

DATABASE

❖ Table :-

```
CREATE TABLE products (  
ProductID INT PRIMARY KEY,  
ProductName VARCHAR(255),  
ProductPrice DECIMAL(10, 2),  
AvailableQTY INT,  
ShippingCity VARCHAR(255),  
ShippingCountry VARCHAR(255),  
ShippingDate DATE  
);
```

❖ Data :-

```
INSERT INTO products (ProductID, ProductName, ProductPrice, AvailableQTY, ShippingCity,  
ShippingCountry, ShippingDate)  
VALUES  
(1, 'Apple iPhone 13', 1099.00, 50, 'Los Angeles', 'USA', '2023-04-17'),  
(2, 'Samsung Galaxy S21', 899.99, 100, 'New York City', 'USA', '2023-04-18'),  
(3, 'Google Pixel 6', 799.99, 25, 'Chicago', 'USA', '2023-04-19'),  
(4, 'Sony PlayStation 5', 499.99, 75, 'Houston', 'USA', '2023-04-20'),  
(5, 'Canon EOS R6', 2499.99, 60, 'San Francisco', 'USA', '2023-04-21'),  
(6, 'Dell XPS 15', 1499.99, 30, 'Mumbai', 'India', '2023-04-22'),  
(7, 'Nike Air Jordan 1', 170.00, 90, 'Johannesburg', 'South Africa', '2023-04-23'),  
(8, 'Levi's 501 Jeans', 59.99, 20, 'London', 'England', '2023-04-24'),  
(9, 'Bose QuietComfort 35 II', 299.99, 55, 'Seattle', 'USA', '2023-04-25'),  
(10, 'Fitbit Versa 3', 229.95, 40, 'Delhi', 'India', '2023-04-26'),  
(11, 'Sony WH-1000XM4', 349.99, 15, 'Cape Town', 'South Africa', '2023-04-27'),  
(12, 'Apple MacBook Pro', 1499.00, 25, 'Birmingham', 'England', '2023-04-28'),  
(13, 'Samsung QLED TV', 1299.99, 10, 'Mumbai', 'India', '2023-04-29'),  
(14, 'Amazon Echo Dot', 49.99, 100, 'Chicago', 'USA', '2023-04-30'),  
(15, 'Nike Air Max 270', 150.00, 50, 'Pretoria', 'South Africa', '2023-05-01'),  
(16, 'Canon EF 50mm f/1.8 STM Lens', 125.00, 30, 'London', 'England', '2023-05-02'),  
(17, 'Fitbit Charge 5', 179.95, 20, 'Mumbai', 'India', '2023-05-03'),  
(18, 'Microsoft Surface Pro 7', 999.99, 35, 'Durban', 'South Africa', '2023-05-04'),  
(19, 'Bose SoundLink Revolve+', 299.00, 10, 'Manchester', 'England', '2023-05-05'),  
(20, 'Sony WH-CH710N Wireless Headphones', 198.00, 15, 'Bangalore', 'India', '2023-05-06');
```

Queries

❖ SELECT Statements

1. `SELECT * FROM products;`
2. `SELECT ProductID, ProductName, ProductPrice FROM products;`
3. `SELECT * FROM products WHERE ProductPrice > 1000;`
4. `SELECT ProductName, ShippingCity FROM products WHERE ShippingCountry = 'USA';`
5. `SELECT ProductName, AvailableQTY, ShippingDate FROM products WHERE ShippingCity = 'Mumbai' AND AvailableQTY > 20;`
6. `SELECT DISTINCT ShippingCity FROM products;`
7. `SELECT ProductID, ProductName, ProductPrice FROM products ORDER BY ProductPrice DESC;`
8. `SELECT ProductName, ShippingCountry FROM products WHERE ProductName LIKE '%iPhone%';`

