
**VNR Vignana Jyothi Institute of Engineering and Technology (Affiliated to J.N.T.U, Hyderabad)**

**Bachupally(v), Hyderabad, Telangana, India.**

# ANALYSIS OF NETFLIX DATABASES

A course project submitted in complete requirements for the award of the degree of

**BACHELOR OF TECHNOLOGY**

IN

**COMPUTER SCIENCE AND ENGINEERING**

Submitted by

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# VNR Vignana Jyothi Institute of Engineering and Technology

**(Affiliated to J.N.T.U, Hyderabad)**
**Bachupally(v), Hyderabad, Telangana, India.**

## CERTIFICATE

This is to certify that A Pranaya (22071A05D1), A Ananya(22071A05D2), M Pranati(22071A05G6), P Himapriya (22071A05H6) have completed their course project work at CSE Department of VNR VJIET, Hyderabad entitled **"Analysis Of Netflix Databases"** in complete fulfillment of the requirements for the award of B.Tech degree during the academic year 2023-2024. This work is carried out under my supervision and has not been submitted to any other University/Institute for award of any degree/diploma.

| | | |
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| C.S.E Department | C.S.E Department | C.S.E Department |
| VNR VJIET | VNR VJIET | VNR VJIET |

# DECLARATION

This is to certify that our project report titled “Analysis Of Netflix Databases" submitted to Vallurupalli Nageswara Rao Institute of Engineering and Technology in complete fulfillment of requirement for the award of Bachelor of Technology in Computer Science and Engineering is a bonafide report to the work carried out by us under the guidance and supervision of Mr.I.Ravindra Kumar , Assistant Professor, Department of Computer Science and Engineering, Vallurupalli Nageswara Rao Institute of Engineering and Technology. To the best of our knowledge, this has not been submitted in any form to other university or institution for the award of any degree or diploma.


| **A Pranaya** | **A Ananya** | **M Pranati** | **P Himapriya** |
|---|---|---|---|
| 22071A05D1 | 22071A05D2 | 22071A05G6 | 22071A05H6 |
| CSE-C | CSE-C | CSE-C | CSE-C |

# ABSTRACT

Our project, "The Analysis of Netflix Databases" aims to provide a comprehensive and visually compelling depiction of data collected from Netflix, sourced through Kaggle. The primary objective is to offer valuable insights to both investors and employees of the company. Leveraging the powerful capabilities of Power BI we have created dynamic and interactive charts that facilitate a clear understanding of the data, enabling stakeholders to draw more accurate conclusions.

The visualizations we've generated provide users with versatile methods of interaction, allowing them to connect different datasets, perform complex calculations, and engage in a dynamic exploration of the data. Through the capabilities of Power BI, our project enhances the decision-making process by offering a user-friendly platform for in-depth analysis and interpretation of Netflix data.

Our project highlights key trends in Netflix, such as stock price valuation over time, the distribution of subscription types among customers, and the popularity of different genres. These insights serve as valuable tools for investors and the company's internal teams to make informed decisions about the future direction and growth strategies for Netflix.

# INDEX

# 1. INTRODUCTION

Our comprehensive project on Netflix analysis, powered by the dynamic capabilities of Power BI, offers a deep dive into various facets of the streaming giant's ecosystem. Leveraging the user-friendly interface and advanced visualization tools of Power BI, we seamlessly conducted an in-depth exploration of Netflix's stock market performance, subscriber dynamics across countries, and a detailed analysis of TV shows and movies.

Moving beyond financial metrics, our second report focuses on the heartbeat of Netflix - its global subscriber base. We dissect subscription dynamics across countries, presenting a holistic view of library sizes, content distribution, and subscription costs. This in-depth analysis equips stakeholders with the tools to identify regional content preferences, understand subscription cost structures, and make informed decisions regarding global market strategies.

We pivot to the content itself, conducting a detailed country-wise analysis of TV shows and movies. This analysis spans multiple dimensions, including genres, ratings, and release patterns. Stakeholders gain a comprehensive understanding of viewer preferences, content reception, and historical content release trends. By revealing the top genres, ratings distribution, and the evolution of content releases over the years, this report serves as a strategic tool for content acquisition, production, and market-specific tailoring.

The utilization of Power BI played a pivotal role in simplifying what could otherwise be complex data analysis tasks. Netflix's stock market performance, Power BI facilitated the aggregation and presentation of high, low, open, and close stock prices over various timeframes, providing a seamless and visually engaging portrayal of financial trends. The global subscription dynamics analysis effortlessly came to life with Power BI, allowing us to showcase library sizes, content distribution, and subscription costs on a country-by-country basis with remarkable clarity.

