



**Delhi Skill and
Entrepreneurship University**
Govt. of NCT of Delhi



(Bachelor of Computer Application)

**A Project Report on
Netflix Subscription Dashboard
Using Microsoft Power BI**

Submitted by:

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Session: 2022-25



Dwarka sec-9, New Delhi

(Bachelor of Computer Application)

Certificate

This project is for the department of Bachelor of computer Application, under faculty of computer science and engineering at **Delhi skill and Entrepreneurship University**, the project entitled **Netflix Subscription Dashboard** in satisfactory manner as a partial fulfillment of required degree of bachelor of computer application for the academic year 2024, of DSEU Dwarka Campus

This is to certify that **Aman Singh(41222121)** has contributed in successfully completing the project

Abstract of the Project

The proliferation of streaming services has led to an immense amount of data generated by platforms like Netflix. Analyzing this data is crucial for understanding user behavior, optimizing content delivery, and enhancing the overall user experience. This project focuses on the development of a comprehensive Netflix subscription dashboard using Microsoft Power BI, designed to visualize key metrics and trends associated with user subscriptions.

The dashboard provides insights into various aspects of Netflix's subscriber base, including demographic distributions, subscription plan preferences, regional performance, and user engagement patterns. The visualizations enable stakeholders to monitor subscription growth, identify churn rates, and forecast future trends. This project involved data collection, data cleaning, and the use of Power BI's data modeling and visualization capabilities to create interactive reports.

The resulting dashboard offers a user-friendly interface, allowing Netflix executives and analysts to make data-driven decisions with greater accuracy and efficiency. By leveraging Power BI, the project demonstrates the potential for business intelligence tools to transform raw data into actionable insights, ultimately contributing to improved customer retention and revenue growth for Netflix.

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1. Introduction

a. About the project idea:

This project focuses on developing a Netflix subscription dashboard using Power BI to visualize key metrics like subscriber growth, demographics, and engagement. The dashboard will help Netflix's management make informed decisions by providing insights into trends, churn patterns, and regional performance, ultimately supporting data-driven strategies for optimizing customer retention and revenue

b. About tools in use:

The project uses **Power BI** to create a dynamic and interactive dashboard, with data cleaning and preparation handled through **Power Query**. These tools together enable effective visualization and analysis of Netflix subscription data, providing clear insights for decision-making

Resources Required:

Netflix Subscription order dataset

Power bi

Access to computational resources for model training (e.g., CPU/GPU)

2. Purpose/Scope/Objective of the Analysis

Purpose: To develop an interactive Power BI dashboard that visualizes Netflix subscription data, providing actionable insights into subscriber growth, demographics, and engagement patterns.

Scope: The project involves collecting and integrating data related to subscription trends, demographic information, plan preferences, and regional performance, and then creating visualizations to present this data effectively.

Objectives:

- Design and implement interactive visualizations to track subscription growth and demographic trends.
- Analyze subscriber preferences for different plans and assess regional performance variations.
- Identify and understand patterns in user engagement and churn rates.
- Deliver insights that support strategic decision-making and improve Netflix's subscription management.

3. Requirements for the Project

a. Hardware used:.

While the hardware requirements are not overly demanding, a computer with sufficient processing power and RAM (depending on dataset size) will ensure smooth workflow.

Processor: Intel core i5

RAM: 12 GB

Storage : 512 GB SSD

b. **Software used:** Microsoft Power BI is a business intelligence tool that allows you to visualize and analyze data.

c. Technology used:

Access to the Netflix Subscription order dataset (ideally in a well-structured format like CSV).Data science methodologies, including data preprocessing, exploratory data analysis (EDA).

4. Methodology

a. Introduction:

The methodology outlines the approach for developing a Netflix subscription dashboard using Power BI. It details the steps taken from data collection to visualization and analysis, ensuring a structured process for delivering actionable insights.

b. General Description:

The process begins with gathering relevant data on Netflix subscriptions, including growth metrics, demographic information, plan details, and regional performance. Data is then cleaned and transformed using Power Query. The cleaned data is imported into Power BI, where interactive dashboards and reports are created to visualize key metrics and trends.