❖ WHERE Clause

1. `SELECT * FROM products WHERE ProductID = 1;`
2. `SELECT * FROM products WHERE ProductName LIKE '%Samsung%';`
3. `SELECT * FROM products WHERE ProductPrice < 500;`
4. `SELECT * FROM products WHERE AvailableQTY >= 50;`
5. `SELECT * FROM products WHERE ShippingCity = 'Chicago';`
6. `SELECT * FROM products WHERE ShippingCountry <> 'USA';`
7. `SELECT * FROM products WHERE ShippingDate BETWEEN '2023-04-20' AND '2023-04-30';`
8. `SELECT * FROM products WHERE ProductPrice > 1000 AND AvailableQTY < 50;`
9. `SELECT * FROM products WHERE ProductName LIKE 'Apple%' AND ShippingCountry = 'USA';`
10. `SELECT * FROM products WHERE ShippingCity IN ('Los Angeles', 'New York City', 'Chicago');`
11. `SELECT * FROM products WHERE ShippingCity NOT IN ('Los Angeles', 'New York City', 'Chicago');`
12. `SELECT * FROM products WHERE ProductPrice = 1499.99 OR ProductPrice = 299.99;`
13. `SELECT * FROM products WHERE ProductName LIKE '%Samsung%' OR ProductName LIKE '%Sony%';`
14. `SELECT * FROM products WHERE ProductPrice NOT BETWEEN 200 AND 1000;`
15. `SELECT * FROM products WHERE ShippingCountry = 'India' AND ShippingCity <> 'Mumbai';`
16. `SELECT * FROM products WHERE ShippingDate <= CURDATE();`
17. `SELECT * FROM products WHERE ProductName IS NULL;`
18. `SELECT * FROM products WHERE ProductName IS NOT NULL;`
19. `SELECT * FROM products WHERE ProductPrice IS NULL OR ProductPrice < 100;`
20. `SELECT * FROM products WHERE ProductPrice IS NOT NULL AND ProductPrice >= 500;`
21. `SELECT * FROM products WHERE ShippingDate BETWEEN '2023-01-01' AND '2023-03-31';`
22. `SELECT * FROM products WHERE ProductName LIKE 'A%Z';`
23. `SELECT * FROM products WHERE ProductID <> 5;`
24. `SELECT * FROM products WHERE ShippingCity NOT IN ('New York City', 'Los Angeles');`
25. `SELECT * FROM products WHERE ProductPrice > 1000 OR ProductID < 10;`
26. `SELECT * FROM products WHERE ShippingCountry = 'USA' AND ShippingCity <> 'Chicago';`
27. `SELECT * FROM products WHERE ProductPrice > 500 AND ProductPrice < 1000;`

28. SELECT * FROM products WHERE ProductName LIKE '%Smartphone%' AND ProductPrice >= 500;
29. SELECT * FROM products WHERE ShippingDate < '2023-01-01' OR ShippingDate > '2023-12-31';
30. SELECT * FROM products WHERE ProductID % 2 = 0;
31. SELECT * FROM products WHERE ProductID % 2 <> 1;
32. SELECT * FROM products WHERE ProductPrice % 100 = 0;
33. SELECT * FROM products WHERE ShippingCountry IN ('Canada', 'Mexico');
34. SELECT * FROM products WHERE ShippingCountry NOT IN ('USA', 'Canada', 'Mexico');
35. SELECT * FROM products WHERE ProductName IN ('iPhone', 'Samsung Galaxy');
36. SELECT * FROM products WHERE ProductName <> 'iPad';
37. SELECT * FROM products WHERE ShippingCity LIKE 'New%';
38. SELECT * FROM products WHERE ShippingCity LIKE '%York City';
39. SELECT * FROM products WHERE ShippingCity LIKE '%Los%';
40. SELECT * FROM products WHERE CHAR_LENGTH(ProductName) = 10;
41. SELECT * FROM products WHERE ProductName IS NOT NULL;
42. SELECT * FROM products WHERE ProductPrice IS NULL;
43. SELECT * FROM products WHERE ProductID BETWEEN 1 AND 100 AND ProductID <> 50;
44. SELECT * FROM products WHERE ShippingDate NOT BETWEEN '2023-04-01' AND '2023-04-15';
45. SELECT * FROM products WHERE ShippingCity = 'Chicago' AND ShippingState = 'IL';
46. SELECT * FROM products WHERE ShippingPostalCode LIKE '9%';
47. SELECT * FROM products WHERE ShippingPostalCode LIKE '%123';
48. SELECT * FROM products WHERE ShippingPostalCode LIKE '%456%';
49. SELECT * FROM products WHERE ProductName > 'M';
50. SELECT * FROM products WHERE ProductName < 'N';

