Name : Moneeb Ahmed Al-Alawneh.

Q1 : Create a Table: named Sales that will store information about sales transactions :

```
CREATE TABLE Sales (
   productName VARCHAR2(200) NOT NULL,
   Category VARCHAR2(200),
   QuantitySold INT NOT NULL,
   PricePerUnit INT NOT NULL,
   SaleDate DATE
   );
```

Q2 : Insert Sample Data :

```
INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Laptop', 'Electronics', 2, 1000.00, TO_DATE('2024-01-05', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Phone', 'Electronics', 5, 500.00, TO_DATE('2024-01-10', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Headphones', 'Accessories', 10, 50.00, TO_DATE('2024-01-15', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Desk', 'Furniture', 1, 200.00, TO_DATE('2024-01-20', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Chair', 'Furniture', 4, 150.00, TO_DATE('2024-01-25', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Smart TV', 'Electronics', 3, 700.00, TO_DATE('2024-02-01', 'YYYY-MM-DD'));
```

```
INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Tablet', 'Electronics', 6, 300.00, TO_DATE('2024-02-05', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Gaming Console', 'Electronics', 2, 400.00, TO_DATE('2024-02-10', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Bluetooth Speaker', 'Accessories', 8, 75.00, TO_DATE('2024-02-15', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Smartwatch', 'Electronics', 5, 200.00, TO_DATE('2024-02-20', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Camera', 'Electronics', 3, 600.00, TO_DATE('2024-02-25', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Wireless Mouse', 'Accessories', 12, 25.00, TO_DATE('2024-03-01', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Keyboard', 'Accessories', 10, 40.00, TO_DATE('2024-03-05', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Monitor', 'Electronics', 4, 150.00, TO_DATE('2024-03-10', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Router', 'Electronics', 7, 120.00, TO_DATE('2024-03-15', 'YYYY-MM-DD'));
```

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('External Hard Drive', 'Accessories', 5, 100.00, TO_DATE('2024-03-20', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Power Bank', 'Accessories', 15, 30.00, TO_DATE('2024-03-25', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Smart Lamp', 'Furniture', 3, 80.00, TO_DATE('2024-03-30', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Fitness Tracker', 'Accessories', 8, 90.00, TO_DATE('2024-04-01', 'YYYY-MM-DD'));

INSERT INTO Sales (ProductName, Category, QuantitySold, PricePerUnit, SaleDate) VALUES ('Drone', 'Electronics', 2, 1000.00, TO_DATE('2024-04-05', 'YYYY-MM-DD'));

Table after Insert :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24
2	Phone	Electronics	5	500	10-JAN-24
3	Headphones	Accessories	10	50	15-JAN-24
4	Desk	Furniture	1	200	20-JAN-24
5	Chair	Furniture	4	150	25-JAN-24
6	Smart TV	Electronics	3	700	01-FEB-24
7	Tablet	Electronics	6	300	05-FEB-24
8	Gaming Console	Electronics	2	400	10-FEB-24
9	Bluetooth Speaker	Accessories	8	75	15-FEB-24
10	Smartwatch	Electronics	5	200	20-FEB-24
11	Camera	Electronics	3	600	25-FEB-24
12	Wireless Mouse	Accessories	12	25	01-MAR-24
13	Keyboard	Accessories	10	40	05-MAR-24
14	Monitor	Electronics	4	150	10-MAR-24
15	Router	Electronics	7	120	15-MAR-24
16	External Hard Drive	Accessories	5	100	20-MAR-24
17	Power Bank	Accessories	15	30	25-MAR-24
18	Smart Lamp	Furniture	3	80	30-MAR-24
19	Fitness Tracker	Accessories	8	90	01-APR-24
20	Drone	Electronics	2	1000	05-APR-24

Q3 : Apply the following query statements :

- Retrieve all sales transactions where the product category is "Electronics" :