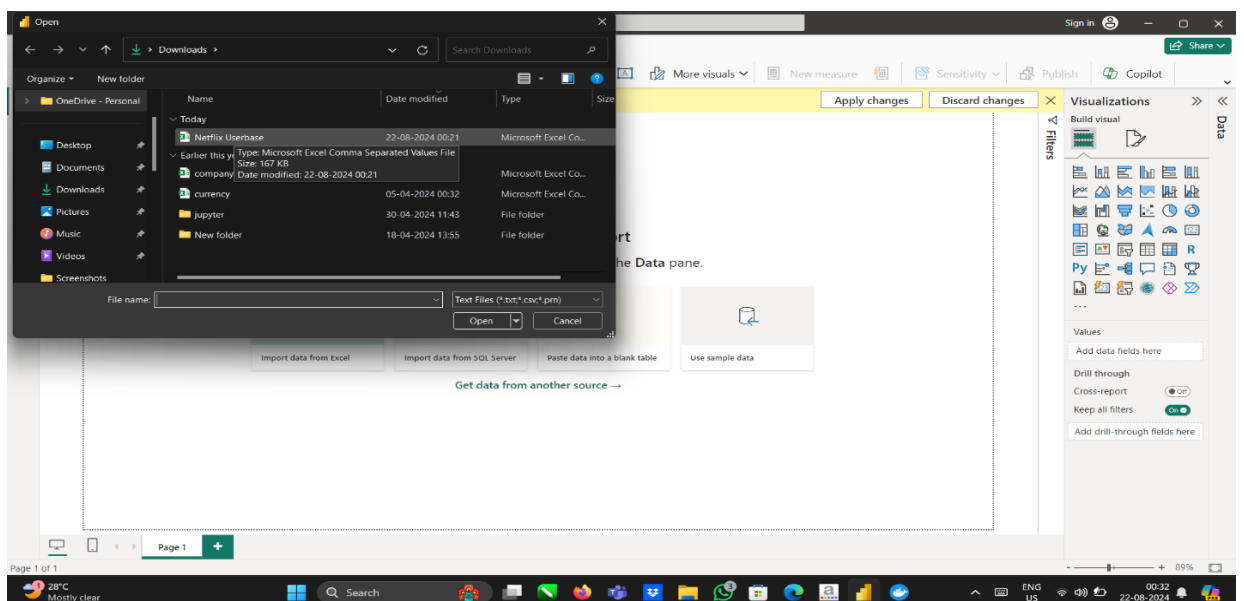
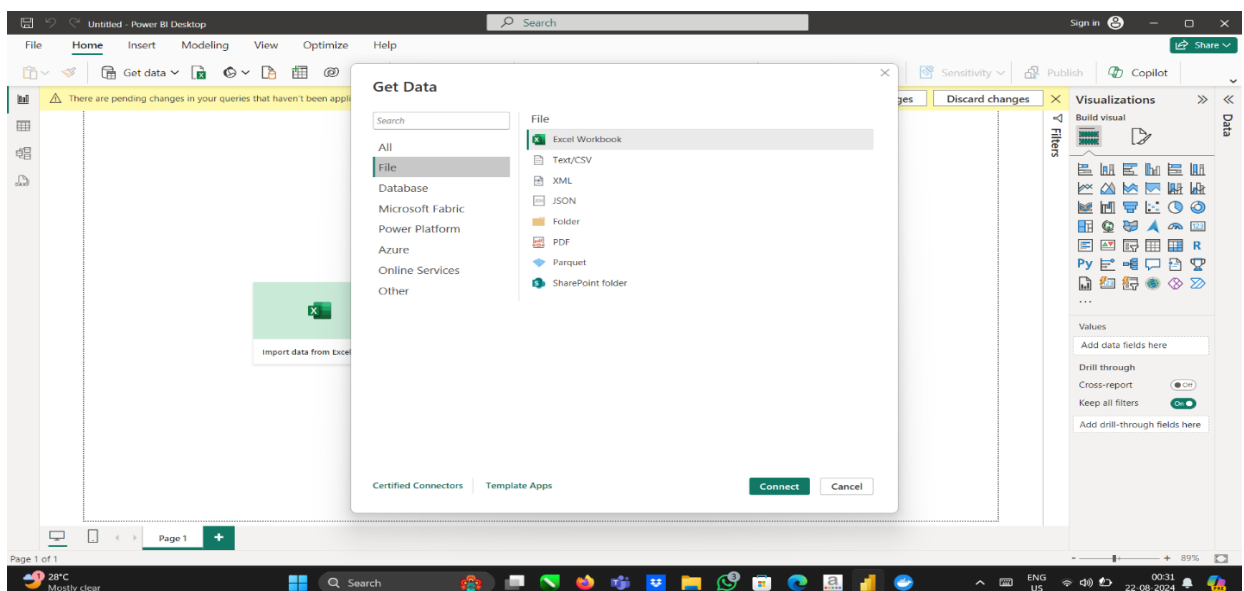
c. Specific Requirements, Functions, and Formulas:

- 1.) Data Sources: Subscription records, demographic data, plan details, regional statistics.
- 2.) Functions: Use Power Query for data cleaning, DAX (Data Analysis Expressions) for calculations and aggregations.

d. Analysis Results:

The analysis provides insights into subscriber growth patterns, demographic distribution, plan popularity, and regional performance. Key findings include trends in subscription changes, demographic preferences, and regions with the highest engagement or churn. These insights are visualized through interactive charts and graphs, enabling stakeholders to make data-driven decisions to optimize Netflix's subscription strategy

5. Importing Data, Data Cleaning and Transformation



Untitled - Power BI Desktop

File Home Insert Modeling View Optimize Help

Get data Get data Get data

There are pending changes in your queries that

NetfliX Userbase.csv

File Origin: 1252: Western European (Windows) Delimiter: Comma Data Type Detection: Based on first 200 rows

User ID	Subscription Type	Monthly Revenue	Join Date	Last Payment Date	Country	Age	Gender	Device	Plan Duration
1	Basic	10	10-01-2022	10-06-2022	United States	28	Male	Smartphone	1 Month
2	Premium	15	05-09-2021	22-06-2022	Canada	35	Female	Tablet	1 Month
3	Standard	12	28-02-2022	27-06-2022	United Kingdom	42	Male	Smart TV	1 Month
4	Standard	12	10-07-2022	26-06-2022	Australia	51	Female	Laptop	1 Month
5	Basic	10	01-05-2022	28-06-2022	Germany	33	Male	Smartphone	1 Month
6	Premium	15	18-03-2022	27-06-2022	France	29	Female	Smart TV	1 Month
7	Standard	12	09-12-2021	25-06-2022	Brazil	46	Male	Tablet	1 Month
8	Basic	10	02-04-2022	24-06-2022	Mexico	39	Female	Laptop	1 Month
9	Standard	12	20-10-2022	23-06-2022	Spain	37	Male	Smartphone	1 Month
10	Premium	15	07-01-2022	22-06-2022	Italy	44	Female	Smart TV	1 Month
11	Basic	10	16-05-2022	22-06-2022	United States	31	Female	Smartphone	1 Month
12	Premium	15	23-02-2022	28-06-2022	Canada	45	Male	Tablet	1 Month
13	Standard	12	30-11-2021	27-06-2022	United Kingdom	48	Female	Laptop	1 Month
14	Basic	10	01-08-2022	26-06-2022	Australia	27	Male	Smartphone	1 Month
15	Standard	12	09-05-2022	28-06-2022	Germany	38	Female	Smart TV	1 Month
16	Premium	15	07-04-2022	27-06-2022	France	36	Male	Tablet	1 Month
17	Basic	10	24-01-2022	25-06-2022	Brazil	30	Female	Laptop	1 Month
18	Standard	12	18-10-2021	24-06-2022	Mexico	43	Male	Smartphone	1 Month
19	Premium	15	15-02-2022	23-06-2022	Spain	32	Female	Smart TV	1 Month
20	Basic	10	27-03-2022	22-06-2022	Italy	41	Male	Tablet	1 Month

Extract Table Using Examples Load Transform Data Cancel

Visualizations

Build visual

Filters

Values

Add data fields here

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Page 1 of 1

28°C Mostly clear

Search

ENG US

00:32 22-08-2024

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Recent Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Manage Query

Queries [2]

NetfliX Userbase

NetfliX Userbase (2)

Table.TransformColumnTypes(#"Changed Type", [{"Join Date", type datetime}, {"en-IN"}])

