📊 Netflix Business Analysis Report

📌 Project Title

Netflix-User-Behaviour-Churn-Analysis

🧠 Problem Statement

Netflix aims to **improve customer retention, optimize revenue, and enhance content engagement** across different regions, subscription plans, and user segments.

The business faces challenges such as:

- Rising **customer churn**
- Uneven **revenue contribution across plans and countries**
- Varying **content engagement and satisfaction levels**
- Need for **data-driven decisions** to improve user retention and profitability

This project analyzes Netflix user, revenue, and engagement data to **identify key churn drivers, revenue trends, and actionable business insights** using Excel, SQL, Python, and Power BI.

🎯 Business Questions

Netflix stakeholders asked the following key questions:

1. Which **subscription plans** contribute the most revenue and churn?
2. How does **monthly revenue trend** change over time?
3. Which **countries drive maximum revenue**?
4. What is the **churn rate across different subscription types**?
5. How do **user engagement metrics** (watch hours, completion %, satisfaction) vary?
6. Which **content genres** show the highest engagement quality?
7. How can Netflix **reduce churn and improve retention**?

🛠 Tools & Technologies Used

- **Microsoft Excel** – Data cleaning & preparation
- **MySQL** – Business queries, CTEs, Window functions
- **Python (EDA)** – Exploratory data analysis & validation
- **Power BI** – Interactive dashboards & KPIs

📁 Data Preparation (Excel)

✓ Actions Performed

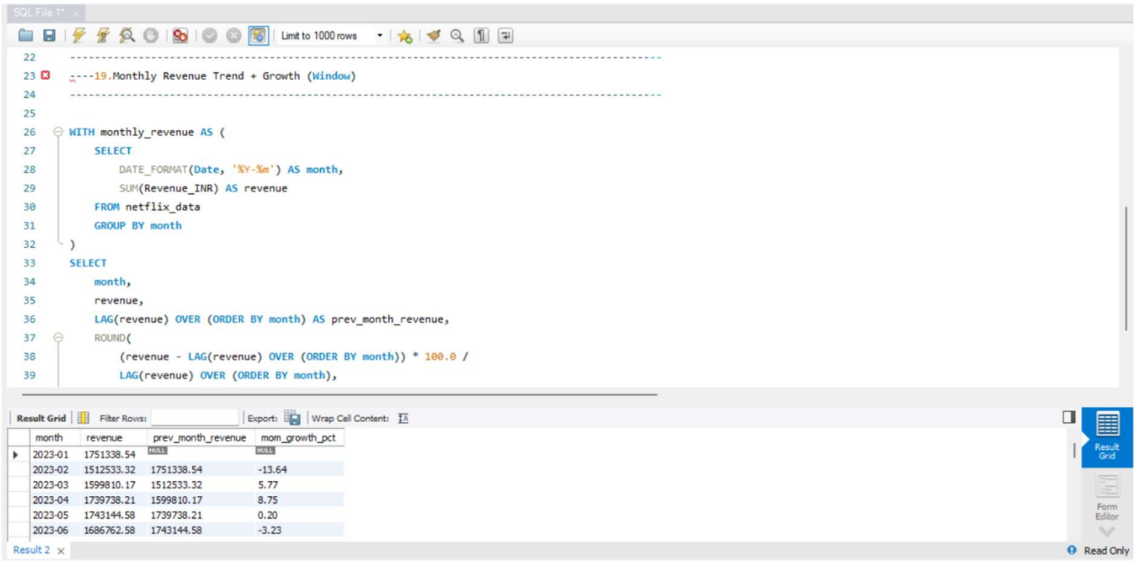
- Removed duplicates and invalid records
- Standardized categorical values (Plans, Country, Gender)
- Converted churn flag (0/1) into meaningful business labels
- Created:
    - **Cleaned Dataset**
    - **Data Dictionary**
    - **Cleaning Log**

SQL Analysis (MySQL)

Advanced SQL was used to answer business-critical questions using **CTEs and Window Functions**.

