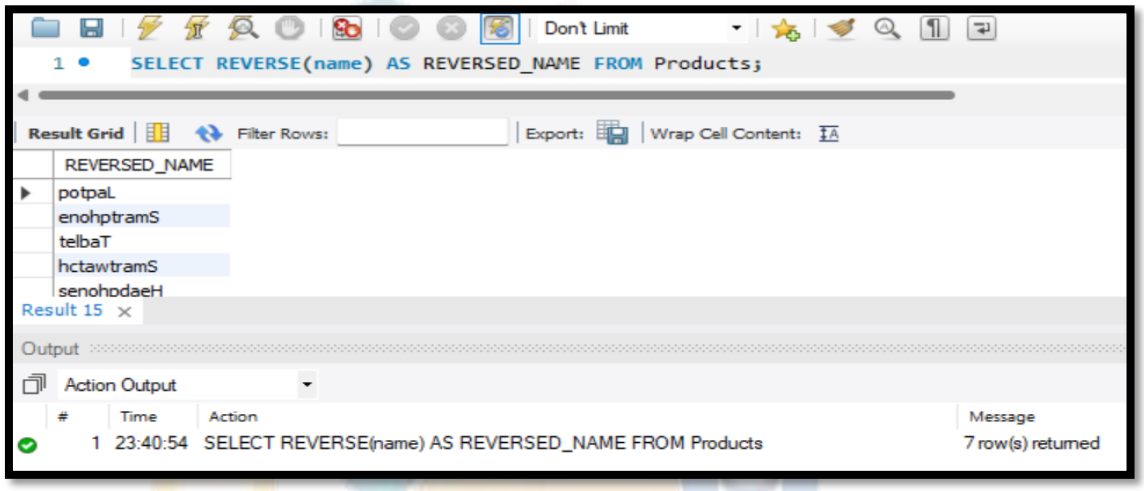
c) UPPER:



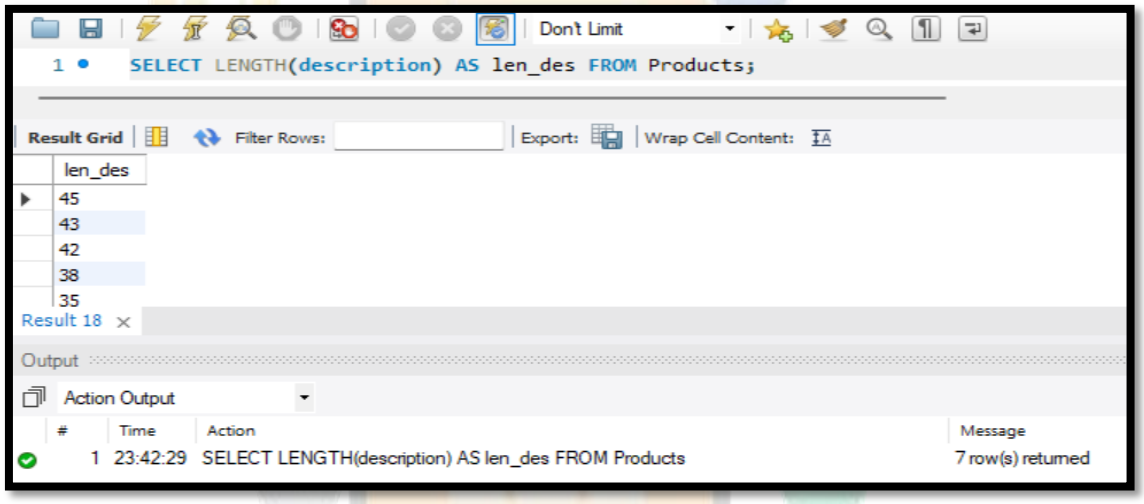
d) REPLACE:



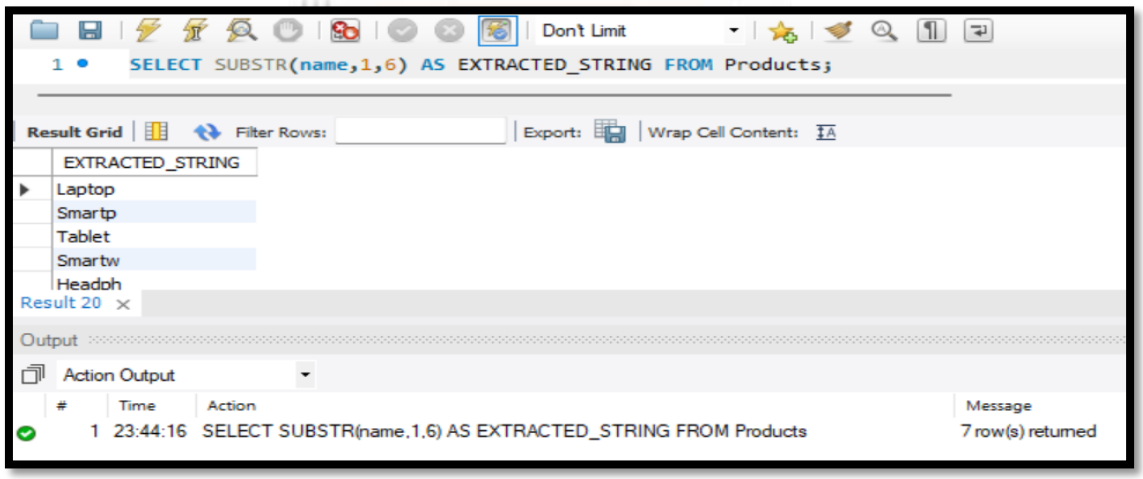
e) REVERSE:



f) LENGTH:

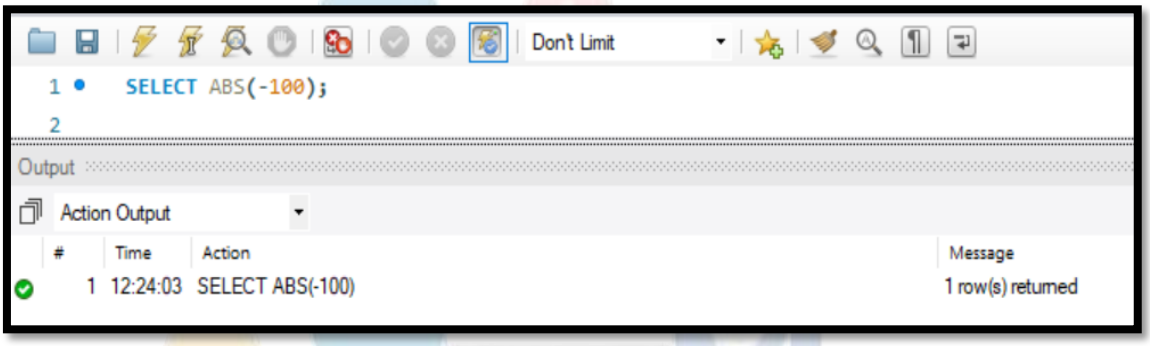


g) SUBSTRING:

