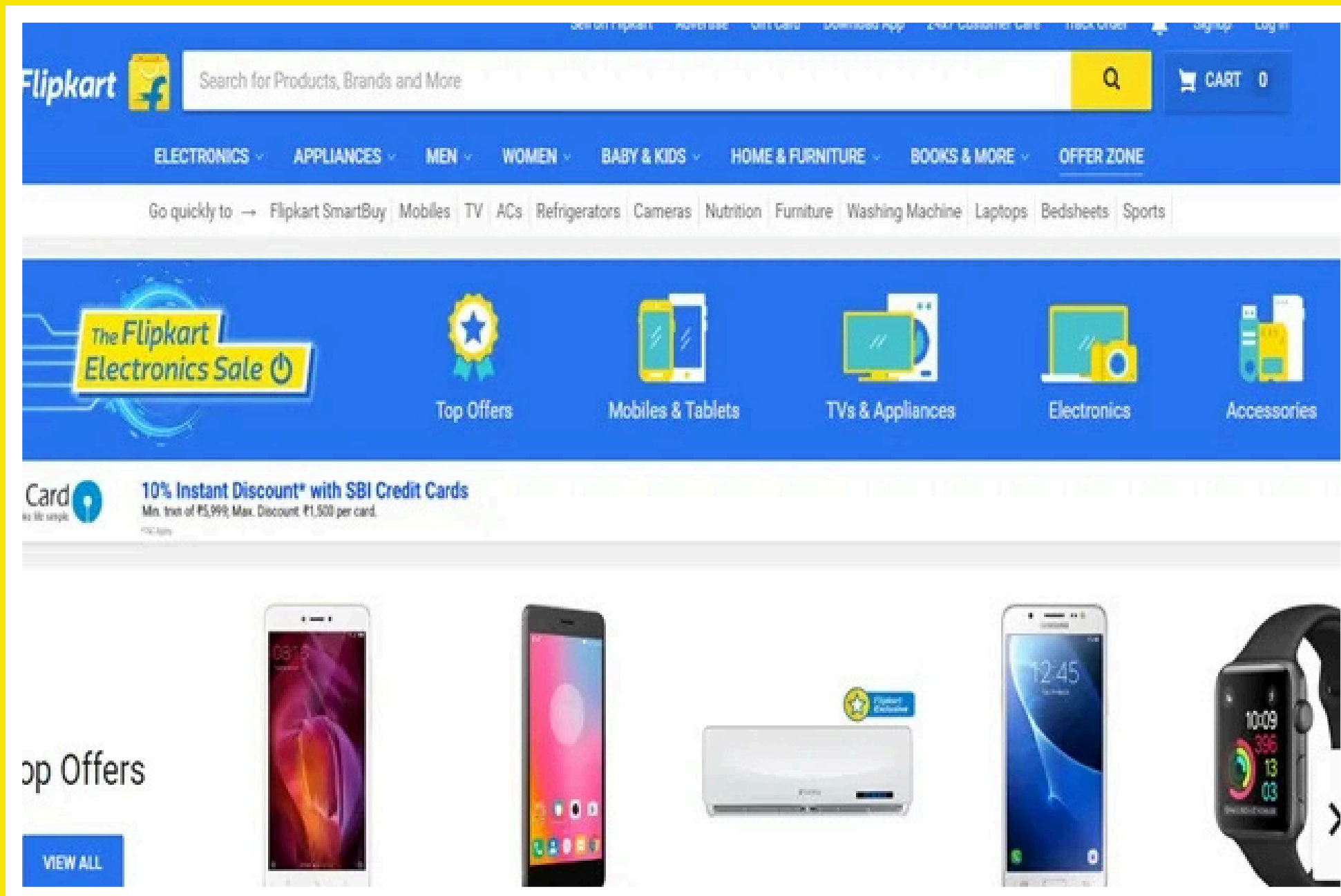