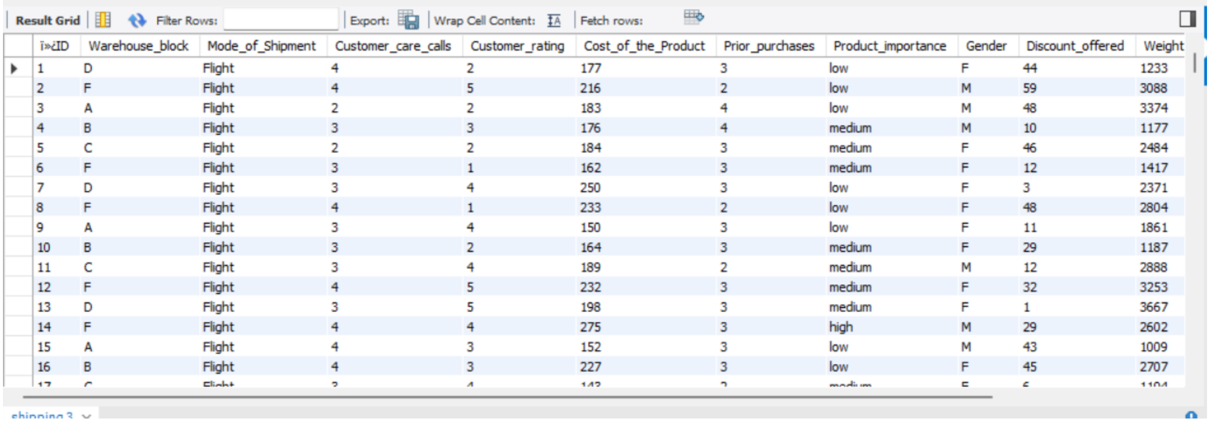
SQL Query with output

--Load Dataset

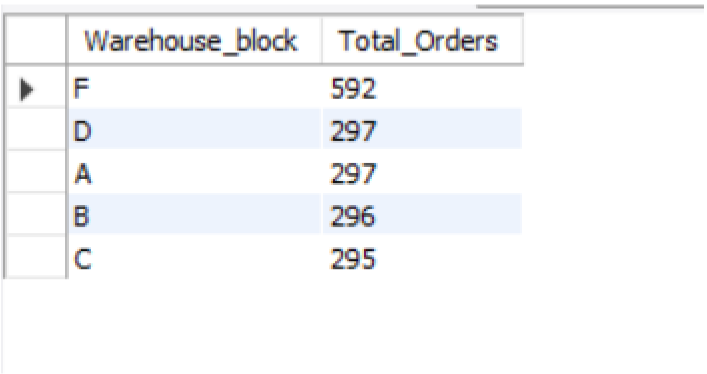
```
use amitdb;

select *from shipping;
```



ï»¿ID	Warehouse_block	Mode_of_Shipment	Customer_care_calls	Customer_rating	Cost_of_the_Product	Prior_purchases	Product_importance	Gender	Discount_offered	Weight
1	D	Flight	4	2	177	3	low	F	44	1233
2	F	Flight	4	5	216	2	low	M	59	3088
3	A	Flight	2	2	183	4	low	M	48	3374
4	B	Flight	3	3	176	4	medium	M	10	1177
5	C	Flight	2	2	184	3	medium	F	46	2484
6	F	Flight	3	1	162	3	medium	F	12	1417
7	D	Flight	3	4	250	3	low	F	3	2371
8	F	Flight	4	1	233	2	low	F	48	2804
9	A	Flight	3	4	150	3	low	F	11	1861
10	B	Flight	3	2	164	3	medium	F	29	1187
11	C	Flight	3	4	189	2	medium	M	12	2888
12	F	Flight	4	5	232	3	medium	F	32	3253
13	D	Flight	3	5	198	3	medium	F	1	3667
14	F	Flight	4	4	275	3	high	M	29	2602
15	A	Flight	4	3	152	3	low	M	43	1009
16	B	Flight	4	3	227	3	low	F	45	2707

-- a. SELECT, WHERE, ORDER BY, GROUP BY

```
SELECT Warehouse_block, COUNT(*) AS Total_Orders

FROM shipping

WHERE Mode_of_Shipment = 'Flight'

GROUP BY Warehouse_block

ORDER BY Total_Orders DESC;
```