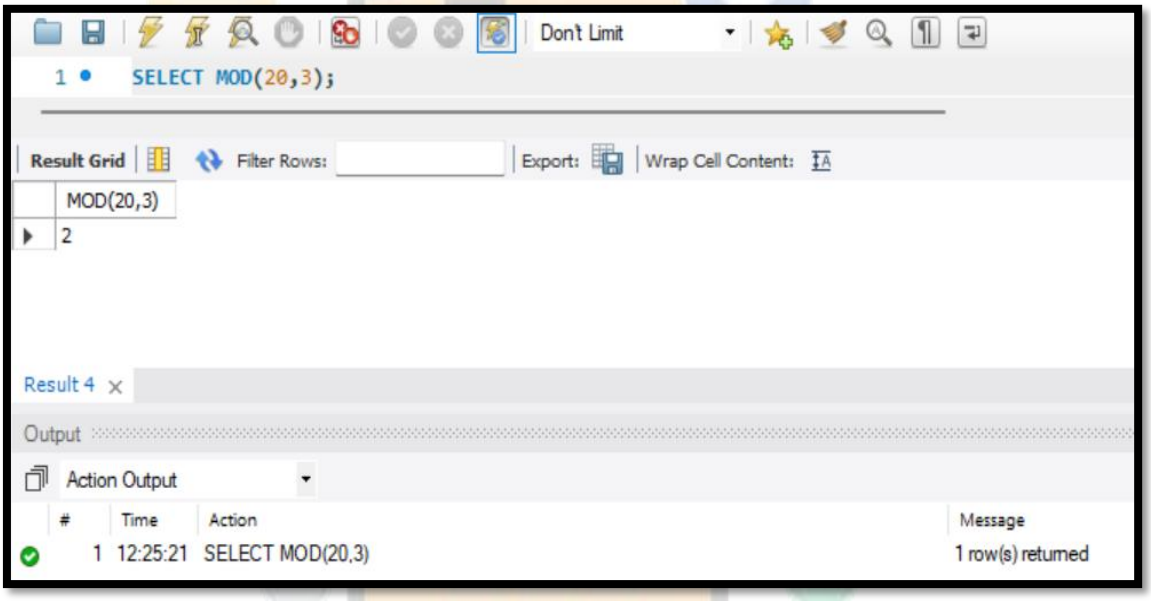


12.MATH ( ) FUNCTIONS:

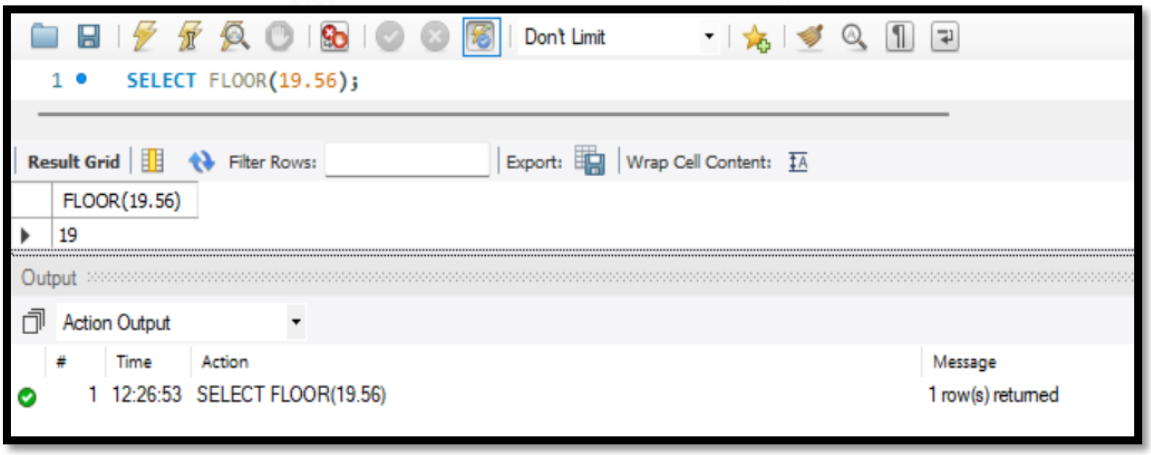
a) ABSOLUTE:



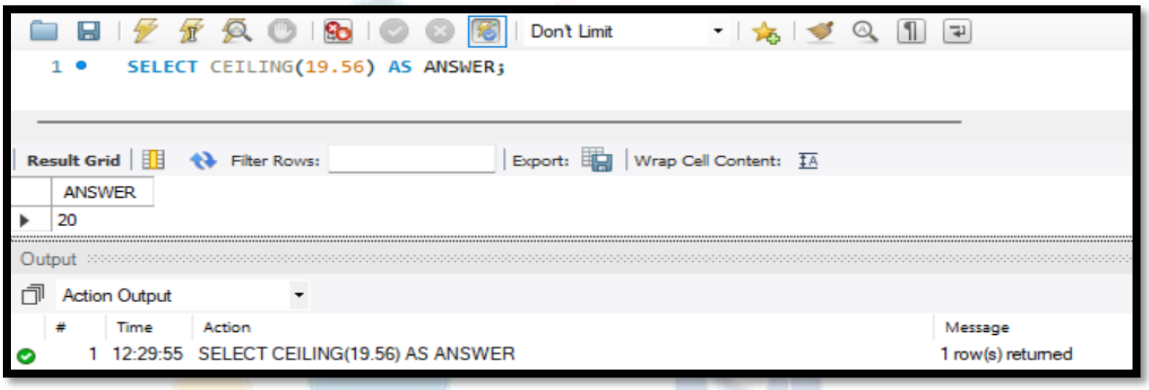
b) MOD:



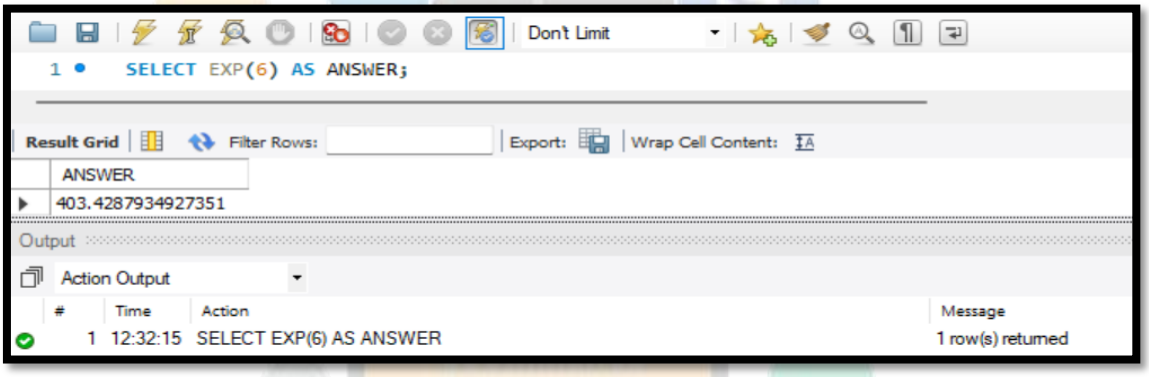
c) FLOOR:



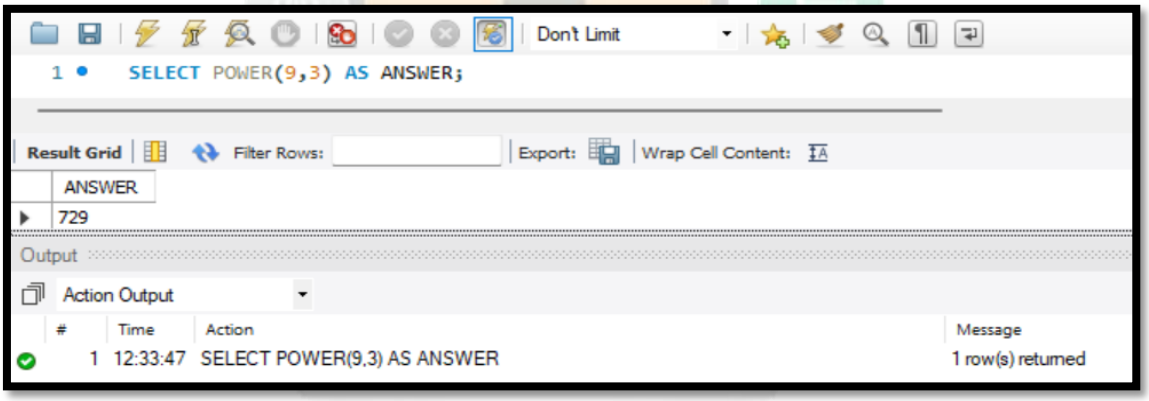
d) CEILING:



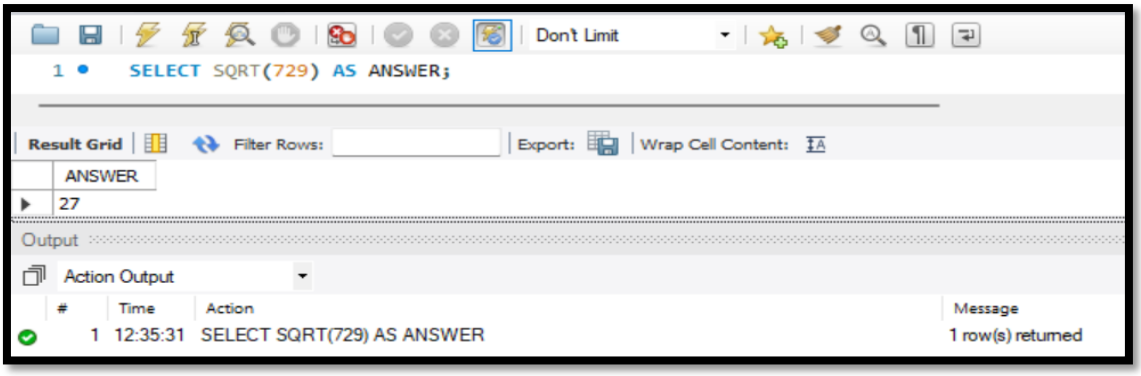
e) EXPONENTIAL:



f) POWER:

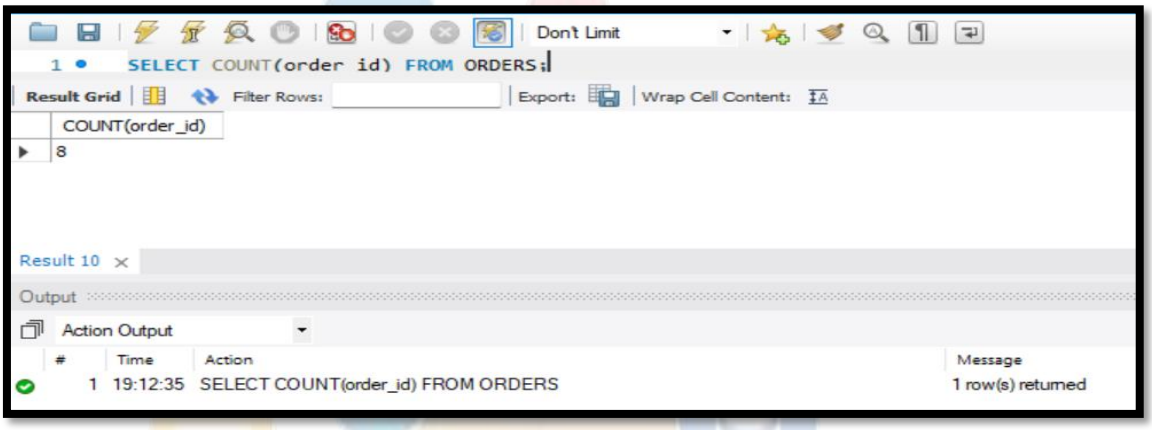


g) SQUARE ROOT:

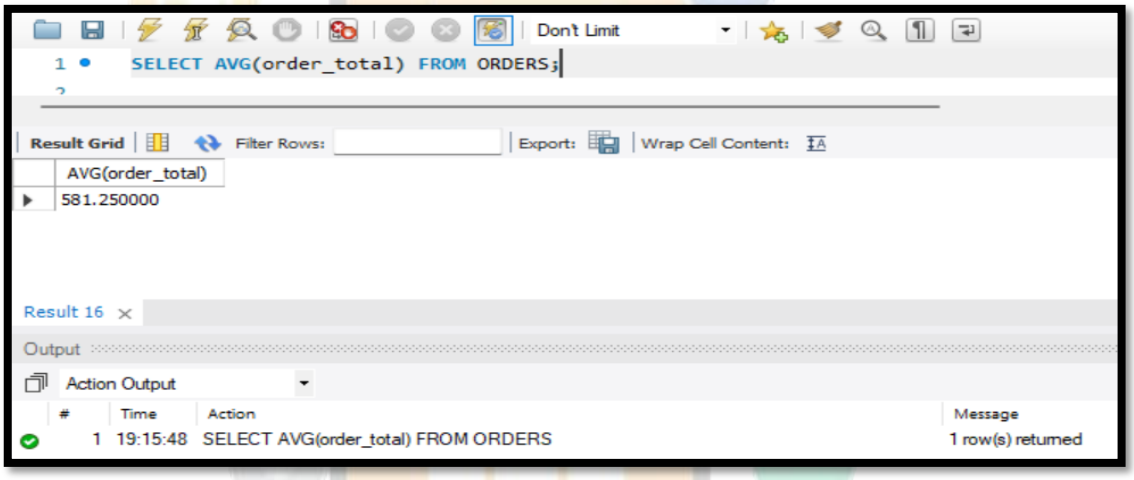


13. AGGREGATE FUNCTIONS:

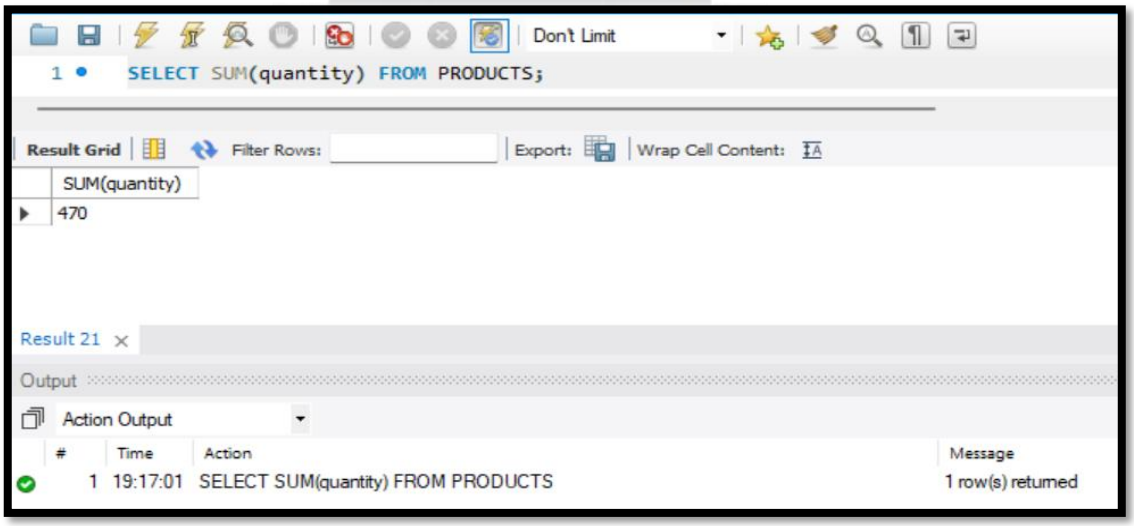
a) COUNT:



b) AVERAGE:

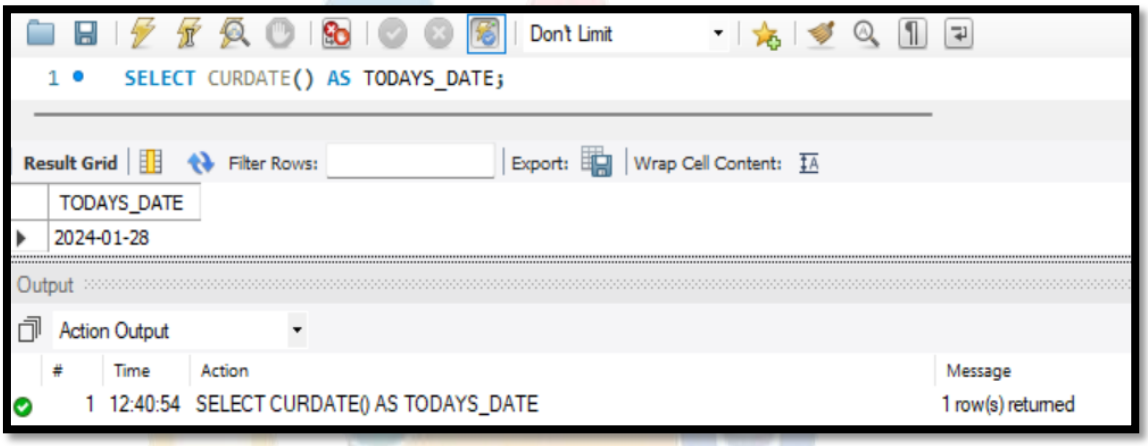


c) SUM:

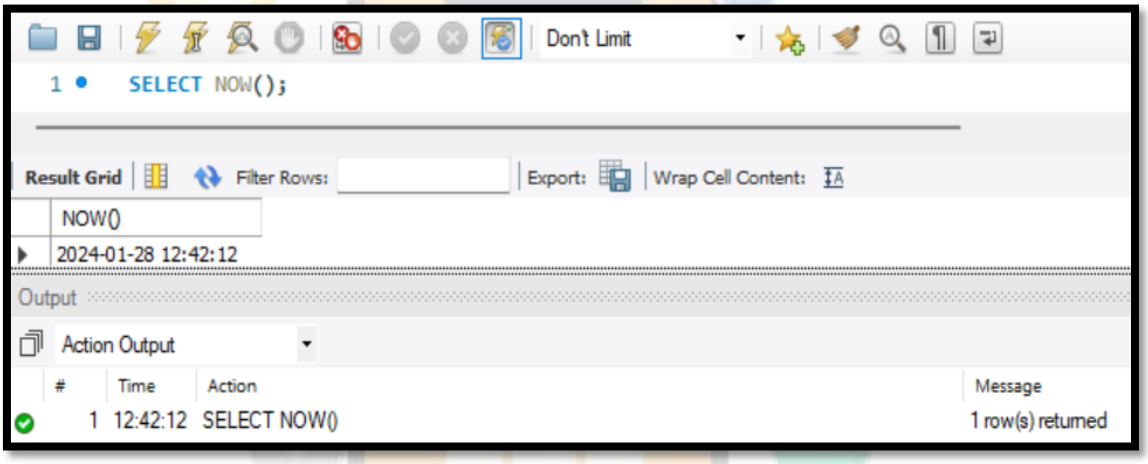


14. DATE ( ) FUNCTIONS:

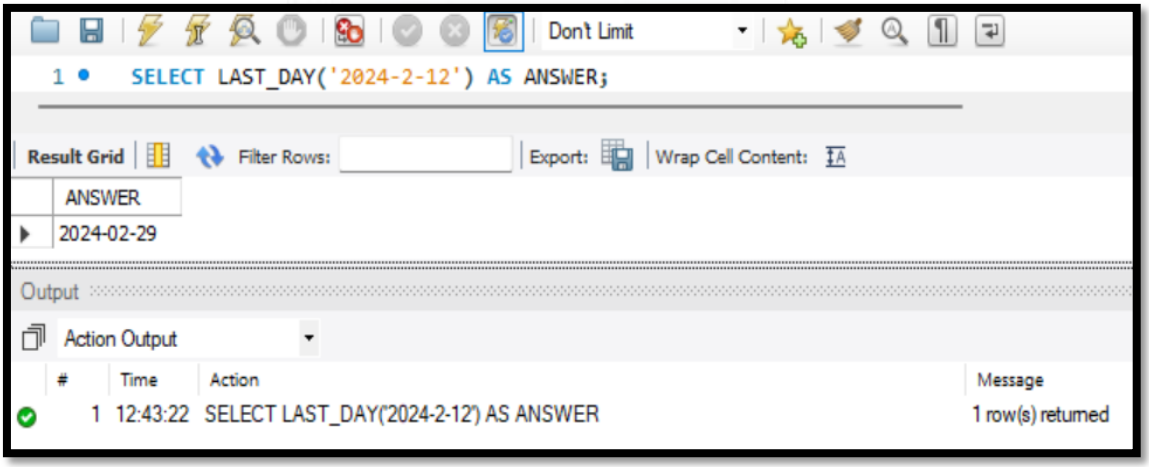
a) CURRDATE:



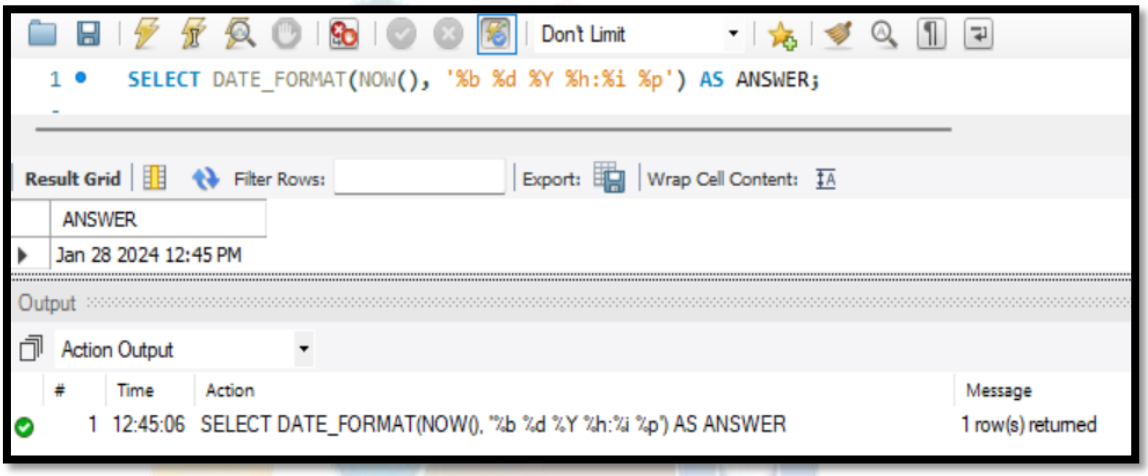
b) NOW:



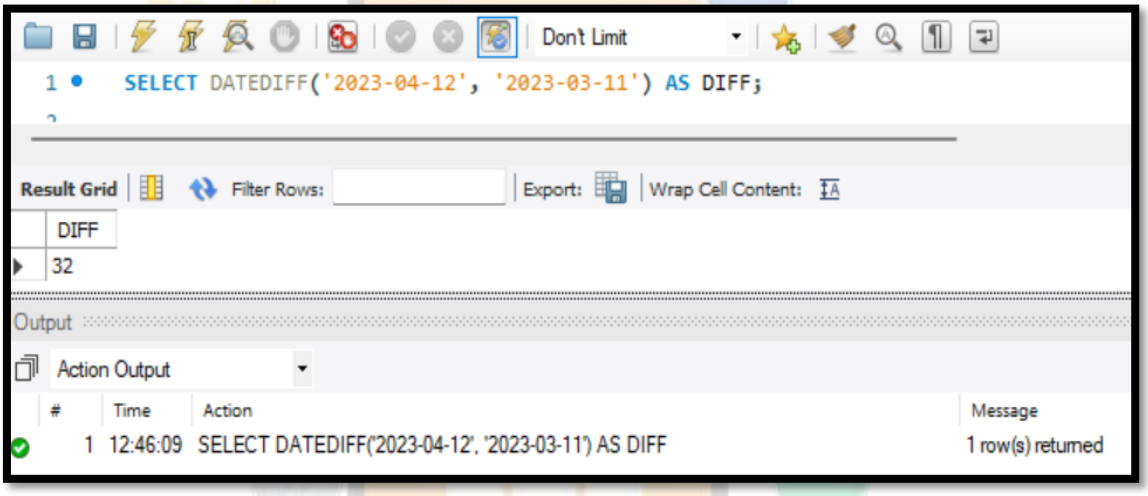
c) LAST_DAY:



d) DATE _FORMAT:



e) DATEDIFF:



15. UNION Operation:

```
SELECT 'Product' AS data_source, product_id AS id, name, description, price, quantity, image_url AS additional_info
FROM Products
UNION
SELECT 'User' AS data_source, user_id AS id, username AS name, email AS description, NULL AS price, NULL AS quantity, phone_number AS additional_info
FROM Users;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

data_source	id	name	description	price	quantity	additional_info
Product	1	Laptop	High-performance laptop with the latest specs	1300.00	60	laptop_image.jpg
Product	2	Smartphone	Feature-rich smartphone with a sleek design	800.00	100	smartphone_image.jpg
Product	3	Tablet	Portable tablet for on-the-go productivity	400.00	30	tablet_image.jpg
Product	4	Smartwatch	Fitness and health tracking smartwatch	150.00	80	smartwatch_image.jpg
Product	5	Headphones	Noise-canceling wireless headphones	100.00	120	headphones_image.jpg
Product	6	Camera	Professional-grade digital camera	1500.00	20	camera_image.jpg
Product	8	Printer	High-quality printer for home and office use	200.00	60	printer_image.jpg
User	1	alex_miller	alex.miller@example.com	NULL	NULL	555-1234-5678
User	2	sophia_davis	sophia.davis@example.com	NULL	NULL	555-9876-5432

Result 30

Output

Action Output

#	Time	Action	Message
1	19:37:05	SELECT 'Product' AS data_source, product_id AS id, name, description, price, quantity, image_url AS additi...	15 row(s) returned

```
SELECT product_id, name, description, price
FROM Products
UNION
SELECT user_id, username, email, NULL AS price
FROM Users;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

product_id	name	description	price
1	Laptop	High-performance laptop with the latest specs	1300.00
2	Smartphone	Feature-rich smartphone with a sleek design	800.00
3	Tablet	Portable tablet for on-the-go productivity	400.00
4	Smartwatch	Fitness and health tracking smartwatch	150.00
5	Headphones	Noise-canceling wireless headphones	
6	Camera	Professional-grade digital camera	1500.00
8	Printer	High-quality printer for home and office use	200.00
1	alex_miller	alex.miller@example.com	NULL
2	sophia_davis	sophia.davis@example.com	NULL

Fitness and health tracking smartwatch

Result 32

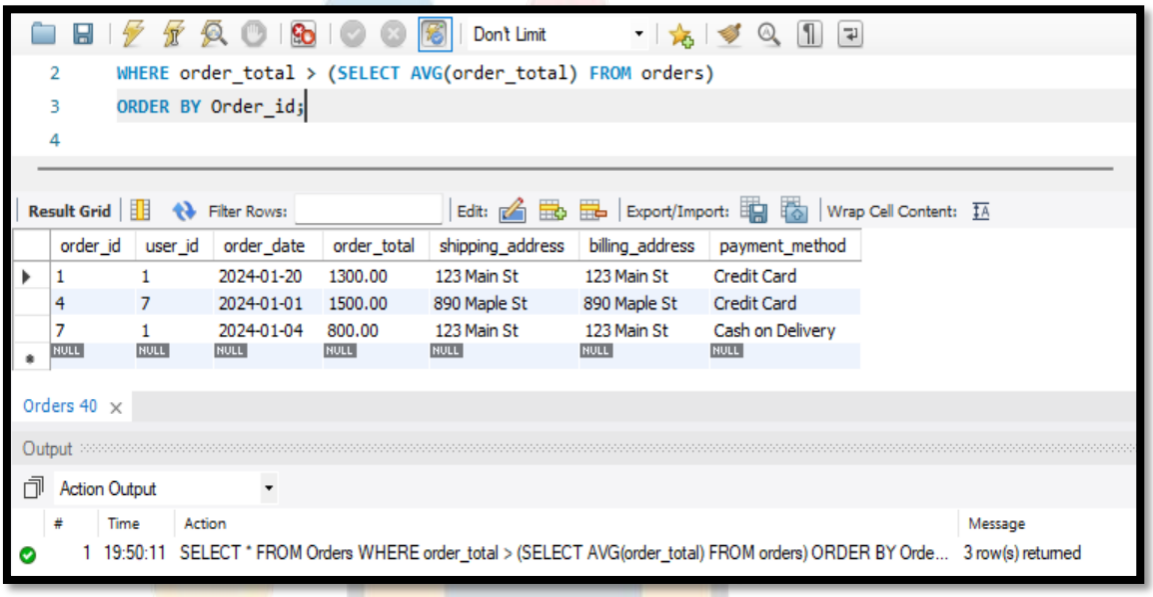
Output

Action Output

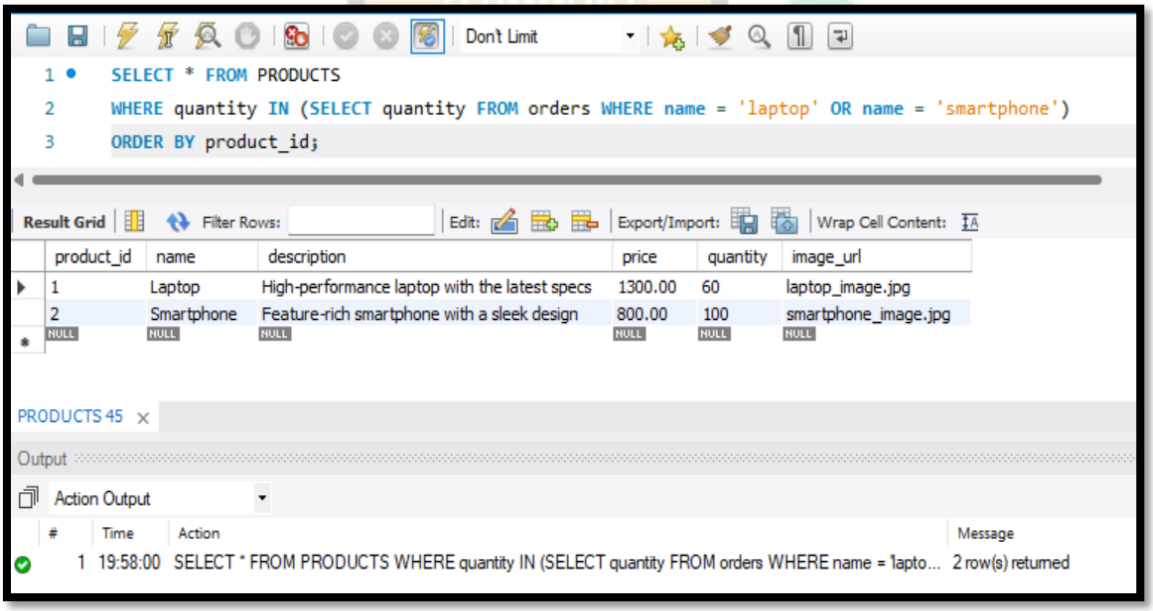
#	Time	Action	Message
1	19:40:09	SELECT product_id, name, description, price FROM Products UNION SELECT user_id, username, email, N...	15 row(s) returned