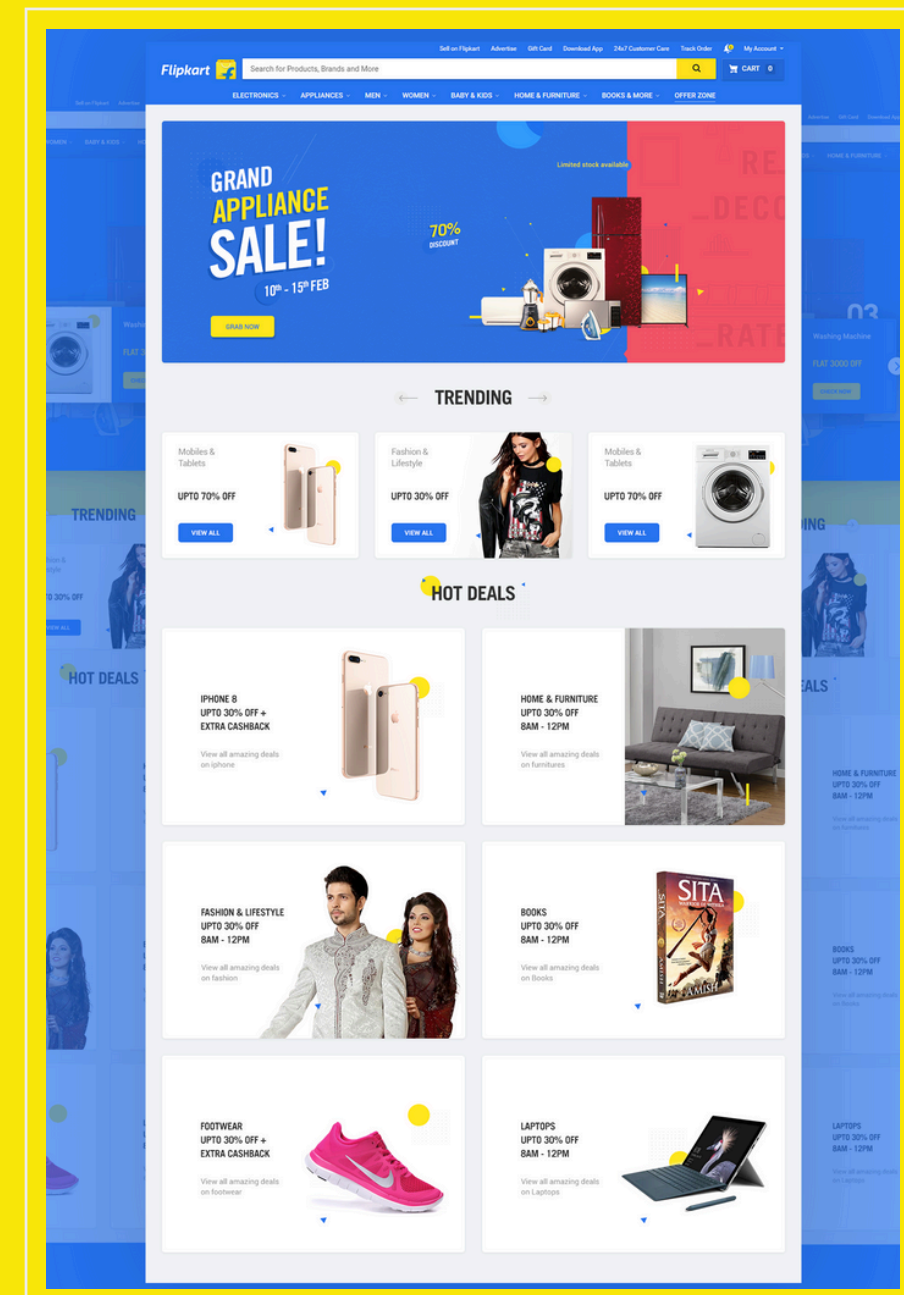# Flipkart