Warehouse_block	Total_Orders
F	592
D	297
A	297
B	296
C	295

SQL Query with output

-- b. JOINS (Simulating by creating a sample customers table and joining)

```
CREATE TABLE customers (

   customer_id INT PRIMARY KEY,

   customer_name VARCHAR(100),

   gender VARCHAR(10)

);
```

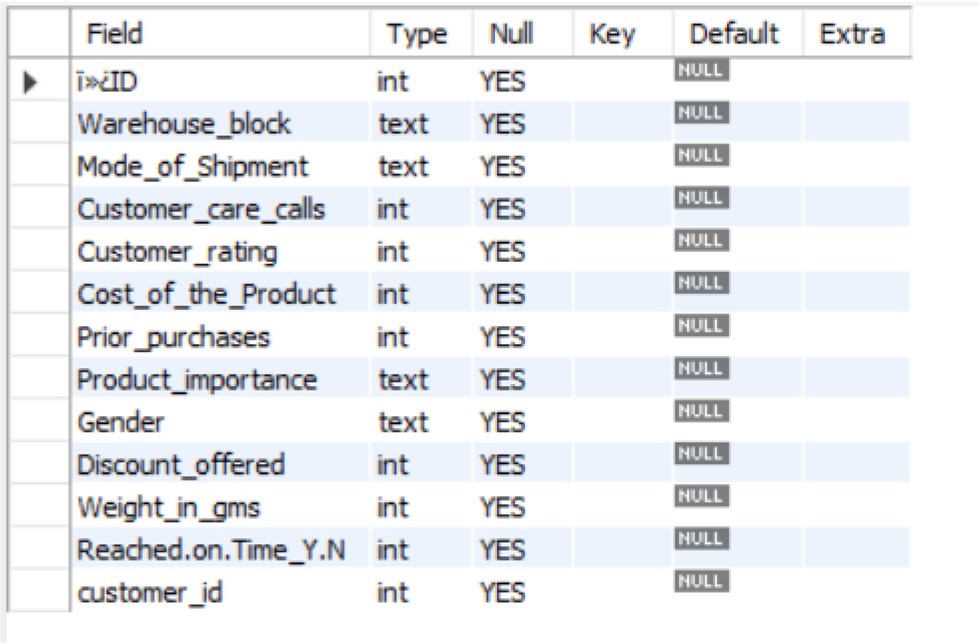
-- Add customer_id to ecommerce_shipping (for join purposes)

```
ALTER TABLE shipping ADD COLUMN customer_id INT;
```

-- Insert sample customers

```
INSERT INTO customers VALUES

(101, 'Amit Sharma', 'M'),

(102, 'Priya Kapoor', 'F'),

(103, 'Ravi Desai', 'M'),

(104, 'Neha Singh', 'F'),

(105, 'Arjun Reddy', 'M');
```

```
DESCRIBE shipping;
```



	Field	Type	Null	Key	Default	Extra
▶	ï»¿ID	int	YES		NULL	
	Warehouse_block	text	YES		NULL	
	Mode_of_Shipment	text	YES		NULL	
	Customer_care_calls	int	YES		NULL	
	Customer_rating	int	YES		NULL	
	Cost_of_the_Product	int	YES		NULL	
	Prior_purchases	int	YES		NULL	
	Product_importance	text	YES		NULL	
	Gender	text	YES		NULL	
	Discount_offered	int	YES		NULL	
	Weight_in_gms	int	YES		NULL	
	Reached.on.Time_Y.N	int	YES		NULL	
	customer_id	int	YES		NULL	

SQL Query with output

-- Update ecommerce_shipping to match customer_id

ALTER TABLE shipping ADD COLUMN id INT PRIMARY KEY AUTO_INCREMENT;

UPDATE shipping SET customer_id = 101 WHERE id = 1;