❖ ORDER BY

➤ Questions :-

1. "Order Products by ProductName in Ascending Order"
2. "Order Products by ProductPrice in Descending Order"
3. "Order Products by ShippingDate in Ascending Order"
4. "Order Products by AvailableQTY in Descending Order"
5. "Order Products by ShippingCountry in Ascending Order and ShippingCity in Descending Order"
6. "Order Products by ProductPrice in Ascending Order with Limit of 5"
7. "Order Products by ProductName in Descending Order with Offset of 10"
8. "Select ProductName and ShippingDate from Products Ordered by ShippingDate in Ascending Order"
9. "Select ProductID, ProductName, and AvailableQTY from Products Ordered by AvailableQTY in Descending Order"
10. "Select ProductName and ShippingCountry from Products Ordered by ShippingCountry in Ascending Order and ShippingCity in Descending Order"

➤ Answers :-

1. `SELECT * FROM products ORDER BY ProductName ASC;`
2. `SELECT * FROM products ORDER BY ProductPrice DESC;`
3. `SELECT * FROM products ORDER BY ShippingDate ASC;`
4. `SELECT * FROM products ORDER BY AvailableQTY DESC;`
5. `SELECT * FROM products ORDER BY ShippingCountry ASC, ShippingCity DESC;`
6. `SELECT * FROM products ORDER BY ProductPrice ASC LIMIT 5;`
7. `SELECT * FROM products ORDER BY ProductName DESC OFFSET 10;`
8. `SELECT ProductName, ShippingDate FROM products ORDER BY ShippingDate ASC;`
9. `SELECT ProductID, ProductName, AvailableQTY FROM products ORDER BY AvailableQTY DESC;`
10. `SELECT ProductName, ShippingCountry FROM products ORDER BY ShippingCountry ASC, ShippingCity DESC;`

❖ NULL Values

➤ Questions :-

1. "Insert New Product into products Table"
2. "Update ProductPrice to NULL for ProductID 1"
3. "Select Products with NULL ProductPrice"
4. "Select Products with NULL ShippingCity"
5. "Select Products with Not NULL ShippingCountry"
6. "Select Average ProductPrice for Products with NULL ShippingCity"
7. "Select Count of Products with NULL ProductPrice"
8. "Select Maximum ShippingDate for Products with NULL ShippingCountry"
9. "Select Minimum AvailableQTY for Products with NULL ProductPrice"
10. "Select Sum of AvailableQTY for Products with NULL ShippingCity"

➤ Answers :-

1. INSERT INTO products (ProductID, ProductName, ProductPrice, AvailableQTY, ShippingCity, ShippingCountry, ShippingDate) VALUES (21, 'Product Name', NULL, 10, 'City', 'Country', '2023-05-07');
2. UPDATE products SET ProductPrice = NULL WHERE ProductID = 1;
3. SELECT * FROM products WHERE ProductPrice IS NULL;
4. SELECT * FROM products WHERE ShippingCity IS NULL;
5. SELECT * FROM products WHERE ShippingCountry IS NOT NULL;
6. SELECT AVG(ProductPrice) FROM products WHERE ShippingCity IS NULL;
7. SELECT COUNT(*) FROM products WHERE ProductPrice IS NULL;
8. SELECT MAX(ShippingDate) FROM products WHERE ShippingCountry IS NULL;
9. SELECT MIN(AvailableQTY) FROM products WHERE ProductPrice IS NULL;
10. SELECT SUM(AvailableQTY) FROM products WHERE ShippingCity IS NULL;

❖ UPDATE

➤ Question :-

1. "Update ProductPrice for ProductID 1"
2. "Update ShippingCity and ShippingCountry for ProductID 2"
3. "Update AvailableQTY by Multiplying with 1.1"
4. "Update ProductName for Products containing 'Google'"
5. "Update ShippingDate for ProductID 3"
6. "Update ProductName, ProductPrice, and AvailableQTY for ProductID 4"
7. "Update ShippingCity for Products in USA with ProductPrice > 1000.00"
8. "Update AvailableQTY by Subtracting 10 for ProductID 5"
9. "Update ShippingCountry for ProductIDs 6, 7, and 8"
10. "Update ProductPrice for all Products"