Naye India ke saath

SQL

MySQL®

SQL Project: Flipkart Sales Data Analysis

Flipkart Sales Insights and Query-Based Problem Solving

- **Sales Analysis: Extract insights from Flipkart sales data.**

- **Business Problem Solving: Identify top-selling products and customer trends.**

- **SQL Query Practice: Use filtering, aggregation, and joins effectively.**

- **Revenue Tracking: Measure revenue and customer spending.**

- **Decision Support: Provide data-driven insights for business optimization.**

Database: MySQL

TABLE NAME: APPLI

product_id	product_type_id	FTYPE	price
FLP0100	PTID100100	SOLAR	19999
FLP0001	PTID102	SOLAR	129999
FLP0002	PTID103	ELECTRIC	159900
FLP0003	PTID104	BATTERY	45999
FLP0004	PTID105	SOLAR	29990
FLP0005	PTID106	ELECTRIC	3499
FLP0006	PTID107	BATTERY	19999
FLP0007	PTID108	SOLAR	52990
FLP0008	PTID109	ELECTRIC	4999
FLP0009	PTID110	BATTERY	17999
FLP0010	PTID111	SOLAR	29990
FLP0011	PTID112	ELECTRIC	1999
FLP0012	PTID113	BATTERY	36999
FLP0013	PTID114	SOLAR	54990
FLP0014	PTID115	ELECTRIC	6999
FLP0015	PTID116	BATTERY	11999
FLP0016	PTID117	SOLAR	109990
FLP0017	PTID118	ELECTRIC	24999
FLP0018	PTID119	BATTERY	19999
FLP0019	PTID120	SOLAR	63990
FLP0020	PTID121	ELECTRIC	17999
FLP0021	PTID122	BATTERY	39999
FLP0022	PTID123	SOLAR	28490
FLP0023	PTID124	ELECTRIC	1799
FLP0024	PTID125	BATTERY	25999
FLP0025	PTID126	SOLAR	72990
FLP0026	PTID127	ELECTRIC	37990
FLP0027	PTID128	BATTERY	2999
FLP0028	PTID129	SOLAR	3799
FLP0029	PTID130	ELECTRIC	9999
FLP0030	PTID131	BATTERY	42990
FLP0031	PTID132	SOLAR	1499
FLP0032	PTID133	ELECTRIC	34999

TABLE NAME: ORDER_DETAILS

ORDER_DETAILS_ID	ORDER_ID	PRODUCT_ID	QUANTITY
101	ORD001	FLP0001	1
102	ORD002	FLP0002	1
103	ORD003	FLP0003	1
104	ORD004	FLP0004	1
105	ORD005	FLP0005	1
106	ORD006	FLP0006	1
107	ORD007	FLP0007	1
108	ORD008	FLP0008	1
109	ORD009	FLP0009	1
110	ORD010	FLP0010	1
111	ORD011	FLP0011	1
112	ORD012	FLP0012	1
113	ORD013	FLP0013	1
114	ORD014	FLP0014	1
115	ORD015	FLP0015	1
116	ORD016	FLP0016	1
117	ORD017	FLP0017	1
118	ORD018	FLP0018	1
119	ORD019	FLP0019	1
120	ORD020	FLP0020	1
121	ORD021	FLP0021	1
122	ORD022	FLP0022	1
123	ORD023	FLP0023	1
124	ORD024	FLP0024	1
125	ORD025	FLP0025	1
126	ORD026	FLP0026	1
127	ORD027	FLP0027	1
128	ORD028	FLP0028	1
129	ORD029	FLP0029	1
130	ORD030	FLP0030	1
131	ORD031	FLP0031	1
132	ORD032	FLP0032	1
133	ORD033	FLP0033	1
134	ORD034	FLP0034	1

TABLE NAME: ORDERS

ORDER_ID	ORDER_DATE	ETIME
ORD001	2025-08-15	14:27:31
ORD002	2025-01-02	09:53:18
ORD003	2025-11-29	21:06:45
ORD004	2025-04-10	16:12:03
ORD005	2025-07-23	03:39 03:39:
ORD006	2025-12-05	11:48:22
ORD007	2025-02-18	18:25:10
ORD008	2025-09-08	06:01:36
ORD009	2025-05-21	23:50:09
ORD010	2025-10-14	01:17:44
ORD011	2025-03-07	15:34:28
ORD012	2025-06-30	08:59:15
ORD013	2025-11-03	20:21:52
ORD014	2025-01-26	04:43:07
ORD015	2025-08-09	12:08:30
ORD016	2025-04-03	19:36:19
ORD017	2025-07-17	02:51:46
ORD018	2025-12-11	10:14:25
ORD019	2025-02-24	17:40:01
ORD020	2025-09-14	05:26:39
ORD021	2025-05-27	22:19:58
ORD022	2025-10-20	00:05:13
ORD023	2025-03-13	14:57:26
ORD024	2025-07-06	09:22:04
ORD025	2025-11-16	21:49:33
ORD026	2025-01-31	03:11:17
ORD027	2025-08-22	13:38:50
ORD028	2025-04-16	18:02:29
ORD029	2025-07-30	01:28:42
ORD030	2025-12-17	09:07:55
ORD031	2025-03-20	16:45:38
ORD032	2025-06-24	07:32:11
ORD033	2025-11-22	20:54:06
ORD034	2025-02-06	05:56:23