	Subscription Type	Monthly Revenue	Join Date	Last Payment Date	Country	Age
1	Basic	10	10-01-2022 00:00:00	10-06-2022	United States	28
2	Premium	15	05-09-2021 00:00:00	22-06-2022	Canada	35
3	Standard	12	28-02-2022 00:00:00	27-06-2022	United Kingdom	42
4	Standard	12	10-07-2022	26-06-2022	Australia	51
5	Basic	10	01-05-2022	28-06-2022	Germany	33
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7	Standard	12	09-12-2021	25-06-2022	Brazil	46
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9	Standard	12	20-10-2022	23-06-2022	Spain	37
10	Premium	15	07-01-2022	22-06-2022	Italy	44
11	Basic	10	16-05-2022	22-06-2022	United States	31
12	Premium	15	23-02-2022	28-06-2022	Canada	45
13	Standard	12	30-11-2021	27-06-2022	United Kingdom	48
14	Basic	10	01-08-2022	26-06-2022	Australia	27
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16	Premium	15	07-04-2022	27-06-2022	France	36
17	Basic	10	24-01-2022	25-06-2022	Brazil	30
18	Standard	12	18-10-2021	24-06-2022	Mexico	43
19	Premium	15	15-02-2022	23-06-2022	Spain	32
20	Basic	10	27-03-2022	22-06-2022	Italy	41
21	Premium	15	10-01-2022	22-06-2022	United States	28
22	Basic	10	05-12-2021 00:00:00	27-06-2022	United Kingdom	49
23	Standard	12	03-04-2022 00:00:00	26-06-2022	Australia	31
24	Standard	12	09-09-2021 00:00:00	28-06-2022	Germany	40
25	Basic	10	14-03-2022 00:00:00	28-06-2022	France	29
26	Premium	15	12-01-2022 00:00:00	27-06-2022	France	29
27	Basic	10	29-08-2022 00:00:00	25-06-2022	Brazil	47

Change Type with Locale

Change the data type and select the locale of origin.

Data Type: Date/Time

Locale: English (India)

Sample input values:

29 March 2016 14:45

29 March 2016 14:45:33

29-03-2016 14:45

29-03-2016 14:45:33

OK Cancel

10 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 00:34

28°C Mostly clear

Search

ENG US

00:35 22-08-2024

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Recent Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Manage Query

Queries [2]

NetfliX Userbase

NetfliX Userbase (2)

Table.TransformColumnTypes(#"Changed Type", [{"Join Date", type datetime}, {"en-IN"}])

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15	Standard	12	09-05-2022	28-06-2022	Germany	38
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24	Standard	12	09-09-2021 00:00:00	28-06-2022	Germany	40
25	Basic	10	14-03-2022 00:00:00	28-06-2022	France	29
26	Premium	15	12-01-2022 00:00:00	27-06-2022	France	29
27	Basic	10	29-08-2022 00:00:00	25-06-2022	Brazil	47

Change Type with Locale

Change the data type and select the locale of origin.

Data Type: Date/Time

Locale: English (India)

Sample input values:

29 March 2016 14:45

29 March 2016 14:45:33

29-03-2016 14:45

29-03-2016 14:45:33

OK Cancel

10 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 00:34

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Search

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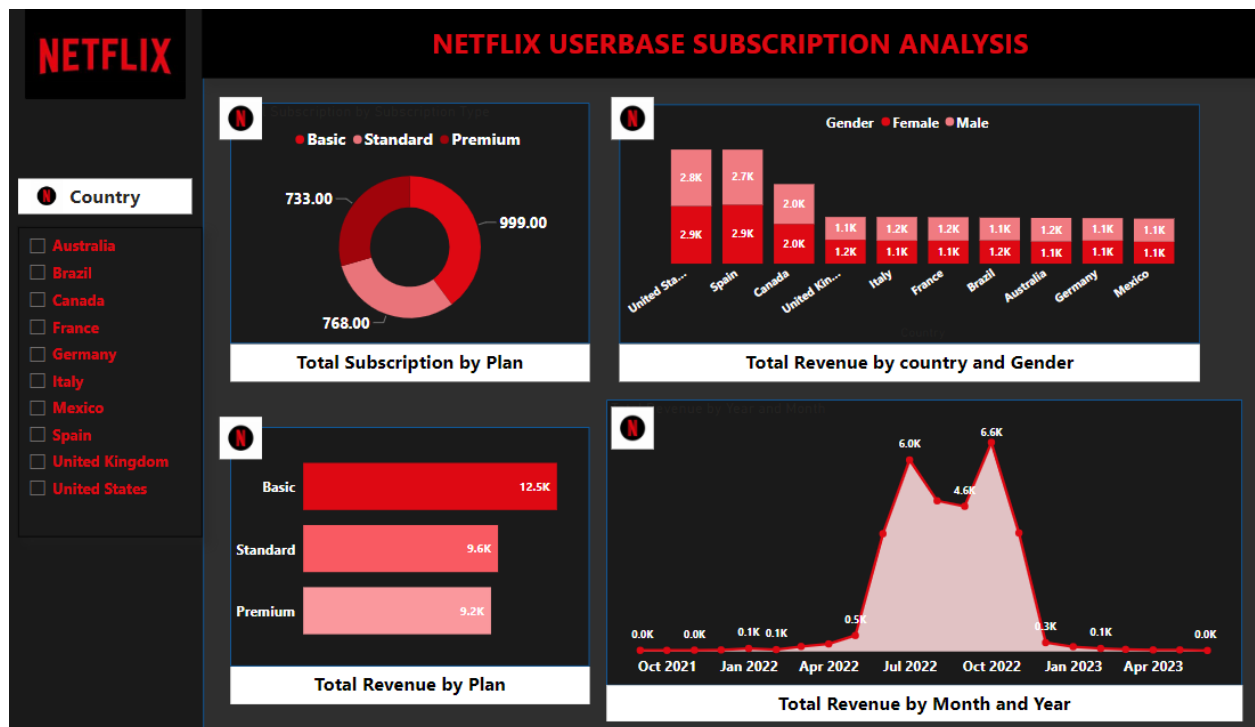
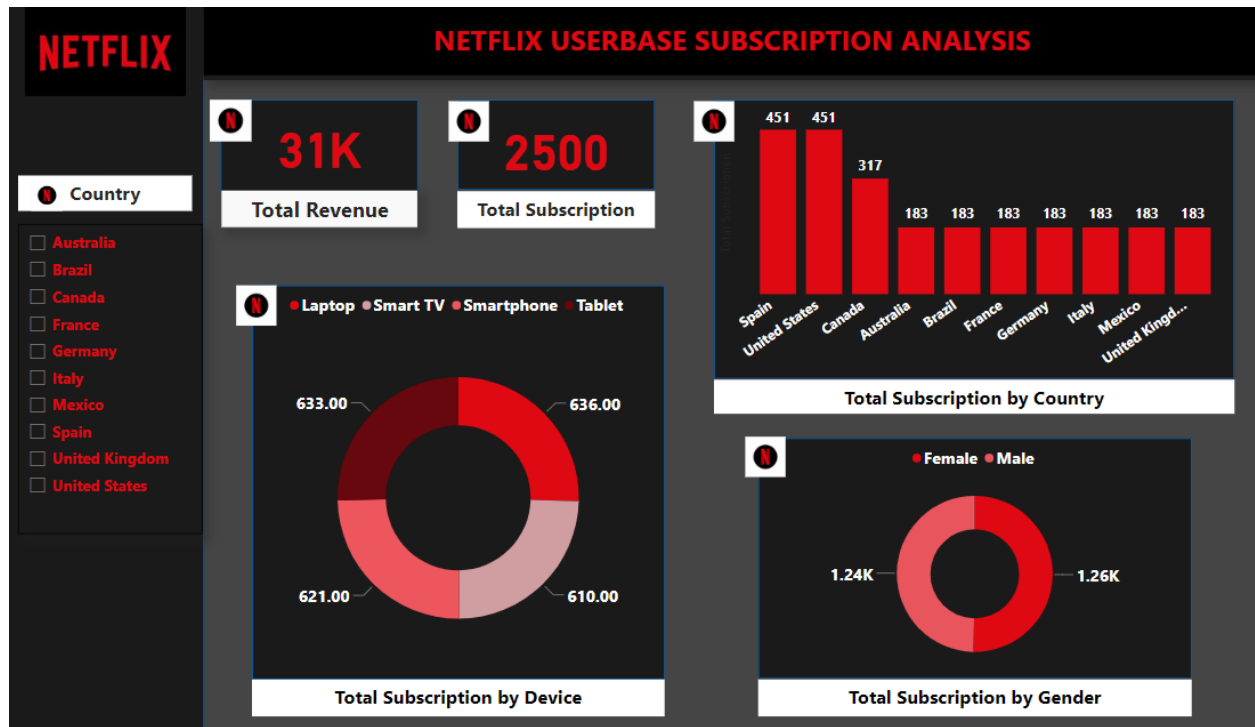
00:35 22-08-2024