➤ Answers :-

1. UPDATE products SET ProductPrice = 1199.99 WHERE ProductID = 1;
2. UPDATE products SET ShippingCity = 'Los Angeles', ShippingCountry = 'USA' WHERE ProductID = 2;
3. UPDATE products SET AvailableQTY = AvailableQTY * 1.1;
4. UPDATE products SET ProductName = REPLACE(ProductName, 'Google', 'Google Pixel') WHERE ProductName LIKE '%Google%';
5. UPDATE products SET ShippingDate = '2023-05-08' WHERE ProductID = 3;
6. UPDATE products SET ProductName = 'New Product Name', ProductPrice = 99.99, AvailableQTY = 5 WHERE ProductID = 4;
7. UPDATE products SET ShippingCity = 'New York City' WHERE ShippingCountry = 'USA' AND ProductPrice > 1000.00;
8. UPDATE products SET AvailableQTY = AvailableQTY - 10 WHERE ProductID = 5;
9. UPDATE products SET ShippingCountry = 'Canada' WHERE ProductID IN (6, 7, 8);
10. UPDATE products SET ProductPrice = 1099.00;

❖ DELETE

➤ Questions :-

1. "Delete Product with ProductID 1 from products Table"
2. "Delete Products with ProductPrice Greater Than 1000 from products Table"
3. "Delete Products with AvailableQTY Less Than or Equal to 20 from products Table"
4. "Delete Products with ShippingCity 'Mumbai' and ShippingCountry 'India' from products Table"
5. "Delete Products with ShippingDate Earlier Than '2023-04-30' from products Table"
6. "Delete Products with ProductName 'Nike Air Jordan 1' from products Table"
7. "Delete Products with ProductName 'Apple iPhone 13' and ShippingCountry 'USA' from products Table"
8. "Delete Products with ProductName 'Google Pixel 6' and AvailableQTY Greater Than 50 from products Table"
9. "Delete Products with ShippingCity 'Chicago' from products Table"
10. "Delete Products with ShippingCountry 'South Africa' from products Table"

➤ Answers :-

1. DELETE FROM products WHERE ProductID = 1;
2. DELETE FROM products WHERE ProductPrice > 1000;
3. DELETE FROM products WHERE AvailableQTY <= 20;
4. DELETE FROM products WHERE ShippingCity = 'Mumbai' AND ShippingCountry = 'India';
5. DELETE FROM products WHERE ShippingDate < '2023-04-30';
6. DELETE FROM products WHERE ProductName = 'Nike Air Jordan 1';
7. DELETE FROM products WHERE ProductName = 'Apple iPhone 13' AND ShippingCountry = 'USA';
8. DELETE FROM products WHERE ProductName = 'Google Pixel 6' AND AvailableQTY > 50;
9. DELETE FROM products WHERE ShippingCity = 'Chicago';
10. DELETE FROM products WHERE ShippingCountry = 'South Africa';

❖ LIMIT

➤ Questions :-

1. "Select First 5 Rows from products Table"
2. "Select First 10 Rows from products Table"
3. "Select First 3 Rows from products Table Ordered by ProductPrice in Ascending Order"
4. "Select First 7 Rows from products Table Ordered by ProductName in Descending Order"
5. "Select 10 Rows from products Table with an Offset of 10"
6. "Select 5 Rows from products Table with an Offset of 5"
7. "Select 5 Rows from products Table with an Offset of 2"
8. "Select 3 Rows from products Table with an Offset of 1"
9. "Select 4 Rows from products Table Ordered by ProductPrice in Descending Order with an Offset of 1"
10. "Select 6 Rows from products Table Ordered by ShippingDate in Ascending Order with an Offset of 2"

➤ Answers :-

1. `SELECT * FROM products LIMIT 5;`
2. `SELECT * FROM products LIMIT 10;`
3. `SELECT * FROM products ORDER BY ProductPrice ASC LIMIT 3;`
4. `SELECT * FROM products ORDER BY ProductName DESC LIMIT 7;`
5. `SELECT * FROM products LIMIT 10 OFFSET 10;`
6. `SELECT * FROM products LIMIT 5 OFFSET 5;`
7. `SELECT * FROM products LIMIT 5 OFFSET 2;`
8. `SELECT * FROM products LIMIT 3 OFFSET 1;`
9. `SELECT * FROM products ORDER BY ProductPrice DESC LIMIT 4 OFFSET 1;`
10. `SELECT * FROM products ORDER BY ShippingDate ASC LIMIT 6 OFFSET 2;`