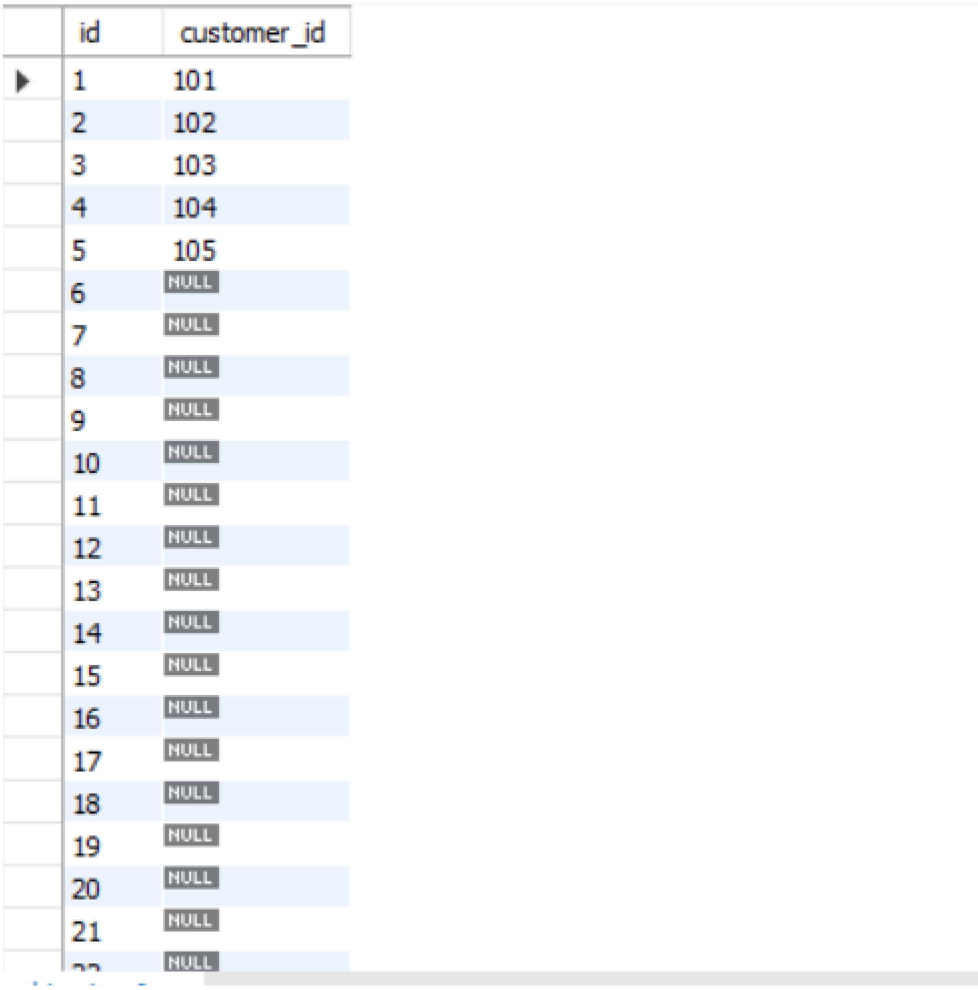
UPDATE shipping SET customer_id = 102 WHERE id = 2;

UPDATE shipping SET customer_id = 103 WHERE id = 3;

UPDATE shipping SET customer_id = 104 WHERE id = 4;

UPDATE shipping SET customer_id = 105 WHERE id = 5;

SELECT id, customer_id FROM shipping;

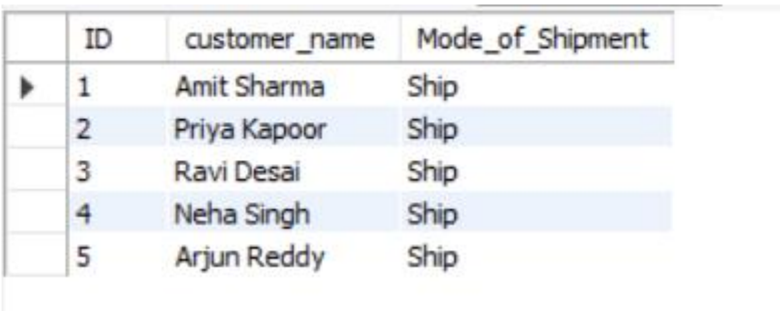


id	customer_id
1	101
2	102
3	103
4	104
5	105
6	NULL
7	NULL
8	NULL
9	NULL
10	NULL
11	NULL
12	NULL
13	NULL
14	NULL
15	NULL
16	NULL
17	NULL
18	NULL
19	NULL
20	NULL
21	NULL
22	NULL