🔹 1. Monthly Revenue Trend & Growth (Window Function)

Objective:
Track revenue performance over time and calculate month-over-month growth.



```
-----------------------------------------------------------------------------------------
----19.Monthly Revenue Trend + Growth (Window)
-----------------------------------------------------------------------------------------

WITH monthly_revenue AS (
    SELECT
        DATE_FORMAT(Date, '%Y-%m') AS month,
        SUM(Revenue_INR) AS revenue
    FROM netflix_data
    GROUP BY month
)
SELECT
    month,
    revenue,
    LAG(revenue) OVER (ORDER BY month) AS prev_month_revenue,
    ROUND(
        (revenue - LAG(revenue) OVER (ORDER BY month)) * 100.0 /
        LAG(revenue) OVER (ORDER BY month),
```

month	revenue	prev_month_revenue	mom_growth_pct
2023-01	1751338.54	NULL	NULL
2023-02	1512533.32	1751338.54	-13.64
2023-03	1599810.17	1512533.32	5.77
2023-04	1739738.21	1599810.17	8.75
2023-05	1743144.58	1739738.21	0.20
2023-06	1686762.58	1743144.58	-3.23

Business Insight:

- Revenue shows **seasonal fluctuations**
- Certain months experience **negative MoM growth**, indicating churn or lower engagement

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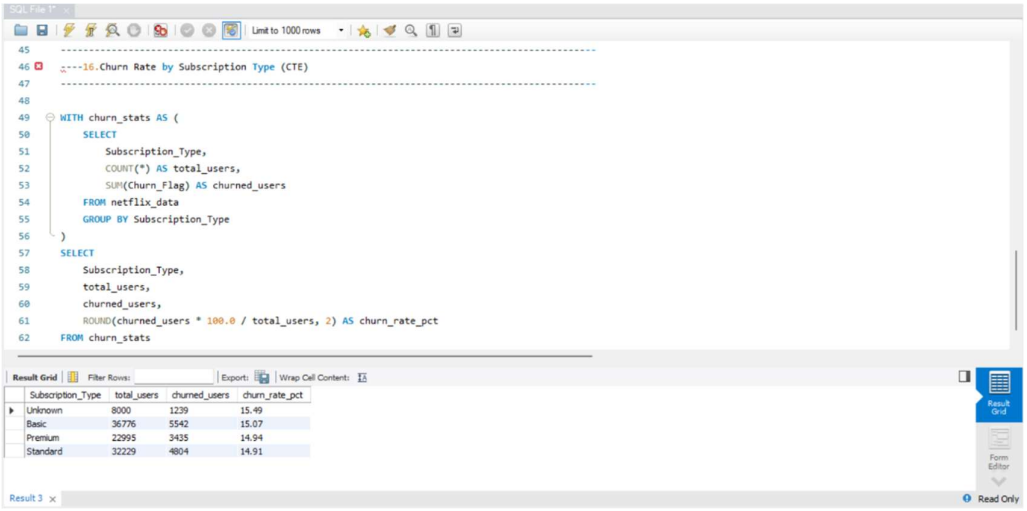
🔹 2. Churn Rate by Subscription Type (CTE)

Objective:
Identify which subscription plans have higher churn risk.



```sql
----16.Churn Rate by Subscription Type (CTE)

WITH churn_stats AS (
    SELECT
        Subscription_Type,
        COUNT(*) AS total_users,
        SUM(Churn_Flag) AS churned_users
    FROM netflix_data
    GROUP BY Subscription_Type
)
SELECT
    Subscription_Type,
    total_users,
    churned_users,
    ROUND(churned_users * 100.0 / total_users, 2) AS churn_rate_pct
FROM churn_stats
```

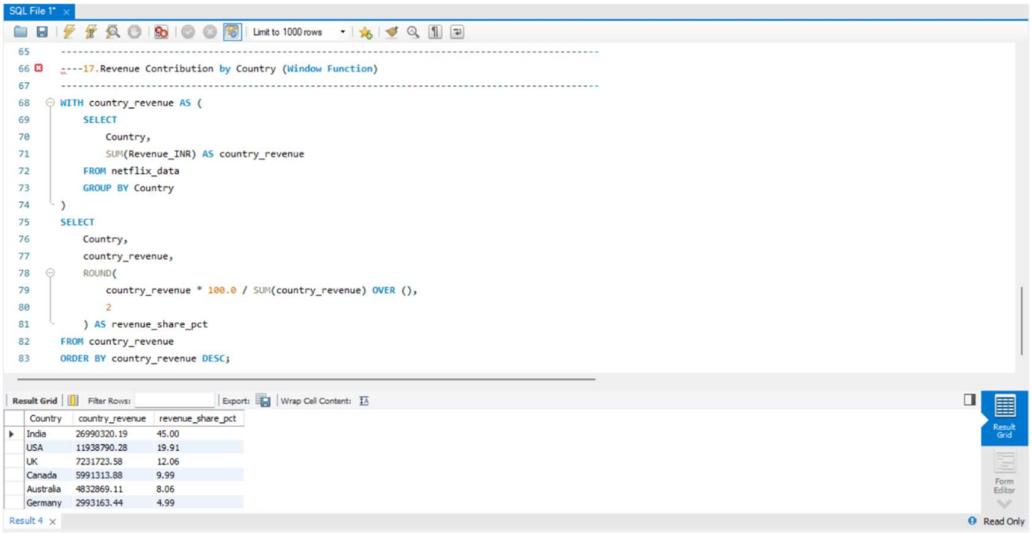
Subscription_Type	total_users	churned_users	churn_rate_pct
Unknown	8000	1239	15.49
Basic	36776	5542	15.07
Premium	22995	3435	14.94
Standard	32229	4804	14.91