Code :

```
Select * From Sales

where Category = 'Electronics';
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24
2	Phone	Electronics	5	500	10-JAN-24
3	Smart TV	Electronics	3	700	01-FEB-24
4	Tablet	Electronics	6	300	05-FEB-24
5	Gaming Console	Electronics	2	400	10-FEB-24
6	Smartwatch	Electronics	5	200	20-FEB-24
7	Camera	Electronics	3	600	25-FEB-24
8	Monitor	Electronics	4	150	10-MAR-24
9	Router	Electronics	7	120	15-MAR-24
10	Drone	Electronics	2	1000	05-APR-24

- Retrieve all sales transactions that occurred between January 10, 2024, and January 25, 2024 :

Code :

```
SELECT * FROM Sales

WHERE SaleDate BETWEEN TO_DATE('2024-01-10', 'YYYY-MM-DD') AND TO_DATE('2024-01-25', 'YYYY-MM-DD');
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Phone	Electronics	5	500	10-JAN-24
2	Headphones	Accessories	10	50	15-JAN-24
3	Desk	Furniture	1	200	20-JAN-24
4	Chair	Furniture	4	150	25-JAN-24

- Retrieve all sales where the price per unit is greater than $100 :

Code :

```
SELECT * FROM Sales

WHERE PricePerUnit > 100.00;
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24
2	Phone	Electronics	5	500	10-JAN-24
3	Desk	Furniture	1	200	20-JAN-24
4	Chair	Furniture	4	150	25-JAN-24
5	Smart TV	Electronics	3	700	01-FEB-24
6	Tablet	Electronics	6	300	05-FEB-24
7	Gaming Console	Electronics	2	400	10-FEB-24
8	Smartwatch	Electronics	5	200	20-FEB-24
9	Camera	Electronics	3	600	25-FEB-24
10	Monitor	Electronics	4	150	10-MAR-24
11	Router	Electronics	7	120	15-MAR-24
12	Drone	Electronics	2	1000	05-APR-24

- Retrieve all sales where the quantity sold is less than or equal to 3 :

Code :

```
SELECT * FROM Sales

WHERE QuantitySold <= 3;
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24
2	Desk	Furniture	1	200	20-JAN-24
3	Smart TV	Electronics	3	700	01-FEB-24
4	Gaming Console	Electronics	2	400	10-FEB-24
5	Camera	Electronics	3	600	25-FEB-24
6	Smart Lamp	Furniture	3	80	30-MAR-24
7	Drone	Electronics	2	1000	05-APR-24

- Retrieve all sales of "Furniture" products where the quantity sold is greater than 2 :

Code :

```
SELECT * FROM Sales

WHERE Category = 'Furniture' AND QuantitySold > 2;
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Chair	Furniture	4	150	25-JAN-24
2	Smart Lamp	Furniture	3	80	30-MAR-24

- Retrieve all sales where the product name starts with the letter "L" (using pattern matching with LIKE) :

Code :

```
SELECT * FROM Sales

WHERE ProductName LIKE 'L%';
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24

- Retrieve all sales where the category is not null :

Code :

```
SELECT * FROM Sales

WHERE Category IS NOT NULL;
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24
2	Phone	Electronics	5	500	10-JAN-24
3	Headphones	Accessories	10	50	15-JAN-24
4	Desk	Furniture	1	200	20-JAN-24
5	Chair	Furniture	4	150	25-JAN-24
6	Smart TV	Electronics	3	700	01-FEB-24
7	Tablet	Electronics	6	300	05-FEB-24
8	Gaming Console	Electronics	2	400	10-FEB-24
9	Bluetooth Speaker	Accessories	8	75	15-FEB-24
10	Smartwatch	Electronics	5	200	20-FEB-24
11	Camera	Electronics	3	600	25-FEB-24
12	Wireless Mouse	Accessories	12	25	01-MAR-24
13	Keyboard	Accessories	10	40	05-MAR-24
14	Monitor	Electronics	4	150	10-MAR-24
15	Router	Electronics	7	120	15-MAR-24
16	External Hard Drive	Accessories	5	100	20-MAR-24
17	Power Bank	Accessories	15	30	25-MAR-24
18	Smart Lamp	Furniture	3	80	30-MAR-24
19	Fitness Tracker	Accessories	8	90	01-APR-24
20	Drone	Electronics	2	1000	05-APR-24

- Retrieve all sales that occurred on January 20, 2024 :

Code :