❖ MIN and MAX

➤ Questions :-

1. "Select Minimum ProductPrice from products Table"
2. "Select Maximum ProductPrice from products Table"
3. "Select Minimum ShippingDate from products Table"
4. "Select Maximum ShippingDate from products Table"
5. "Select Minimum AvailableQTY from products Table"
6. "Select Maximum AvailableQTY from products Table"
7. "Select Minimum ProductID from products Table"
8. "Select Maximum ProductID from products Table"
9. "Select Minimum ProductPrice from products Table where ShippingCountry is 'USA'"
10. "Select Maximum ProductPrice from products Table where ShippingCountry is 'India'"

➤ Answers :-

1. SELECT MIN(ProductPrice) FROM products;
2. SELECT MAX(ProductPrice) FROM products;
3. SELECT MIN(ShippingDate) FROM products;
4. SELECT MAX(ShippingDate) FROM products;
5. SELECT MIN(AvailableQTY) FROM products;
6. SELECT MAX(AvailableQTY) FROM products;
7. SELECT MIN(ProductID) FROM products;
8. SELECT MAX(ProductID) FROM products;
9. SELECT MIN(ProductPrice) FROM products WHERE ShippingCountry = 'USA';
10. SELECT MAX(ProductPrice) FROM products WHERE ShippingCountry = 'India';

❖ COUNT, AVG and SUM

➤ Question :-

1. "Select Count of Rows in products Table"
2. "Select Count of Rows in products Table where ProductPrice is greater than 1000"
3. "Select Count of Rows in products Table where AvailableQTY is less than 50"
4. "Select Average of ProductPrice from products Table"
5. "Select Average of ProductPrice from products Table where ShippingCountry is 'USA'"
6. "Select Average of AvailableQTY from products Table"
7. "Select Sum of ProductPrice from products Table"
8. "Select Sum of ProductPrice from products Table where ShippingCountry is 'India'"
9. "Select Sum of AvailableQTY from products Table"
10. "Select Sum of AvailableQTY from products Table where ProductPrice is greater than 1000"

➤ Answers :-

1. SELECT COUNT(*) FROM products;
2. SELECT COUNT(*) FROM products WHERE ProductPrice > 1000;
3. SELECT COUNT(*) FROM products WHERE AvailableQTY < 50;
4. SELECT AVG(ProductPrice) FROM products;
5. SELECT AVG(ProductPrice) FROM products WHERE ShippingCountry = 'USA';
6. SELECT AVG(AvailableQTY) FROM products;
7. SELECT SUM(ProductPrice) FROM products;
8. SELECT SUM(ProductPrice) FROM products WHERE ShippingCountry = 'India';
9. SELECT SUM(AvailableQTY) FROM products;
10. SELECT SUM(AvailableQTY) FROM products WHERE ProductPrice > 1000;

❖ LIKE Operator

➤ Question :-

1. "Select Products from products Table where ProductName Starts with 'Apple'"
2. "Select Products from products Table where ProductName Ends with 'Pro'"
3. "Select Products from products Table where ProductName Contains 'Galaxy'"
4. "Select Products from products Table where ShippingCity is 'Mumbai'"
5. "Select Products from products Table where ShippingCountry is 'USA'"
6. "Select Products from products Table where ProductName Starts with 'Sony' and Ends with 'TV'"
7. "Select Products from products Table where ProductPrice Matches Pattern '1__._'"
8. "Select Products from products Table where ProductName has 5 Characters"
9. "Select Products from products Table where ShippingCity Contains 'New'"
10. "Select Products from products Table where ProductName is 'Samsung Galaxy S21' or 'Samsung QLED TV'"

➤ Answers :-

1. SELECT * FROM products WHERE ProductName LIKE 'Apple%';
2. SELECT * FROM products WHERE ProductName LIKE '%Pro';
3. SELECT * FROM products WHERE ProductName LIKE '%Galaxy%';
4. SELECT * FROM products WHERE ShippingCity LIKE 'Mumbai';
5. SELECT * FROM products WHERE ShippingCountry LIKE 'USA';
6. SELECT * FROM products WHERE ProductName LIKE 'Sony%TV';
7. SELECT * FROM products WHERE ProductPrice LIKE '1__._';
8. SELECT * FROM products WHERE ProductName LIKE '_____';
9. SELECT * FROM products WHERE ShippingCity LIKE '%New%';
10. SELECT * FROM products WHERE ProductName LIKE 'Samsung Galaxy S21' OR ProductName LIKE 'Samsung QLED TV';