16. SUB-QUERY:

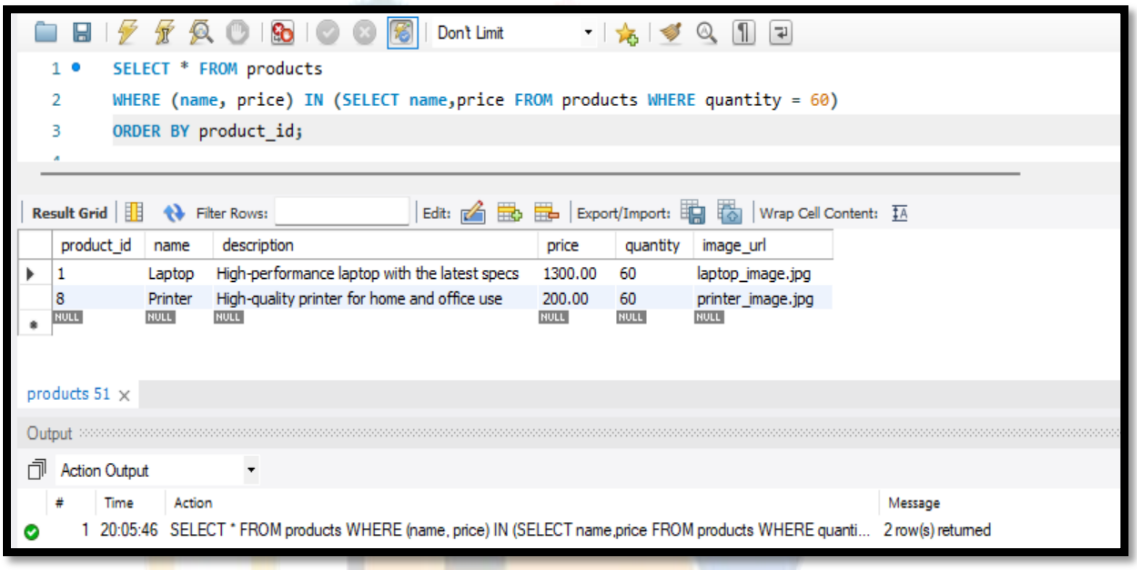
a) SINGLE ROW SUBQUERY:



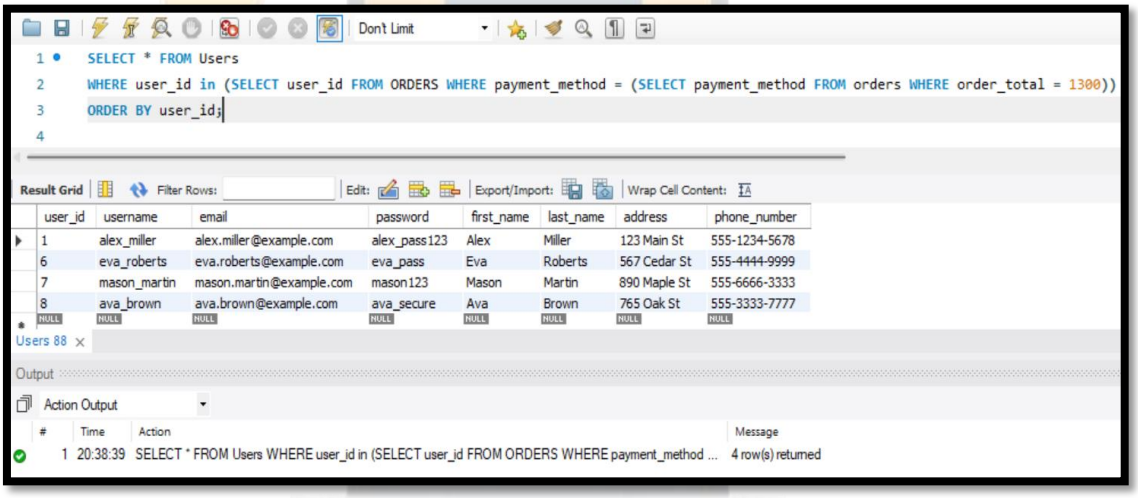
b) MULTIPLE ROW SUBQUERY:



c) MULTIPLE COLUMN SUBQUERY:

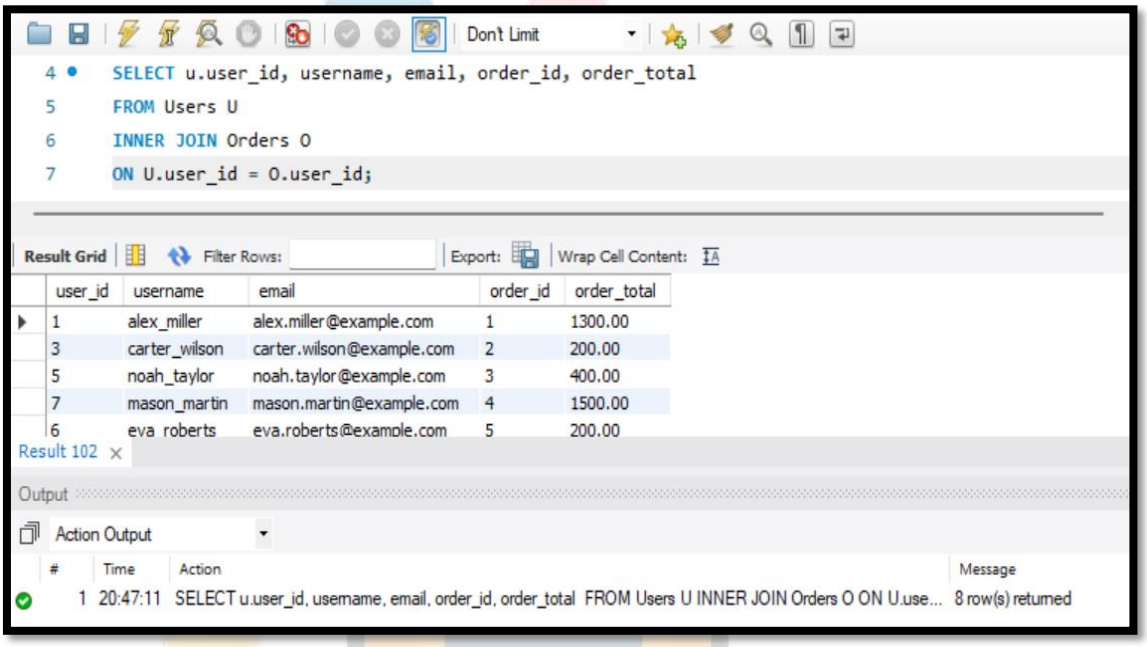


d) MULTIPLE TABLE SUBQUERY:



17.JOINS:

a) INNER JOIN:



```
SELECT u.user_id, username, email, order_id, order_total
FROM Users U
INNER JOIN Orders O
ON U.user_id = O.user_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

user_id	username	email	order_id	order_total
1	alex_miller	alex.miller@example.com	1	1300.00
3	carter_wilson	carter.wilson@example.com	2	200.00
5	noah_taylor	noah.taylor@example.com	3	400.00
7	mason_martin	mason.martin@example.com	4	1500.00
6	eva_roberts	eva.roberts@example.com	5	200.00

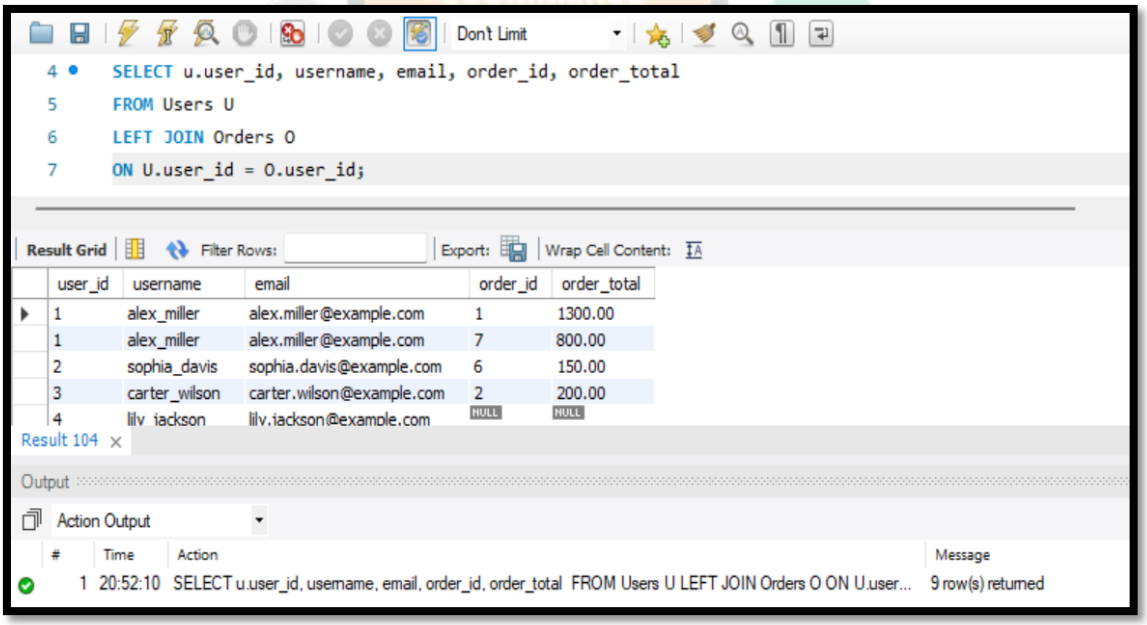
Result 102

Output

Action Output

#	Time	Action	Message
1	20:47:11	SELECT u.user_id, username, email, order_id, order_total FROM Users U INNER JOIN Orders O ON U.use...	8 row(s) returned

b) LEFT JOIN:



```
SELECT u.user_id, username, email, order_id, order_total
FROM Users U
LEFT JOIN Orders O
ON U.user_id = O.user_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

user_id	username	email	order_id	order_total
1	alex_miller	alex.miller@example.com	1	1300.00
1	alex_miller	alex.miller@example.com	7	800.00
2	sophia_davis	sophia.davis@example.com	6	150.00
3	carter_wilson	carter.wilson@example.com	2	200.00
4	lily_jackson	lily.jackson@example.com	NULL	NULL

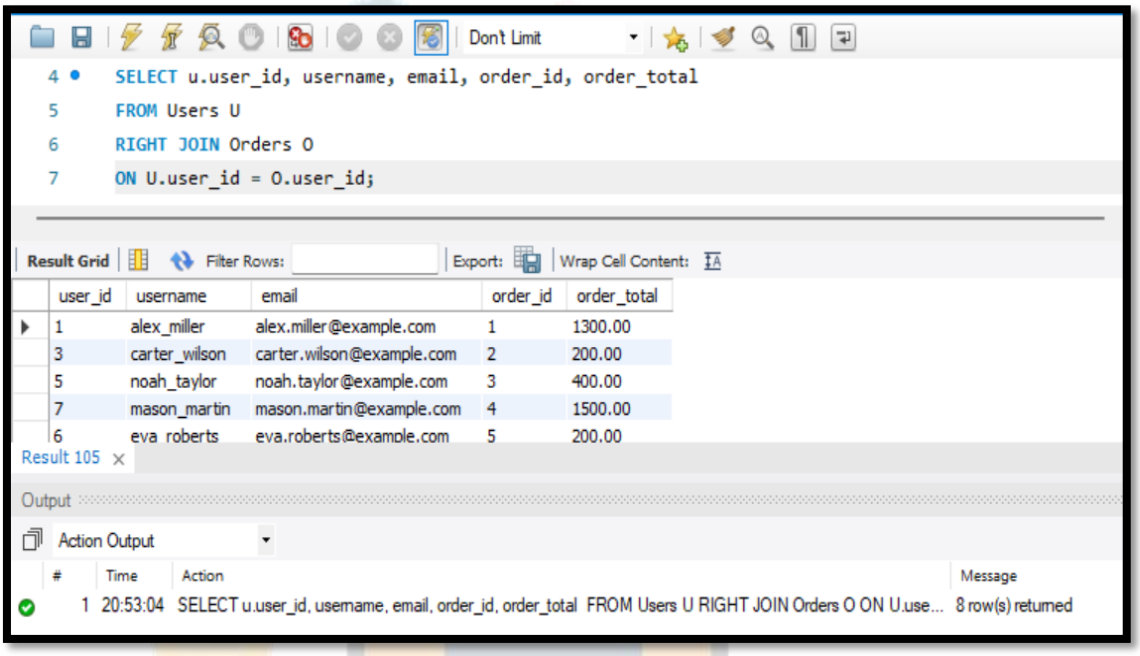
Result 104

Output

Action Output

#	Time	Action	Message
1	20:52:10	SELECT u.user_id, username, email, order_id, order_total FROM Users U LEFT JOIN Orders O ON U.user...	9 row(s) returned

c) RIGHT JOIN:



```
SELECT u.user_id, username, email, order_id, order_total
FROM Users U
RIGHT JOIN Orders O
ON U.user_id = O.user_id;
```

user_id	username	email	order_id	order_total
1	alex_miller	alex.miller@example.com	1	1300.00
3	carter_wilson	carter.wilson@example.com	2	200.00
5	noah_taylor	noah.taylor@example.com	3	400.00
7	mason_martin	mason.martin@example.com	4	1500.00
6	eva_roberts	eva.roberts@example.com	5	200.00