SQL Query with output

-- INNER JOIN

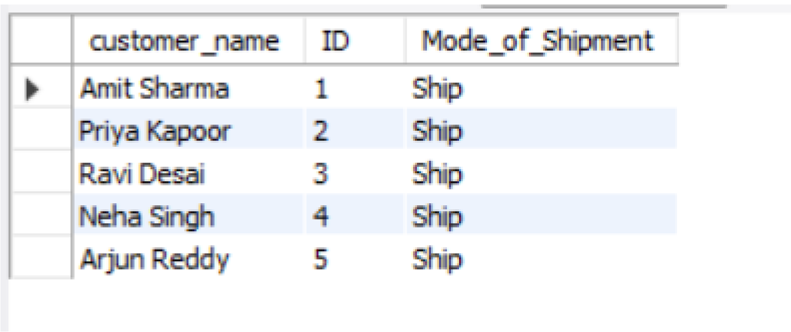
```
SELECT es.ID, c.customer_name, es.Mode_of_Shipment

FROM shipping es

INNER JOIN customers c ON es.customer_id = c.customer_id;
```



ID	customer_name	Mode_of_Shipment
1	Amit Sharma	Ship
2	Priya Kapoor	Ship
3	Ravi Desai	Ship
4	Neha Singh	Ship
5	Arjun Reddy	Ship

-- LEFT JOIN

```
SELECT c.customer_name, es.ID, es.Mode_of_Shipment

FROM customers c

LEFT JOIN shipping es ON es.customer_id = c.customer_id;
```

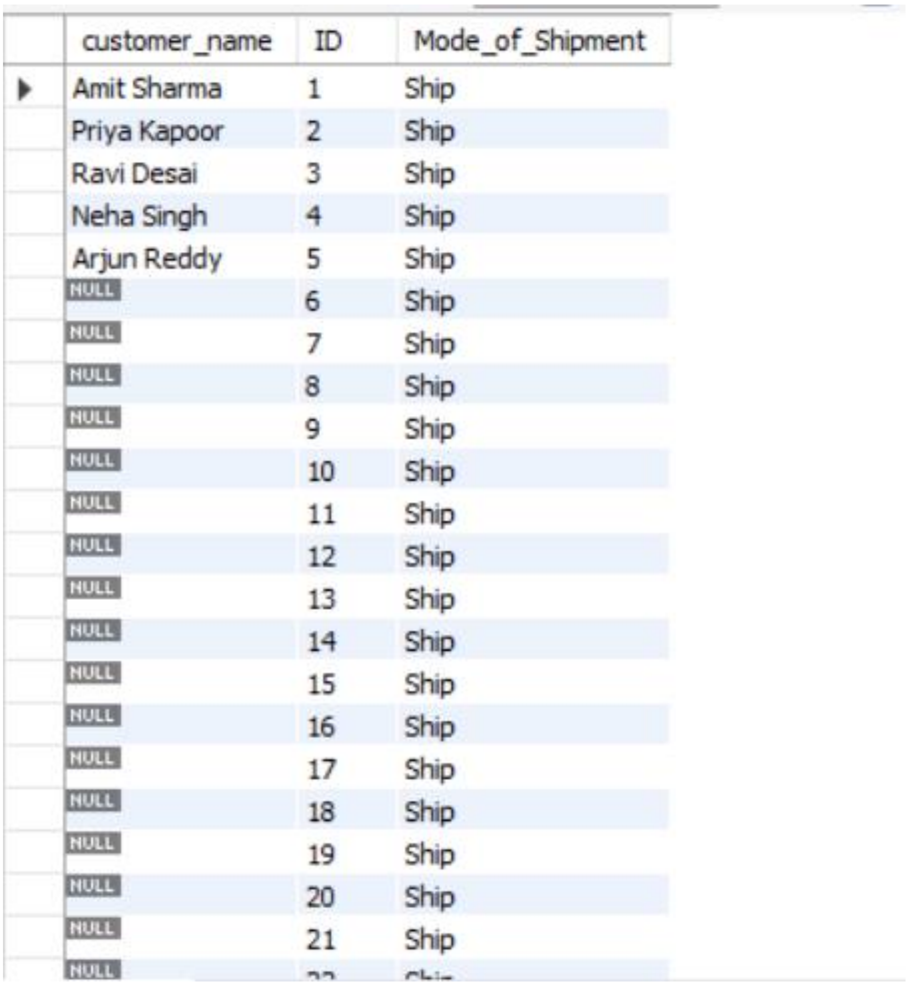


customer_name	ID	Mode_of_Shipment
Amit Sharma	1	Ship
Priya Kapoor	2	Ship
Ravi Desai	3	Ship
Neha Singh	4	Ship
Arjun Reddy	5	Ship