Business Insight:

- **Basic and Unknown plans** show relatively higher churn
- Premium users are comparatively more stable

🔹 3. Revenue Contribution by Country (Window Function)

Objective:
Understand which countries drive the most revenue.



```sql
----17.Revenue Contribution by Country (Window Function)

WITH country_revenue AS (
    SELECT
        Country,
        SUM(Revenue_INR) AS country_revenue
    FROM netflix_data
    GROUP BY Country
)
SELECT
    Country,
    country_revenue,
    ROUND(
        country_revenue * 100.0 / SUM(country_revenue) OVER (),
        2
    ) AS revenue_share_pct
FROM country_revenue
ORDER BY country_revenue DESC;
```

Country	country_revenue	revenue_share_pct
India	26990320.19	45.00
USA	11938790.28	19.91
UK	7231723.58	12.06
Canada	5991313.88	9.99
Australia	4832869.11	8.06
Germany	2993163.44	4.99

Business Insight:

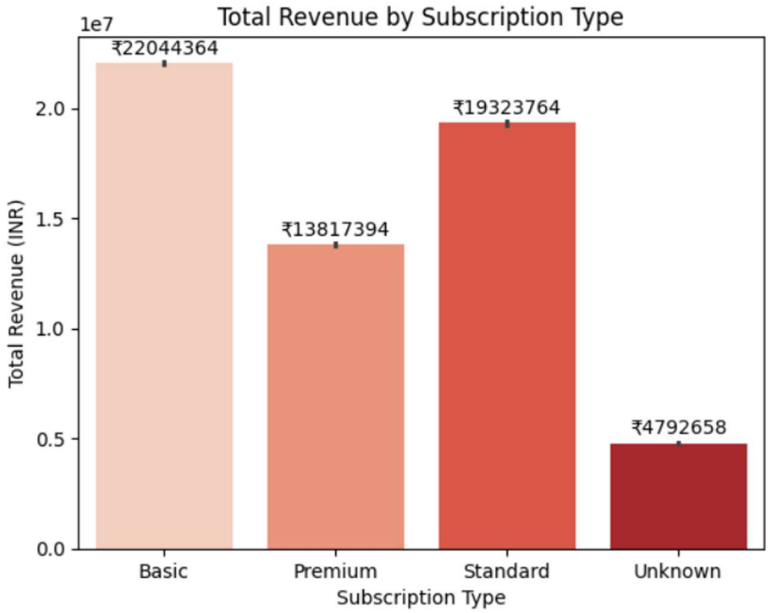
- India and USA contribute the **largest revenue share**
- Opportunity to expand monetization in mid-tier regions