TABLE NAME: PRODUCT_TYPES

PRODUCT_TYPE_ID	FNAME	CATEGORY	FEATURES
PTID101	Samsung Galaxy S24 Ultra	Mobile Phones	200MP camera Snapdragon 8 Gen 3 5000mAh ...
PTID102	Apple iPhone 15 Pro Max	Mobile Phones	A17 Pro chip Titanium body 5x telephoto zoom
PTID103	Dell Inspiron 15 3520 Laptop	Laptops	12th Gen Intel i5 15 6 FHD display 8GB ...
PTID104	Sony WH 1000XM5 Headphones	Headphones	ANC 30 hour battery touch controls
PTID105	Mi Smart Band 8	Fitness Bands	1 62 AMOLED 16 day battery fitness ...
PTID106	OnePlus Nord CE 3 Lite	Mobile Phones	Snapdragon 695 108MP camera 5000mAh ba...
PTID107	HP Pavilion 14 Laptop	Laptops	Intel i7 512GB SSD 16GB RAM
PTID108	Adidas Men's Running Shoes	Footwear	Cloudfoam midsole breathable mesh rubber o...
PTID109	Realme Narzo 60 5G	Mobile Phones	Dimensity 8100 100W fast charging 64MP ca...
PTID110	Samsung 43 Crystal 4K TV	Televisions	4K UHD HDR10 Tizen OS
PTID111	boAt Rockerz 550 Headphones	Headphones	50mm drivers 20 hour playback Bluetooth ...
PTID112	Vivo V29 Pro 5G	Mobile Phones	50MP OIS camera 80W fast charging Dimensi...
PTID113	Lenovo IdeaPad Slim 5	Laptops	Ryzen 5 7530U 8GB RAM 512GB SSD
PTID114	Nike Mens Sports Shoes	Footwear	Breathable mesh cushioned sole lightweight
PTID115	JBL Flip 6 Bluetooth Speaker	Speakers	12 hour battery IP67 water resistance du...
PTID116	Asus ROG Strix G16 Gaming Laptop	Laptops	Intel i9 RTX 4060 16GB RAM
PTID117	Redmi Note 12 Pro 5G	Mobile Phones	200MP camera 120Hz AMOLED 67W charging
PTID118	Fossil Gen 6 Smartwatch	Smartwatches	Snapdragon Wear 4100 SpO2 Alexa built ...
PTID119	Sony Bravia 55 4K TV	Televisions	4K HDR Google TV Dolby Vision
PTID120	Samsung Galaxy Buds 2 Pro	Earbuds	ANC 360 Audio IPX7 water resistance
PTID121	Oppo Reno 11 Pro	Mobile Phones	Snapdragon 8 Gen 1 32MP selfie camera ...
PTID122	Whirlpool 265L Double Door Fridge	Refrigerators	IntelliSense Inverter 6th Sense DeepFreeze ...
PTID123	Philips Hair Dryer	Personal Care ...	1600W 3 spee 1600W 3 speed settings Th
PTID124	Realme Pad X Tablet	Tablets	Snapdragon 695 11 2K display 8340mAh b...
PTID125	Asus TUF Gaming F15	Laptops	Intel i7 RTX 3060 16GB RAM
PTID126	LG 1 Ton Split AC	Air Conditioners	Dual Inverter 5 star rating AI cooling
PTID127	Noise ColorFit Pro 4 Smartwatch	Smartwatches	1 72 display 7 day battery Bluetooth ...
PTID128	Fire Boltt Visionary Smartwatch	Smartwatches	1 78 AMOLED 100 sports modes BT c...
PTID129	Logitech MX Master 3S Mouse	Computer Acc...	Silent clicks 8K DPI sensor Bluetooth
PTID130	Mi TV 5X 50 Inch 4K LED	Televisions	4K HDR Dolby Vision Android TV
PTID131	Bajaj Majesty Electric Kettle	Kitchen Applia...	1 5L capacity 1500W auto shut off
PTID132	Canon EOS 1500D DSLR	Cameras	24 1MP DIGIC 4 processor WiFi
PTID133	Havells Insta Cook Induction Cook...	Kitchen Applia...	2000W auto shut off 8 cooking modes
PTID134	Bosch 7 kg Front Load Washing M...	Washing Machi...	EcoSilence Drive 1200 RPM 7kg capacity