SQL Query with output

-- RIGHT JOIN (Only in MySQL)

```
SELECT c.customer_name, es.ID, es.Mode_of_Shipment

FROM customers c

RIGHT JOIN shipping es ON es.customer_id = c.customer_id;
```

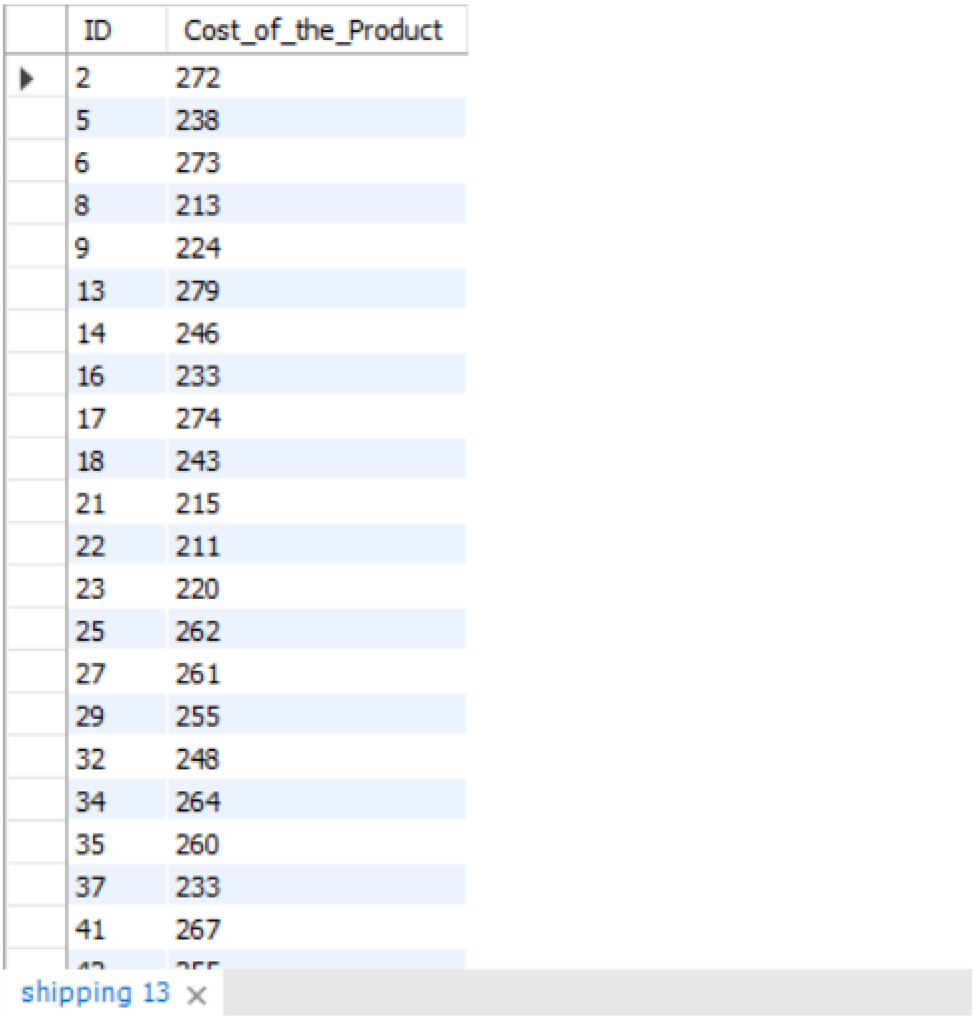


customer_name	ID	Mode_of_Shipment
Amit Sharma	1	Ship
Priya Kapoor	2	Ship
Ravi Desai	3	Ship
Neha Singh	4	Ship
Arjun Reddy	5	Ship
NULL	6	Ship
NULL	7	Ship
NULL	8	Ship
NULL	9	Ship
NULL	10	Ship
NULL	11	Ship
NULL	12	Ship
NULL	13	Ship
NULL	14	Ship
NULL	15	Ship
NULL	16	Ship
NULL	17	Ship
NULL	18	Ship
NULL	19	Ship
NULL	20	Ship
NULL	21	Ship
NULL	22	Ship