In essence, Power BI not only simplified the complex process of data analysis but also elevated the quality of our project by enabling dynamic and interactive visualizations. Through this project, we showcase the synergy between data analytics and advanced visualization tools, highlighting how Power BI contributes to making strategic decision-making more accessible and insightful in the ever-evolving landscape of the entertainment industry.

# 2. LITERATURE

Before the advent of Excel and Power BI, several systems and tools were used to manage and analyze data. These earlier systems laid the groundwork for modern spreadsheet and business intelligence solutions. Here are some notable systems that existed before Excel and Power BI:

**Lotus 1-2-3:**

Considered one of the earliest spreadsheet software, Lotus 1-2-3 was widely used in the 1980s. It integrated spreadsheet, database, and graphing functions, setting the stage for the spreadsheet capabilities we see in Excel today.

**VisiCalc:**

Often recognized as the first electronic spreadsheet for personal computers, VisiCalc was a groundbreaking tool. Its success in the late 1970s marked the beginning of the era of personal computing for business applications.

**dBase:**

Initially designed for microcomputers, dBase was an early database management system (DBMS). It allowed users to create, organize, and manipulate databases, becoming a precursor to modern database systems.

**IBM Information Management System (IMS):**

IMS, introduced in the 1960s, was one of the earliest database management systems. It was designed for large-scale mainframe environments and served as a foundation for managing hierarchical data structures.

**COBOL (Common Business-Oriented Language):**

Although primarily a programming language, COBOL played a significant role in early business data processing. It was designed for business, finance, and administrative systems, and many early data processing systems were built using COBOL.

**Mini/Microcomputer-Based Systems:**

Before personal computers became ubiquitous, mini and microcomputers were used for various business applications. These systems often relied on custom software solutions for tasks such as data entry, basic calculations, and reporting

**Decision Support Systems (DSS):**

DSS emerged in the 1960s and 1970s as computer-based systems designed to support decisionmaking processes. They integrated data analysis tools, models, and user interfaces to assist managers in making informed decisions.

While these systems were foundational, they lacked the user-friendly interfaces and broad accessibility that Excel and Power BI later brought to the table. Excel, introduced in 1985, became a game-changer due to its intuitive spreadsheet interface and powerful calculation capabilities. Power BI, developed by Microsoft and released in 2013, took data analysis to a new level by providing robust business intelligence and visualization tools for a broader audience.

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# 3. EXISTING SYSTEM

Excel stands out as a ubiquitous and potent tool for crafting reports, offering a flexible platform for users to structure and showcase data efficiently. Armed with an extensive range of features, Excel simplifies the creation of polished and visually compelling reports, making it a favored solution across various sectors. A key asset is its proficiency in utilizing formulas and functions for intricate calculations, data analysis, and the extraction of meaningful insights. Functions such as SUM, AVERAGE, and VLOOKUP empower users to aggregate and manipulate data, delivering a comprehensive snapshot within the report.

Excel's formatting capabilities play a crucial role in report generation. Users can customize the appearance of cells, rows, and columns to enhance readability and highlight important information. Conditional formatting allows for the automatic application of styles based on specified criteria, helping to draw attention to critical data points. Additionally, charts and graphs can be easily generated to visualize trends and patterns, adding a dynamic dimension to the reports. Excel provides various chart types, such as bar charts, line graphs, and pie charts, allowing users to choose the most effective representation for their data.

Collaboration is another notable aspect of report generation in Excel. Multiple users can work on the same spreadsheet simultaneously, ensuring real-time updates and contributions. Excel also supports the integration of external data sources, enabling users to import information from databases or other applications directly into their reports. With these collaborative features and data connectivity options, Excel becomes a versatile tool for teams working together to create comprehensive and insightful reports.

# 4. PROPOSED SYSTEM

Power BI, developed by Microsoft, stands as a formidable business intelligence tool widely acclaimed for its capabilities in report generation and data visualization. The tool simplifies the often-intricate process of transforming raw data into insightful reports and interactive dashboards. Its multifaceted features cater to a diverse range of users, from data analysts to business executives, providing a user-friendly interface coupled with robust analytical functionalities.