```
SELECT * FROM Sales

WHERE SaleDate = TO_DATE('2024-01-20', 'YYYY-MM-DD');
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Desk	Furniture	1	200	20-JAN-24

- Retrieve all sales where the price per unit is between $50 and $500 :

Code :

```
SELECT * FROM Sales

WHERE PricePerUnit BETWEEN 50.00 AND 500.00;
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Phone	Electronics	5	500	10-JAN-24
2	Headphones	Accessories	10	50	15-JAN-24
3	Desk	Furniture	1	200	20-JAN-24
4	Chair	Furniture	4	150	25-JAN-24
5	Tablet	Electronics	6	300	05-FEB-24
6	Gaming Console	Electronics	2	400	10-FEB-24
7	Bluetooth Speaker	Accessories	8	75	15-FEB-24
8	Smartwatch	Electronics	5	200	20-FEB-24
9	Monitor	Electronics	4	150	10-MAR-24
10	Router	Electronics	7	120	15-MAR-24
11	External Hard Drive	Accessories	5	100	20-MAR-24
12	Smart Lamp	Furniture	3	80	30-MAR-24
13	Fitness Tracker	Accessories	8	90	01-APR-24

- Retrieve all sales where either the category is "Electronics" or the quantity sold is greater than 4 :

Code :

```
SELECT * FROM Sales

WHERE Category = 'Electronics' OR QuantitySold > 4;
```

Result :

	PRODUCTNAME	CATEGORY	QUANTITYSOLD	PRICEPERUNIT	SALEDATE
1	Laptop	Electronics	2	1000	05-JAN-24
2	Phone	Electronics	5	500	10-JAN-24
3	Headphones	Accessories	10	50	15-JAN-24
4	Smart TV	Electronics	3	700	01-FEB-24
5	Tablet	Electronics	6	300	05-FEB-24
6	Gaming Console	Electronics	2	400	10-FEB-24
7	Bluetooth Speaker	Accessories	8	75	15-FEB-24
8	Smartwatch	Electronics	5	200	20-FEB-24
9	Camera	Electronics	3	600	25-FEB-24
10	Wireless Mouse	Accessories	12	25	01-MAR-24
11	Keyboard	Accessories	10	40	05-MAR-24
12	Monitor	Electronics	4	150	10-MAR-24
13	Router	Electronics	7	120	15-MAR-24
14	External Hard Drive	Accessories	5	100	20-MAR-24
15	Power Bank	Accessories	15	30	25-MAR-24
16	Fitness Tracker	Accessories	8	90	01-APR-24
17	Drone	Electronics	2	1000	05-APR-24

- Find the total revenue generated for each product category, but only for categories where the total revenue is greater than $1000 :

Code :

```
SELECT Category, SUM(QuantitySold * PricePerUnit) AS TotalRevenue

FROM Sales

GROUP BY Category

HAVING SUM(QuantitySold * PricePerUnit) > 1000;
```

Result :

	CATEGORY	TOTALREVENUE
1	Electronics	15440
2	Accessories	3470
3	Furniture	1040

- For each product, find the total quantity sold, but only for products where more than 3 units have been sold :

Code :

```
SELECT ProductName, SUM(QuantitySold) AS TotalQuantitySold

FROM Sales

GROUP BY ProductName

HAVING SUM(QuantitySold) > 3;
```

Result :

	PRODUCTNAME	TOTALQUANTITYSOLD
1	Phone	5
2	Headphones	10
3	Chair	4
4	Tablet	6
5	Bluetooth Speaker	8
6	Smartwatch	5
7	Wireless Mouse	12
8	Keyboard	10
9	Monitor	4
10	Router	7
11	External Hard Drive	5
12	Power Bank	15
13	Fitness Tracker	8

- Find the average price per unit for each category, but only for categories where the average price is greater than $200 :

Code :