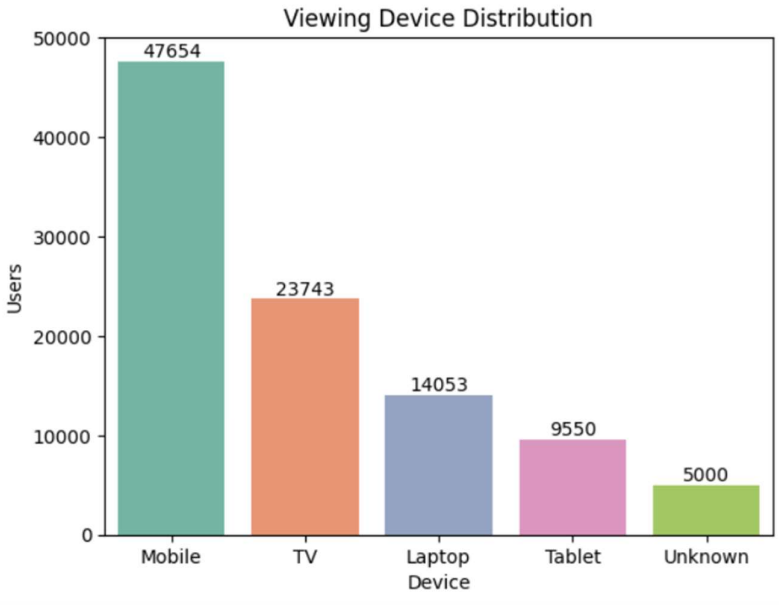
Python Exploratory Data Analysis (EDA)

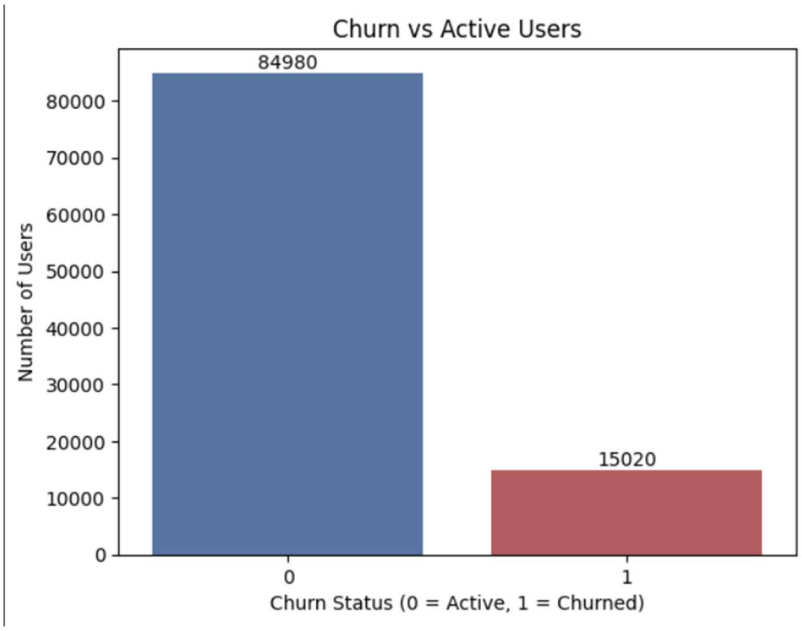
Python was used to **validate trends discovered in SQL** and explore deeper behavioral patterns.

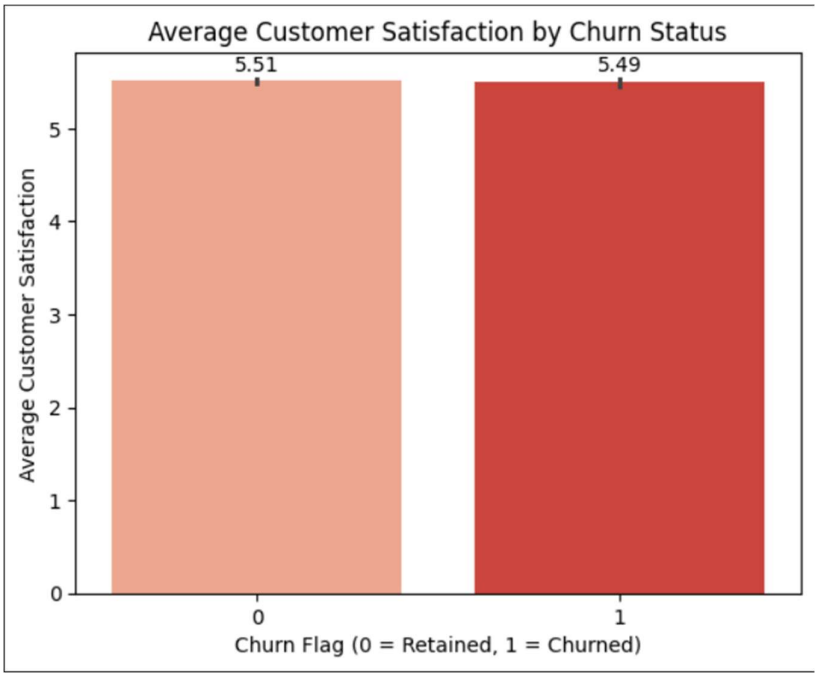
✓ Analysis Performed

- Distribution of watch hours & satisfaction
- Churn vs engagement comparison
- Subscription-wise behaviour analysis
- Country & genre-level engagement patterns