SQL Query with output

-- c. Subquery: Get all orders where product cost > average product cost

```
SELECT ID, Cost_of_the_Product

FROM shipping

WHERE Cost_of_the_Product > (

   SELECT AVG(Cost_of_the_Product) FROM shipping

);
```

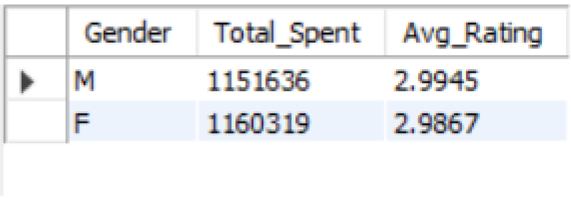


ID	Cost_of_the_Product
2	272
5	238
6	273
8	213
9	224
13	279
14	246
16	233
17	274
18	243
21	215
22	211
23	220
25	262
27	261
29	255
32	248
34	264
35	260
37	233
41	267
43	255

SQL Query with output

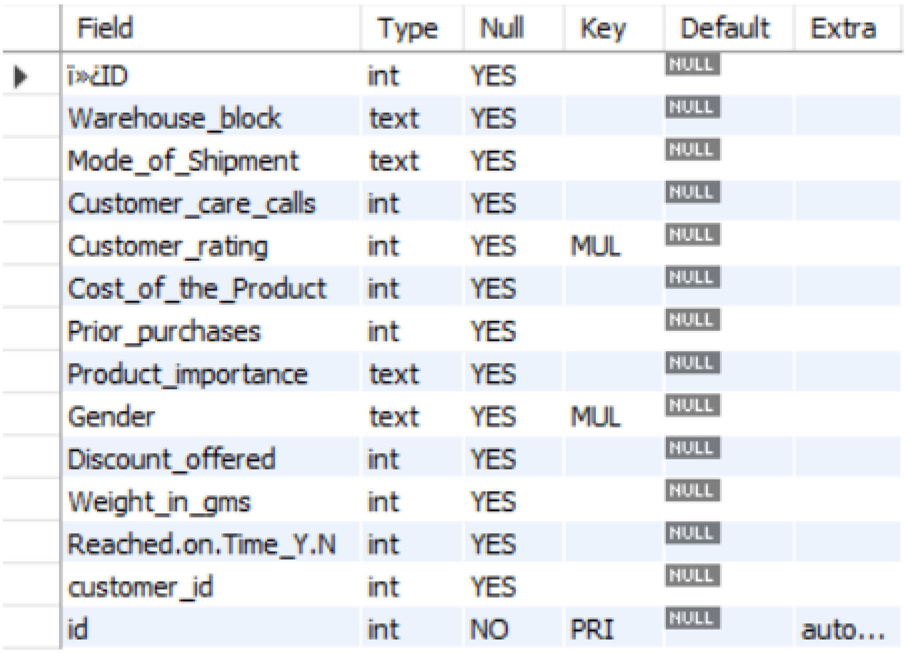
-- d. Aggregate functions (SUM, AVG)

```
SELECT Gender,
    SUM(Cost_of_the_Product) AS Total_Spent,
    AVG(Customer_rating) AS Avg_Rating
FROM shipping
GROUP BY Gender;
```



	Gender	Total_Spent	Avg_Rating
▶	M	1151636	2.9945
	F	1160319	2.9867

```
SHOW COLUMNS FROM shipping;
```