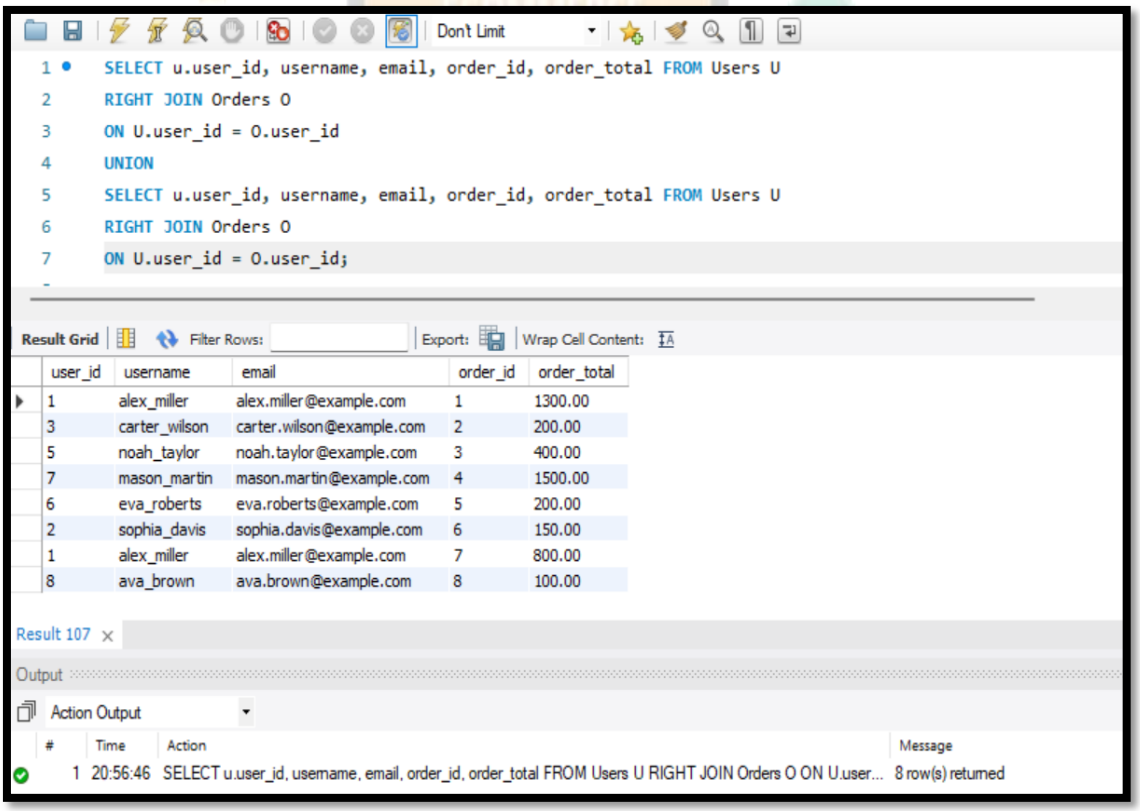
Result 105

Output

Action Output

#	Time	Action	Message
1	20:53:04	SELECT u.user_id, username, email, order_id, order_total FROM Users U RIGHT JOIN Orders O ON U.use...	8 row(s) returned

d) FULL JOIN:



```
SELECT u.user_id, username, email, order_id, order_total FROM Users U
RIGHT JOIN Orders O
ON U.user_id = O.user_id
UNION
SELECT u.user_id, username, email, order_id, order_total FROM Users U
RIGHT JOIN Orders O
ON U.user_id = O.user_id;
```

user_id	username	email	order_id	order_total
1	alex_miller	alex.miller@example.com	1	1300.00
3	carter_wilson	carter.wilson@example.com	2	200.00
5	noah_taylor	noah.taylor@example.com	3	400.00
7	mason_martin	mason.martin@example.com	4	1500.00
6	eva_roberts	eva.roberts@example.com	5	200.00
2	sophia_davis	sophia.davis@example.com	6	150.00
1	alex_miller	alex.miller@example.com	7	800.00
8	ava_brown	ava.brown@example.com	8	100.00

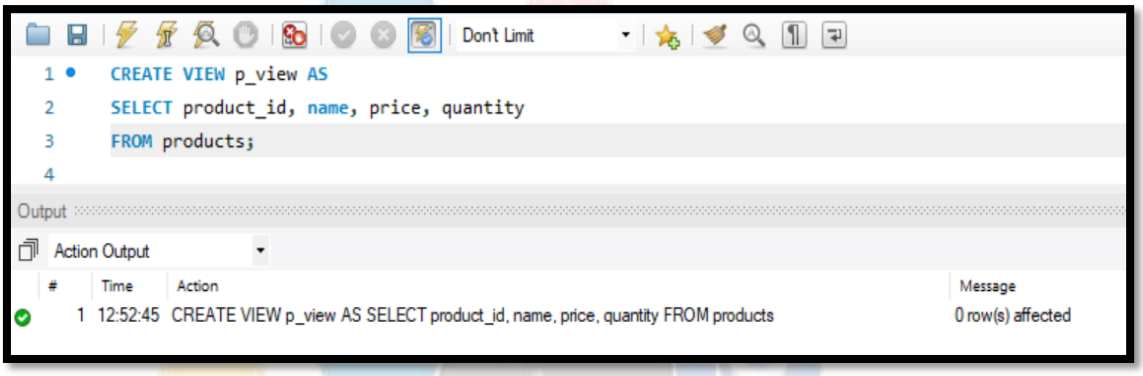
Result 107

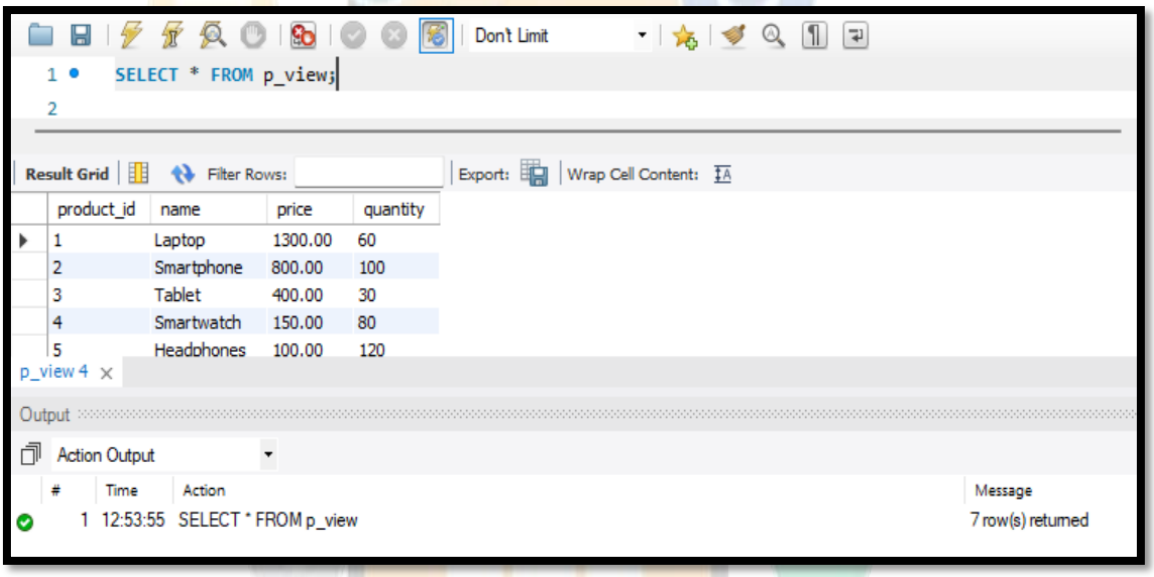
Output

Action Output

#	Time	Action	Message
1	20:56:46	SELECT u.user_id, username, email, order_id, order_total FROM Users U RIGHT JOIN Orders O ON U.user...	8 row(s) returned

18. VIWES:


Don't Limit
1 • CREATE VIEW p_view AS
2 SELECT product_id, name, price, quantity
3 FROM products;
4
Output
Action Output
Time Action Message
1 12:52:45 CREATE VIEW p_view AS SELECT product_id, name, price, quantity FROM products 0 row(s) affected


Don't Limit
1 • SELECT * FROM p_view;
2
Result Grid Filter Rows: Export: Wrap Cell Content:
product_id name price quantity
1 Laptop 1300.00 60
2 Smartphone 800.00 100
3 Tablet 400.00 30
4 Smartwatch 150.00 80
5 Headphones 100.00 120
p_view 4
Output
Action Output
Time Action Message
1 12:53:55 SELECT * FROM p_view 7 row(s) returned