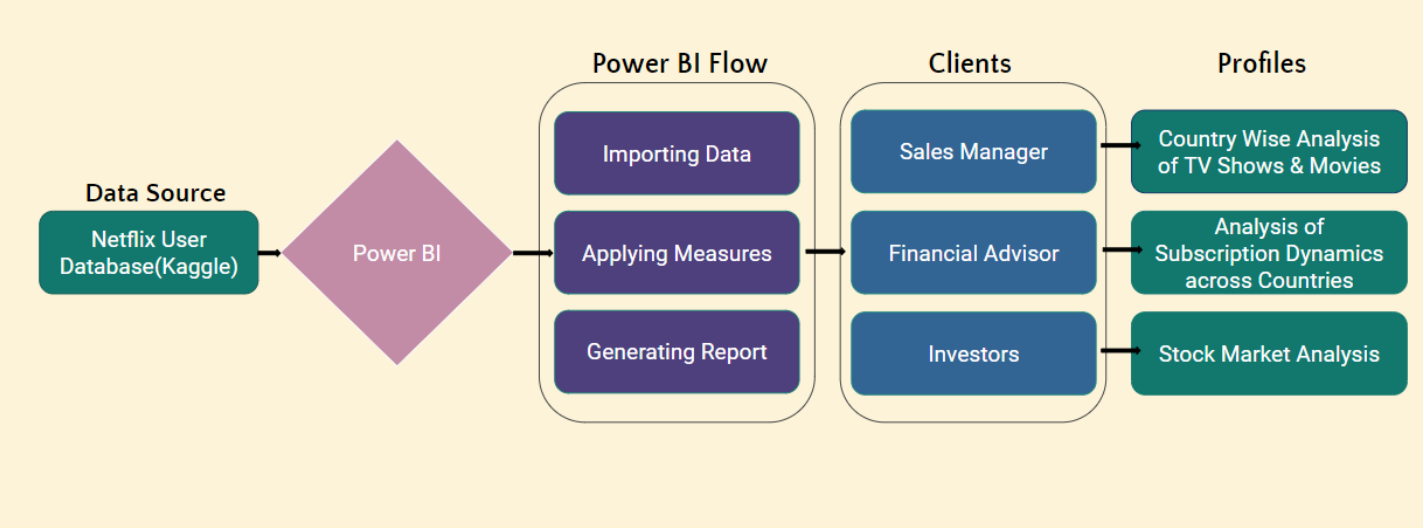
The first step in harnessing Power BI involves connecting to various data sources, ranging from databases to Excel files and cloud-based services. With an extensive selection of data connectors, Power BI ensures seamless integration, allowing users to aggregate and analyze data from disparate platforms. Once data is imported, Power BI's intuitive query editor comes into play, enabling users to shape and refine the data to meet specific reporting needs. This step involves cleaning, filtering, and transforming data, ensuring that it aligns with the analytical objectives. Power BI goes further by allowing the creation of calculated columns and measures, empowering users to derive meaningful insights directly from the raw data.

Power BI doesn't stop at report creation; it excels in sharing and collaboration. Reports and dashboards can be published to the Power BI service, making them accessible to a broader audience. The platform supports automatic data refreshes, ensuring that reports reflect the latest information. Power BI's interactive nature allows for real-time exploration of data, empowering users to make informed decisions based on up-to-date and visually compelling reports.

In essence, Power BI emerges as a comprehensive solution that streamlines the entire process of data analysis and visualization, making it a go-to tool for businesses seeking actionable insights from their data.

# 5. ARCHITECTURE

**Structure of Structure of Netflix User Database Analysis through Power BI:**




In the inaugural phase of our project, we embarked on a comprehensive exploration of Power BI, leveraging its capabilities to valuable insights. This journey unfolded with a meticulous focus on data importation and rigorous analysis, resulting in the development of three distinct reports that lay the foundation for informed decision-making. These reports are tailored to cater to the unique needs of three key client profiles, each representing a pivotal aspect of our project.

The first profile, overseen by the Sales Manager, revolves around the intricate world of Movies and TV Shows Analysis. Here, we dissect the performance of each branch, examining genres, ratings, and release dates to optimize content strategies and enhance audience engagement.

The second profile is guided by Financial Advisor. This report highlights the subscription fee across countries, delivering insights essential for financial planning and compliance.

The third and equally critical profile is the Investors' domain, where we delve into a meticulous Netflix Stock Market Analysis. This report not only scrutinizes the historical trends and market performance of Netflix's stock but also provides a nuanced understanding of financial metrics critical for strategic decision-making.

Each profile demands specialized analysis and reporting, ensuring that the generated insights resonate with the needs and objectives outlined by the respective clients for their designated spheres.

# 6. REQUIREMENTS (DATASET)

## Netflix Userbase Datasets:

The sales data in order to conduct a comprehensive analysis of Netflix databases, three distinct datasets are required. The first dataset focuses on Netflix stock prices, encompassing features such as opening, closing, high, and low prices, along with trading volume. The second dataset delves into country-wise Netflix subscriptions, providing information on the total library size, the number of TV shows and movies, and subscription costs across different countries. The third dataset offers a detailed catalog of Netflix content, featuring unique identifiers, titles, directors, cast, country of production, date added, release year, rating, and duration (in minutes or number of seasons) for each movie or TV show.

To facilitate a holistic analysis, these datasets can be integrated based on the common feature 'Country.' This integration allows for the exploration of relationships between Netflix's stock performance and its content distribution and subscription dynamics. The resulting dataset enables stakeholders to gain insights into how the stock market reacts to different content strategies and subscription models across various countries.