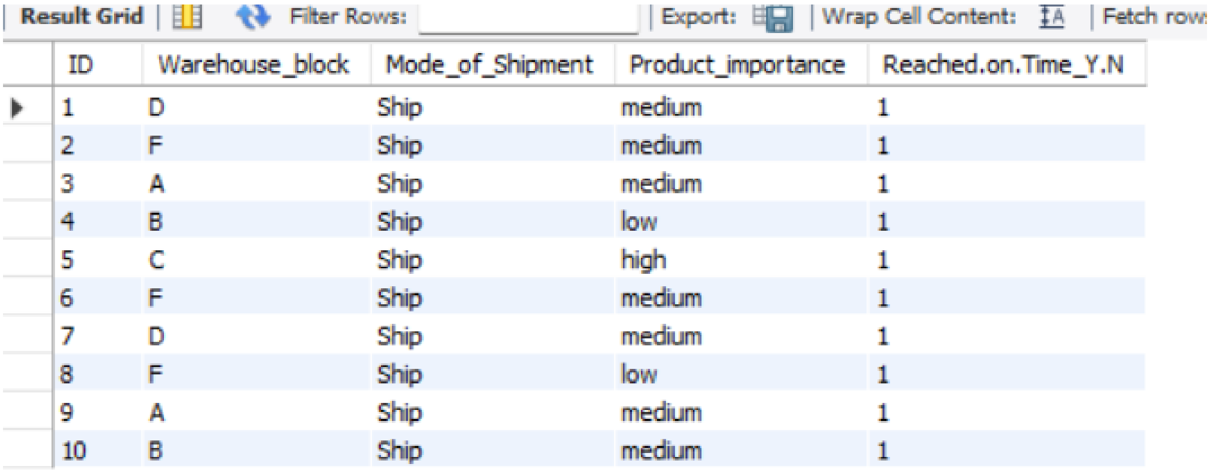


	Field	Type	Null	Key	Default	Extra
▶	ï»¿ID	int	YES		NULL	
	Warehouse_block	text	YES		NULL	
	Mode_of_Shipment	text	YES		NULL	
	Customer_care_calls	int	YES		NULL	
	Customer_rating	int	YES	MUL	NULL	
	Cost_of_the_Product	int	YES		NULL	
	Prior_purchases	int	YES		NULL	
	Product_importance	text	YES		NULL	
	Gender	text	YES	MUL	NULL	
	Discount_offered	int	YES		NULL	
	Weight_in_gms	int	YES		NULL	
	Reached.on.Time_Y.N	int	YES		NULL	
	customer_id	int	YES		NULL	
	id	int	NO	PRI	NULL	auto...

SQL Query with output

-- e. Create view for analysis

```
CREATE VIEW shipment_summary_view AS

SELECT ID, Warehouse_block, Mode_of_Shipment, Product_importance, `Reached.on.Time_Y.N`

FROM shipping;


SELECT * FROM shipment_summary_view LIMIT 10;
```



ID	Warehouse_block	Mode_of_Shipment	Product_importance	Reached.on.Time_Y.N
1	D	Ship	medium	1
2	F	Ship	medium	1
3	A	Ship	medium	1
4	B	Ship	low	1
5	C	Ship	high	1
6	F	Ship	medium	1
7	D	Ship	medium	1
8	F	Ship	low	1
9	A	Ship	medium	1
10	B	Ship	medium	1

-- f. Optimize queries with indexes

```
DROP INDEX idx_gender ON shipping;

CREATE INDEX idx_gender ON shipping(Gender(10));

SHOW INDEXES FROM shipping;
```

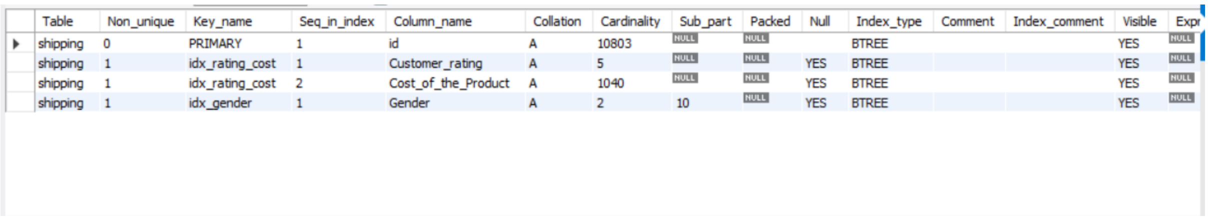


Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expr
shipping	0	PRIMARY	1	id	A	10803	NULL	NULL		BTREE			YES	NULL
shipping	1	idx_rating_cost	1	Customer_rating	A	5	NULL	NULL	YES	BTREE			YES	NULL
shipping	1	idx_rating_cost	2	Cost_of_the_Product	A	1040	NULL	NULL	YES	BTREE			YES	NULL
shipping	1	idx_gender	1	Gender	A	2	10	NULL	YES	BTREE			YES	NULL