```
SELECT Category, AVG(PricePerUnit) AS AveragePrice

FROM Sales

GROUP BY Category

HAVING AVG(PricePerUnit) > 200;
```

Result :

	CATEGORY	AVERAGEPRICE
1	Electronics	497

- Retrieve the maximum quantity sold for each product category, but only for categories that have sold at least 10 units in total :

Code :

```
SELECT Category, MAX(QuantitySold) AS MaxQuantitySold

FROM Sales

GROUP BY Category

HAVING SUM(QuantitySold) >= 10;
```

Result :

	CATEGORY	MAXQUANTITYSOLD
1	Electronics	7
2	Accessories	15

- Find the number of sales transactions for each product, but only include products that have had more than 2 sales transactions :

Code :

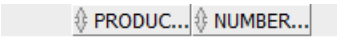
```
SELECT ProductName, COUNT(*) AS NumberOfTransactions

FROM Sales

GROUP BY ProductName

HAVING COUNT(*) > 2;
```

Result :



- Find the minimum price per unit for each product category, but only for categories that have sold more than 5 units :

Code :

```
SELECT Category, MIN(PricePerUnit) AS MinPricePerUnit

FROM Sales

GROUP BY Category

HAVING SUM(QuantitySold) > 5;
```

Result :

	CATEGORY	MINPRICEPERUNIT
1	Electronics	120
2	Accessories	25
3	Furniture	80

- Calculate the total quantity sold for each product, but only for products where the total revenue generated (QuantitySold * PricePerUnit) exceeds $500 :

Code :

```
SELECT ProductName, SUM(QuantitySold) AS TotalQuantitySold

FROM Sales

GROUP BY ProductName

HAVING SUM(QuantitySold * PricePerUnit) > 500;
```

Result :

	PRODUCTNAME	TOTALQUANTITYSOLD
1	Laptop	2
2	Phone	5
3	Chair	4
4	Smart TV	3
5	Tablet	6
6	Gaming Console	2
7	Bluetooth Speaker	8
8	Smartwatch	5
9	Camera	3
10	Monitor	4
11	Router	7
12	Fitness Tracker	8
13	Drone	2

- Retrieve the total number of sales transactions for each category, but only for categories that have more than 2 distinct products sold :

Code :

```
SELECT Category, COUNT(*) AS TotalSalesTransactions

FROM Sales

GROUP BY Category

HAVING COUNT(DISTINCT ProductName) > 2;
```

Result :

	CATEGORY	TOTALSALESTRANSACTIONS
1	Electronics	10
2	Accessories	7
3	Furniture	3

- Find the average quantity sold for each product, but only for products where the total quantity sold exceeds 8 units :

Code :

```
SELECT ProductName, AVG(QuantitySold) AS AverageQuantitySold

FROM Sales

GROUP BY ProductName

HAVING SUM(QuantitySold) > 8;
```

Result :

	PRODUCTNAME	AVERAGEQUANTITYSOLD
1	Headphones	10
2	Wireless Mouse	12
3	Keyboard	10
4	Power Bank	15

- For each category, retrieve the total number of products sold and the total revenue, but only for categories where the total number of products sold is greater than 6 :

Code :

```
SELECT Category, SUM(QuantitySold) AS TotalProductsSold, SUM(QuantitySold * PricePerUnit) AS
TotalRevenue

FROM Sales

GROUP BY Category

HAVING SUM(QuantitySold) > 6;
```

Result :

	CATEGORY	TOTALPRODUCTSSOLD	TOTALREVENUE
1	Electronics	39	15440
2	Accessories	68	3470
3	Furniture	8	1040