In the reporting phase, Power BI can be leveraged to create three distinct reports. The first report would focus on stock price prediction, providing visualizations of stock prices over the specified period and potentially employing predictive models for future trends. The second report would delve into country-wise subscription dynamics, showcasing the distribution of Netflix content, analyzing subscription costs, and highlighting trends in the total library size, TV shows, and movies across different regions. The third report, centered around the content catalog, would offer an overview of the diverse content available on Netflix, detailing its distribution across countries, and providing insights into release years, ratings, and durations of movies and TV shows.

This integrated approach, facilitated by Power BI, transforms data into actionable insights, enabling investors, traders, and analysts to make informed decisions by understanding the interplay between stock performance, content distribution, and subscription dynamics on the Netflix platform.

## Software Requirements:

- Power BI (64-bit)
- Operating System (Latest version of Windows)
- Internet browser

## Hardware Requirements:

- RAM: 4 GB or more
- Hard Disk: 10 GB free hard disk space.

## Functional Requirements:

- Data Connectivity**:** Power BI should support various data sources.
- Query and Formula Language**:** Power BI should support a robust query language (Power Query) and formula language (DAX - Data Analysis Expressions) for data manipulation and calculations.
- Data Visualization**:** Range of visualization options such as charts, graphs, tables, and maps should be provided to help users present data in a meaningful and insightful way.

## Non-Functional Requirements:

- Performance
- Scalability
- Usability

# 7. MODEL IMPLEMENTATION

## 1. Data Collection and Preparation:

- Start Gathering the relevant datasets that include information on Netflix Databases Analysis. Data sources might include country, No. of TV shows, No. of Movies, cost per month for subscription, director, genre, high, low, opening , closing prices etc.
- Clean and prepare the datasets by addressing missing values, removing duplicates, formatting data types, and ensure overall data quality and integrity.

## 2. Importing Data into Power BI:

- Open Power BI Desktop to begin the data import process.
- Click on "Get Data" and select the appropriate data source such as Excel, CSV database, etc.
- Load the datasets into Power BI.

## 3. Data Modeling:

- Create a data model by establishing relationships between different tables (if applicable), especially if you have multiple datasets. This step ensures a coherent framework for subsequent visualization.

## 4. Visualization Creation:

- Craft visualizations by selecting different chart types (line charts, bar charts, slicer, maps etc.) based on the analysis requirements and specific analytical goals.
- Drag and drop fields from the dataset into the visualizations section to create visuals, generating the meaningful visuals that conveys insights.

## 5. Dashboard Creation:

- Arrange the visualizations on different report pages to create a coherent and informative dashboard.
- Add titles, legends, and any necessary text boxes to provide context and explanatory text for each visualization.

## 6. Data Analysis and Insights:

- Analyze the visualizations to identify trends, correlations, or patterns.

# MODULES DESCRIPTION:

Embarking on the initial phase of our project, we set out to unravel the intricate tapestry of insights residing within Netflix's vast ecosystem. With a steadfast commitment to precision, we harnessed the power of Power BI, a robust business intelligence tool, to conduct a thorough exploration of diverse data sources. This journey culminated in the creation of three specialized reports, each tailored to meet the unique needs of key client profiles. The first report, a Netflix Stock Market Analysis dissects historical stock trends and financial metrics for strategic decision-making. The second, delves into Movies and TV Shows Analysis, optimizing content strategies based on branch-wise performance. Lastly, our Subscription Fee Analysis module, navigates the complex realm of fees, aiding in meticulous financial planning. These reports, intricately woven with insights, reflect not only our dedication to data-driven decision-making but also the powerful capabilities of Power BI in shaping a comprehensive understanding of our project's multifaceted landscape.

## Netflix Stock Market Analysis

This module focuses on a comprehensive analysis of Netflix's stock market performance. We meticulously gather and analyze historical stock data, incorporating metrics such as daily closing prices, volume, and trends over time. The report provides the Investors with actionable insights into market trends, stock fluctuations, and key financial indicators. Visualizations like line charts and candlestick charts are employed to deliver a clear understanding of Netflix's market position, aiding strategic decision-making in the sales domain.

Key Components:

- Historical Stock Prices
- Daily Opening Prices
- Daily Closing Prices
- Volume Trends
- Market Trends Over Time
- Interactive Charts for Granular Analysis

## Movies and TV Shows Analysis

This module, overseen by the Sales Manager, is dedicated to the analysis of Netflix's vast content library. We delve into the performance of each branch, dissecting genres, ratings, and release dates. The report presents a detailed overview of content trends, viewer preferences, and areas for content

optimization. Utilizing bar charts, pie charts, and tables, the Marketing Manager gains valuable insights into content strategy, audience engagement, and overall content performance.