Key Insight:

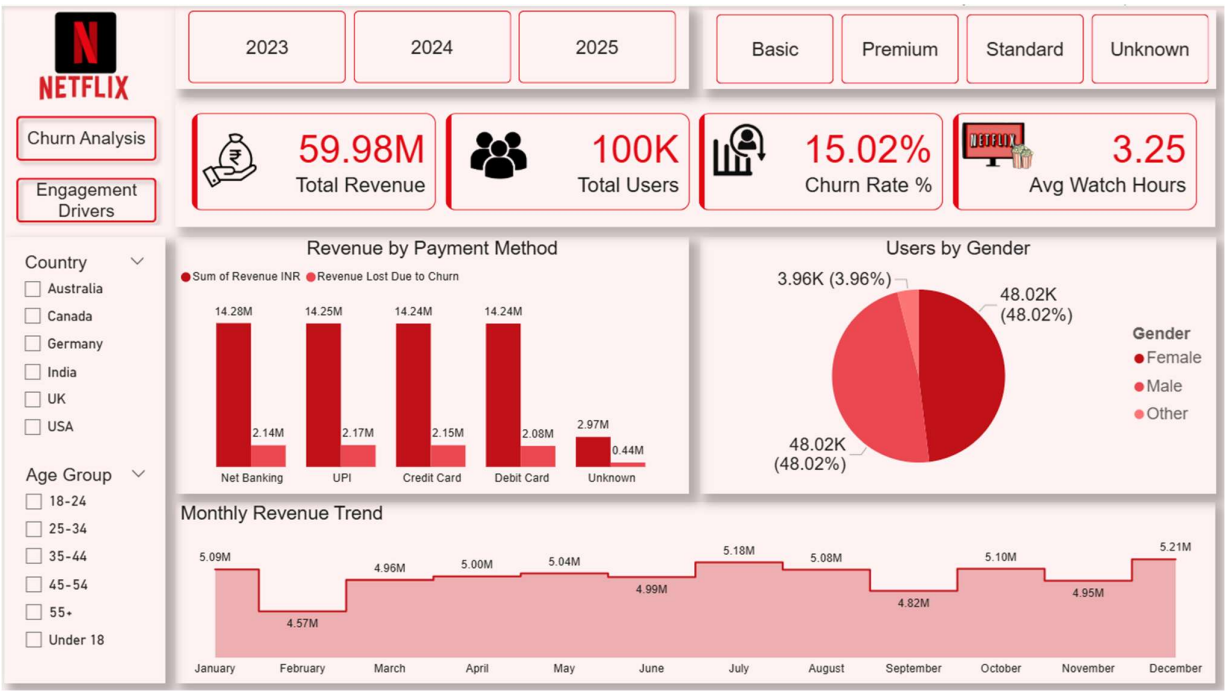
- Users with **lower watch hours and satisfaction scores** are more likely to churn
- Higher engagement directly correlates with retention

📊 Power BI Dashboard

An interactive Power BI dashboard was built to provide **executive-level insights**.

🔹 Dashboard Pages

1. **Overview**
2. **Churn Analysis**
3. **Engagement Drivers**



📈 Key KPIs Tracked

- Total Revenue
- Total Users
- Churn Rate (%)
- Revenue Lost Due to Churn
- Avg Watch Hours
- Average Completion %
- Average Satisfaction Score
- Retained Users

🔍 Business Insights Summary

- 📉 **15% churn rate** is causing significant revenue loss
- 💰 Premium & Standard plans generate higher revenue but still face churn
- 🌍 Few countries dominate revenue contribution
- 🎬 Certain genres drive **higher engagement quality**
- ⏱️ Lower engagement → higher churn probability

💡 Business Recommendations

1. 🎯 Introduce **retention offers** for high-churn plans
2. 🎬 Invest more in **high-engagement genres**
3. 🌍 Localize content for high-revenue regions
4. ⭐ Improve user experience to increase satisfaction
5. 📊 Monitor churn monthly using automated dashboards