❖ IN Operator

➤ Question :-

1. "Select Products from products Table where ProductID is 1, 2, or 3"
2. "Select Products from products Table where ShippingCountry is 'USA' or 'India'"
3. "Select Products from products Table where ProductPrice is 299.99 or 349.99"
4. "Select Products from products Table where AvailableQTY is 50 or 100"
5. "Select Products from products Table where ShippingCity is 'Chicago' or 'London'"
6. "Select Products from products Table where ProductName is 'Apple iPhone 13' or 'Samsung Galaxy S21'"
7. "Select Products from products Table where ShippingDate is '2023-04-17' or '2023-04-18'"
8. "Select Products from products Table where ShippingCountry is not 'USA' or 'India'"
9. "Select Products from products Table where AvailableQTY is 10, 20, or 30"
10. "Select Products from products Table where ProductName is not 'Sony PlayStation 5'"

➤ Answers :-

1. `SELECT * FROM products WHERE ProductID IN (1, 2, 3);`
2. `SELECT * FROM products WHERE ShippingCountry IN ('USA', 'India');`
3. `SELECT * FROM products WHERE ProductPrice IN (299.99, 349.99);`
4. `SELECT * FROM products WHERE AvailableQTY IN (50, 100);`
5. `SELECT * FROM products WHERE ShippingCity IN ('Chicago', 'London');`
6. `SELECT * FROM products WHERE ProductName IN ('Apple iPhone 13', 'Samsung Galaxy S21');`
7. `SELECT * FROM products WHERE ShippingDate IN ('2023-04-17', '2023-04-18');`
8. `SELECT * FROM products WHERE ShippingCountry NOT IN ('USA', 'India');`
9. `SELECT * FROM products WHERE AvailableQTY IN (10, 20, 30);`
10. `SELECT * FROM products WHERE ProductName NOT IN ('Sony PlayStation 5');`

❖ BETWEEN Operator

➤ Question :-

1. "Select products from the products table where ProductPrice is between 200 and 500."
2. "Select products from the products table where AvailableQTY is between 30 and 50."
3. "Select products from the products table where ShippingDate is between '2023-04-20' and '2023-04-30'."
4. "Select products from the products table where ProductID is between 5 and 10."
5. "Select products from the products table where ShippingCountry is between 'India' and 'South Africa'."
6. "Select products from the products table where ProductPrice is between 1000 and 1500 and AvailableQTY is greater than 20."
7. "Select products from the products table where ShippingCity is between 'New York City' and 'Chicago'."
8. "Select products from the products table where ProductName is between 'Apple%' and '%Pro'."
9. "Select products from the products table where ShippingDate is between '2023-04-25' and '2023-05-05', ordered by ProductPrice in descending order."
10. "Select products from the products table where ShippingCountry is not between 'USA' and 'USA'."

➤ Answers :-

1. SELECT * FROM products WHERE ProductPrice BETWEEN 200 AND 500;
2. SELECT * FROM products WHERE AvailableQTY BETWEEN 30 AND 50;
3. SELECT * FROM products WHERE ShippingDate BETWEEN '2023-04-20' AND '2023-04-30';
4. SELECT * FROM products WHERE ProductID BETWEEN 5 AND 10;
5. SELECT * FROM products WHERE ShippingCountry BETWEEN 'India' AND 'South Africa';
6. SELECT * FROM products WHERE ProductPrice BETWEEN 1000 AND 1500 AND AvailableQTY > 20;
7. SELECT * FROM products WHERE ShippingCity BETWEEN 'New York City' AND 'Chicago';
8. SELECT * FROM products WHERE ProductName BETWEEN 'Apple%' AND '%Pro';
9. SELECT * FROM products WHERE ShippingDate BETWEEN '2023-04-25' AND '2023-05-05' ORDER BY ProductPrice DESC;
10. SELECT * FROM products WHERE ShippingCountry NOT BETWEEN 'USA' AND 'USA';