Key Components:

- Content Genres Analysis
- Viewer Ratings Breakdown
- Release Date Trends
- Content Performance Metrics
- Branch-wise Performance Comparison
- Interactive Visualizations for Content Strategy Optimization

## Subscription Fee Across CountriesAnalysis

This module, curated for the Financial Advisor, delves into the intricate world of taxes on Netflix sales. Through meticulous analysis, we provide insights into fee implications, enabling precise financial planning and compliance. The report includes information on subscription fees for each packages across countries and trends over time. Utilizing maps, tables, and charts, the client gains a comprehensive understanding of the tax landscape, supporting informed financial decisions.

Key Components:

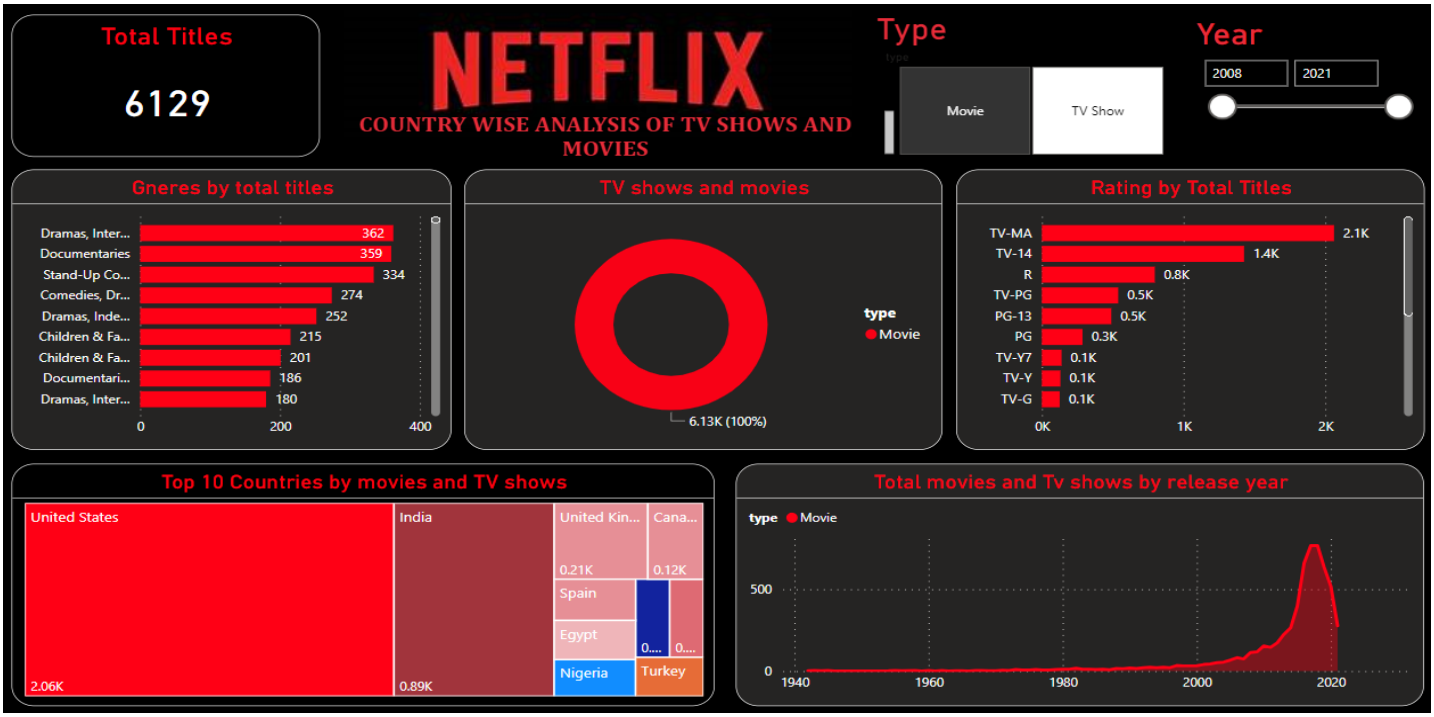
- Trend in Fee
- Geographical Fee Distribution
- Financial Metrics for Planning
- Interactive Elements for Detailed Exploration

Each module is designed to cater to the specific needs of the respective clients, ensuring that the reports provide targeted insights aligned with their unique objectives and responsibilities. Together, these modules contribute to a holistic understanding of the diverse dimensions of our project, empowering decision-makers with actionable intelligence.