Power Query Editor interface showing the 'Split Column by Delimiter' dialog box. The dialog is open over a table with columns: Subscription Type, Entry, States, Kingdom, City, States, Kingdom, City. The 'Split at' options are: Left-most delimiter (selected), Right-most delimiter, and Each occurrence of the delimiter. The 'Quote Character' is set to '-'. The 'Advanced options' section includes 'Split using special characters' and 'Insert special character'. The 'Query Settings' pane on the right shows the 'APPLIED STEPS' list: Source, Promoted Headers, Changed Type, Changed Type with Locale, and Changed Type with Locale1. The status bar at the bottom indicates '10 COLUMNS, 999+ ROWS' and 'Column profiling based on top 1000 rows'.

Power Query Editor interface showing the 'Split Column by Delimiter' dialog box. The dialog is open over a table with columns: Subscription Type, Entry, States, Kingdom, City, States, Kingdom, City. The 'Split at' options are: Left-most delimiter (selected), Right-most delimiter, and Each occurrence of the delimiter. The 'Quote Character' is set to '-'. The 'Advanced options' section includes 'Split using special characters' and 'Insert special character'. The 'Query Settings' pane on the right shows the 'APPLIED STEPS' list: Source, Promoted Headers, Changed Type, Changed Type with Locale, Changed Type with Locale1, Split Column by Delimiter, and Changed Type1. The status bar at the bottom indicates '11 COLUMNS, 999+ ROWS' and 'Column profiling based on top 1000 rows'.

Power Query Editor interface showing the 'Table.RenameColumns' function applied to the data. The function is: `Table.RenameColumns(#"Removed Columns1",{"Last Payment Date.1", "Last Payment Date"})`. The table has columns: User ID, Subscription Type, Monthly Revenue, Join Date, Last Payment Date, Country, Age. The 'Query Settings' pane on the right shows the 'APPLIED STEPS' list: Source, Promoted Headers, Changed Type, Changed Type with Locale, Changed Type with Locale1, Split Column by Delimiter, Changed Type1, Split Column by Delimiter1, Changed Type2, Changed Type with Locale2, Split Column by Delimiter2, Changed Type3, Renamed Columns, Removed Columns, Changed Type with Locale3, Split Column by Delimiter3, Changed Type4, Removed Columns1, and Renamed Columns1. The status bar at the bottom indicates '10 COLUMNS, 999+ ROWS' and 'Column profiling based on top 1000 rows'.

6. Dashboard Visualization



7. Future Scope of Project:

The future scope of this project includes expanding the dashboard's capabilities by integrating additional data sources, such as user behavior analytics, content preferences, and social media sentiment analysis. Advanced predictive analytics and machine learning models can be incorporated to forecast subscriber trends, identify potential churn risks, and suggest personalized content to retain users. Additionally, the dashboard could be enhanced with real-time data streaming to provide up-to-date insights. Extending the dashboard's accessibility to mobile platforms and integrating it with other business intelligence tools will further improve its usability and impact for Netflix's decision-makers.

8. Conclusion:

The Netflix subscription dashboard developed using Power BI effectively transforms raw data into actionable insights, enabling Netflix to better understand its subscriber base. By visualizing key metrics such as growth trends, demographic breakdowns, plan preferences, and regional performance, the dashboard supports data-driven decision-making that can enhance customer retention and optimize revenue strategies. The project demonstrates the power of business intelligence tools in turning complex data into clear, interactive visualizations, ultimately contributing to more informed and strategic management of Netflix's subscription services.

9. Bibliography :

For datasets:

<https://www.kaggle.com/datasets/arnavsmayan/netflix-userbase-dataset>

Other references:

https://en.m.wikipedia.org/wiki/Data_science