PRODUCTS

CALCULATE THE TOTAL REVENUE GENERATED FROM PRODUCT SALES

QUERY:

```sql
SELECT
    SUM(order_details.quantity * appli.price) total_sales
FROM
    order_details
        JOIN
    appli ON order_details.product_id = appli.product_id;
```

OUTPUT:

total_sales
3978049

IDENTIFY THE HIGHEST-PRICED PRODUCT

QUERY:

```sql
SELECT
    product_types.FNAME, appli.price
FROM
    product_types
        JOIN
    appli ON product_types.PRODUCT_TYPE_ID = appli.product_type_id
ORDER BY appli.price DESC
LIMIT 1;
```

OUTPUT:

FNAME	price
Realme Watch 3 Pro	219990

IDENTIFY THE MOST COMMON PRODUCT TYPE ORDERED

QUERY:

```sql
SELECT
    appli.FTYPE,
    COUNT(order_details.ORDER_DETAILS_ID) AS ORDER_COUNT
FROM
    appli
        JOIN
    order_details ON appli.product_id = order_details.PRODUCT_ID
GROUP BY appli.FTYPE
ORDER BY order_count desc;
```

OUTPUT:

FTYPE	ORDER_COUNT
SOLAR	34
BATTERY	34
ELECTRIC	32

JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PRODUCT CATEGORY ORDERED

QUERY:

```sql
SELECT
    product_types.CATEGORY, SUM(order_details.quantity) AS qty
FROM
    product_types
        JOIN
    appli ON appli.product_type_id = product_types.PRODUCT_TYPE_ID
        JOIN
    order_details ON order_details.product_id = appli.product_id
GROUP BY product_types.category
ORDER BY qty DESC
LIMIT 5;
```

OUTPUT:

CATEGORY	qty
Laptops	15
Personal Care Appliances	14
Mobile Phones	12
Computer Accessories	11
Smartwatches	8

LIST THE TOP MOST ORDERED PRODUCT TYPE ALONG WITH THEIR QUANTITES

QUERY:

```sql
SELECT
    product_types.FNAME, SUM(order_details.quantity) AS qty
FROM
    product_types
        JOIN
    appli ON product_types.PRODUCT_TYPE_ID = appli.product_type_id
        JOIN
    order_details ON order_details.PRODUCT_ID = appli.product_id
GROUP BY product_types.FNAME
ORDER BY qty DESC
LIMIT 1;
```

OUTPUT:

FNAME	qty
Amazon Echo Dot (5th Gen)	2

DETERMINE THE DISTRIBUTION OF ORDER BY HOUR OF THE DAY

QUERY:

```sql
SELECT
    HOUR(etime) AS hour, COUNT(order_id) AS order_count
FROM
    orders
GROUP BY HOUR(etime);
```

OUTPUT:

hour	order_count
14	4
9	7
21	4
16	3
3	5

GROUP THE ORDERS BY DATE AND CALCULATE THE AVERAGE NUMBER OF PRODUCTS ORDERED PER DAY

QUERY:

```sql
SELECT
    ROUND(AVG(quantity), 0) as avg_order_perday
FROM
    (SELECT
        orders.ORDER_DATE, SUM(order_details.QUANTITY) AS quantity
    FROM
        orders
    JOIN order_details ON orders.ORDER_ID = order_details.order_id
    GROUP BY orders.ORDER_DATE) AS order_quantity;
```