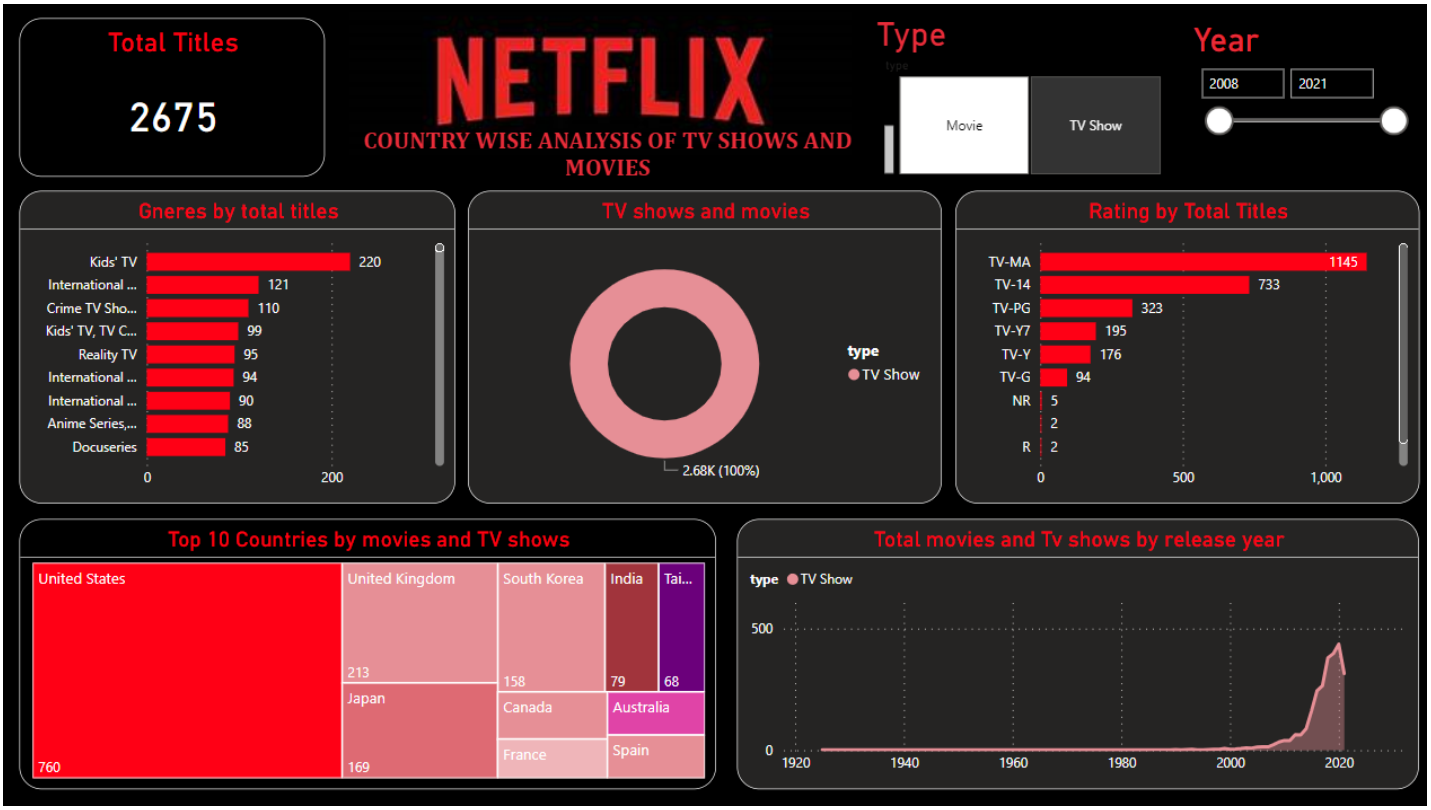
# 8. RESULTS

## Q1. Report for Country Wise Analysis of