OUTPUT:

avg_order_perday
1

DETERMINE THE TOP 3 MOST ORDERED PRODUCT TYPE BASED ON REVENUE

QUERY:

```sql
SELECT
    product_types.fname,
    SUM(appli.price * order_details.QUANTITY) AS revenue
FROM
    product_types
        JOIN
    appli ON appli.product_type_id = product_types.PRODUCT_TYPE_ID
        JOIN
    order_details ON order_details.PRODUCT_ID = appli.product_id
GROUP BY product_types.fname
ORDER BY revenue DESC
LIMIT 3;
```

OUTPUT:

fname	revenue
Amazon Echo Dot (5th Gen)	269998
Realme Watch 3 Pro	219990
Realme Book Slim Laptop	189990

JOIN RELEVANT TABLES TO FIND THE CATEGORY-WISE DISTRIBUTION OF APPLICANCES

QUERY:

```sql
SELECT
    category, COUNT(fname)
FROM
    product_types
GROUP BY CATEGORY;
```

OUTPUT:

category	COUNT(fname)
Mobile Phones	13
Laptops	15
Headphones	2
Fitness Bands	1
Footwear	4

ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME

QUERY:

```sql
select order_date,
sum(revenue ) over(order by order_date) as cum_revenue
from
(select orders.order_date,
sum(order_details.quantity* appli.price) as revenue
from order_details join appli
on order_details.product_id=appli.product_id
join orders
on orders.order_id=order_details.order_id
group by orders.order_date) as sales;
```

OUTPUT:

order_date	cum_revenue
2025-01-02	159900
2025-01-20	165899
2025-01-21	184898
2025-01-26	191897
2025-01-27	213896

CALCULATE THE PERCENTAGE CONTRIBUTION OF EACH CATEGORY TO TOTAL REVENUE

QUERY:

```sql
SELECT
    product_types.CATEGORY,
    round(SUM(appli.price * order_details.QUANTITY) / (SELECT
            ROUND(SUM(order_details.quantity * appli.price),
                    2) AS total_sales
        FROM
            order_details
                JOIN
            appli ON appli.product_id = order_details.PRODUCT_ID) * 100,2) AS revenue
FROM
    appli
        JOIN
    product_types ON appli.product_type_id = product_types.PRODUCT_TYPE_ID
        JOIN
    order_details ON order_details.PRODUCT_ID = appli.product_id
GROUP BY product_types.category
ORDER BY revenue DESC;
```

OUTPUT:

CATEGORY	revenue
Personal Care Appliances	21.16
Laptops	17.22
Mobile Phones	10.24
Smartwatches	8.72
Tablets	6.78
Computer Accessories	5.31
Kitchen Appliances	5.26

DETERMINE THE TOP MOST ORDERED PRODUCT TYPE BASED ON REVENUE FOR EACH PRODUCT CATEGORY

QUERY:

```sql
select fname,revenue from
(select category , fname, revenue,
rank() over(partition by category order by revenue desc) as run
from
(select product_types.CATEGORY,product_types.FNAME,
sum((order_details.QUANTITY) * appli.price) as revenue
from product_types join appli
on product_types.PRODUCT_TYPE_ID=appli.product_type_id
join order_details
on order_details.PRODUCT_ID=appli.product_id
group by product_types.CATEGORY, product_types.FNAME) as A) as B
where run <=3;
```

OUTPUT:

fname	revenue
LG 1 Ton Split AC	72990
Sony Alpha 7 IV Mirrorless Camera	84990
Canon EOS 1500D DSLR	1499
Nike Men's Jacket	9999
Mi 10000mAh Power Bank	54990
Redmi Power Bank 20000mAh	34990
Samsung Smart Monitor M7	33990

KEY LEARNINGS

- **SQL Queries:** Writing complex queries using SELECT, JOIN, GROUP BY, HAVING, and ORDERBY.

- **Data Aggregation:** Using functions like SUM(), AVG(), COUNT(), and MAX() for data analysis.

- **Data Filtering:** Applying WHERE and LIKE clauses to filter specific records.

- **Joins & Relationships:** Combining multiple tables using INNER JOIN, LEFT JOIN, etc., to extract meaningful insights.

- **Trend Analysis:** Analyzing sales trends, customer behavior, and product performance through SQL-based reports.