Type of Content

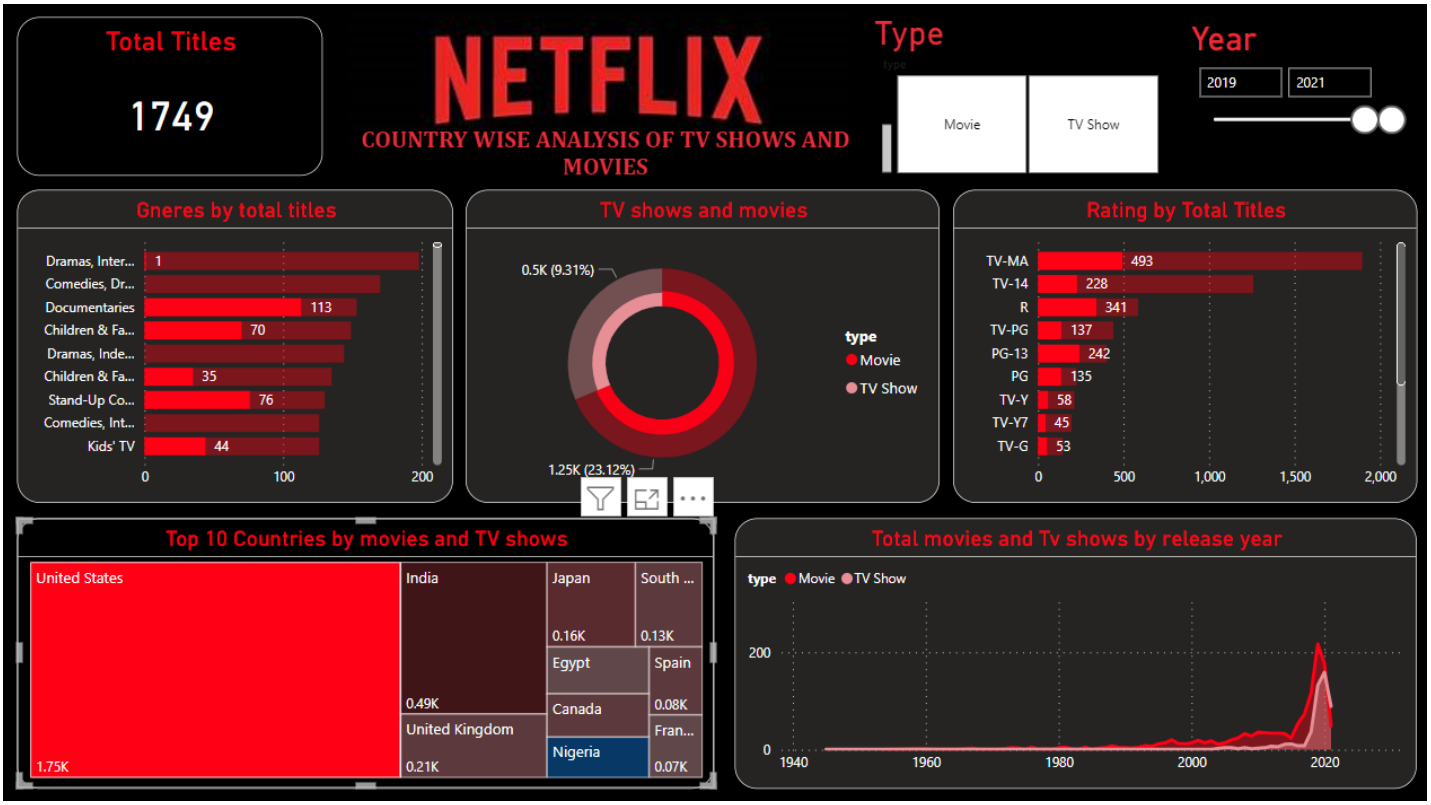
### Visual for Analysis of movies:




### Visual for Analysis of shows:

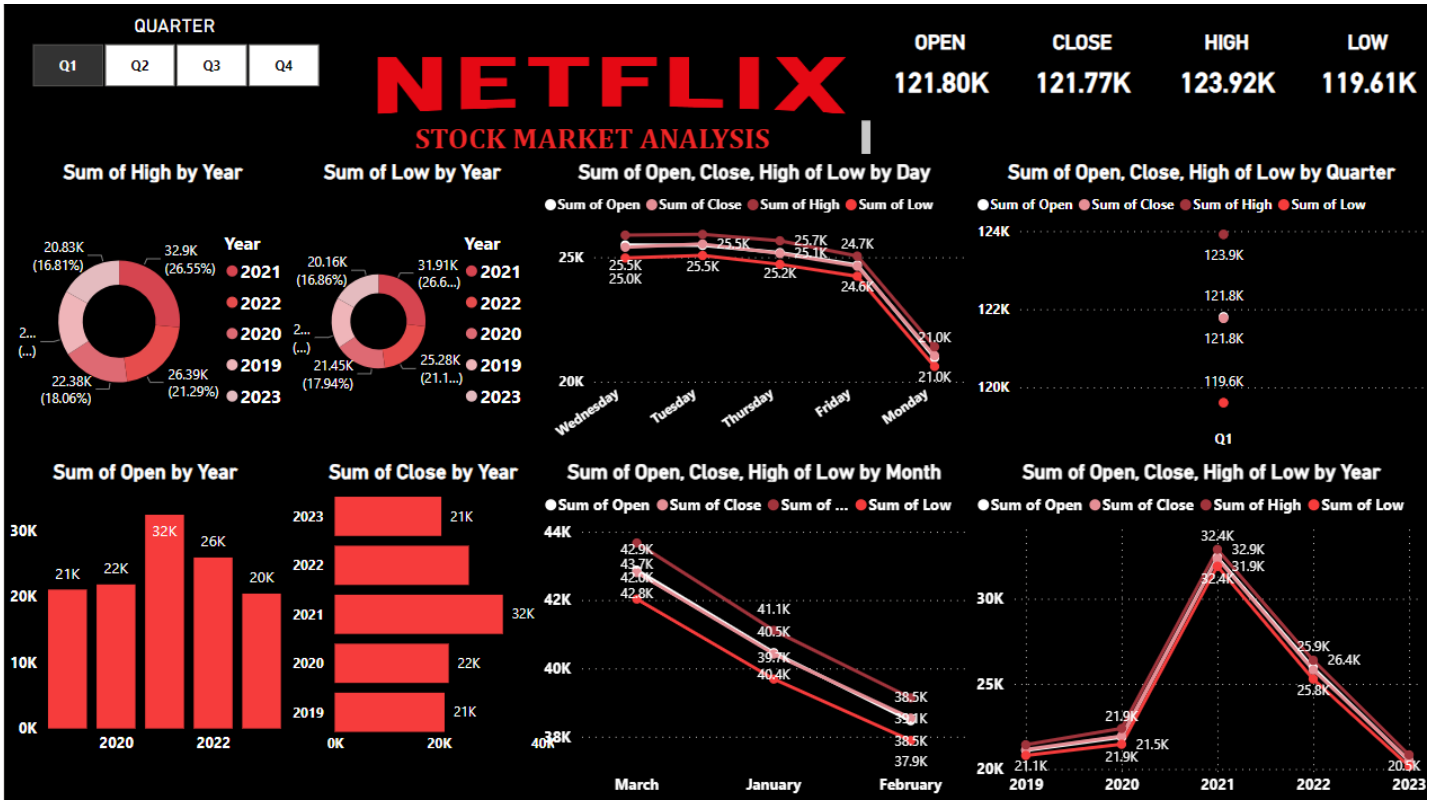


**Visual for Analysis of tv shows and movies between the year 2019-2021 in united states:**

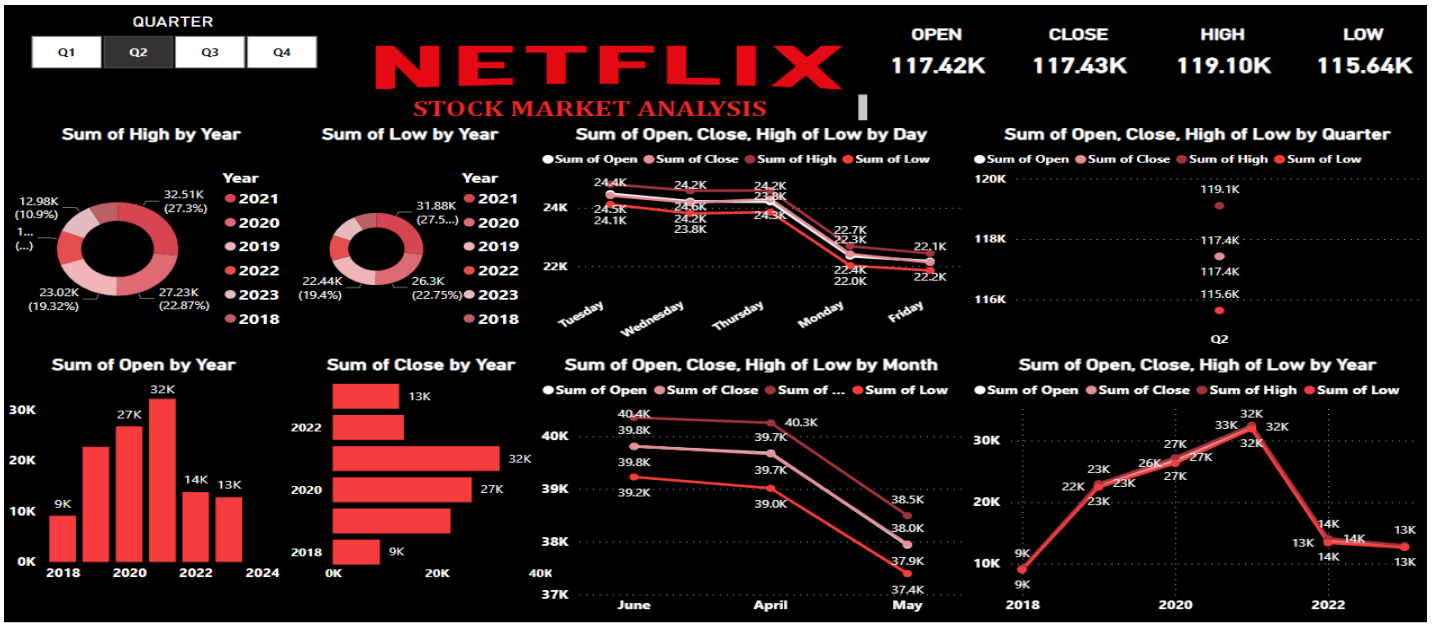


## Q2. Reports for Trends in Stock Market Valuation of Netflix

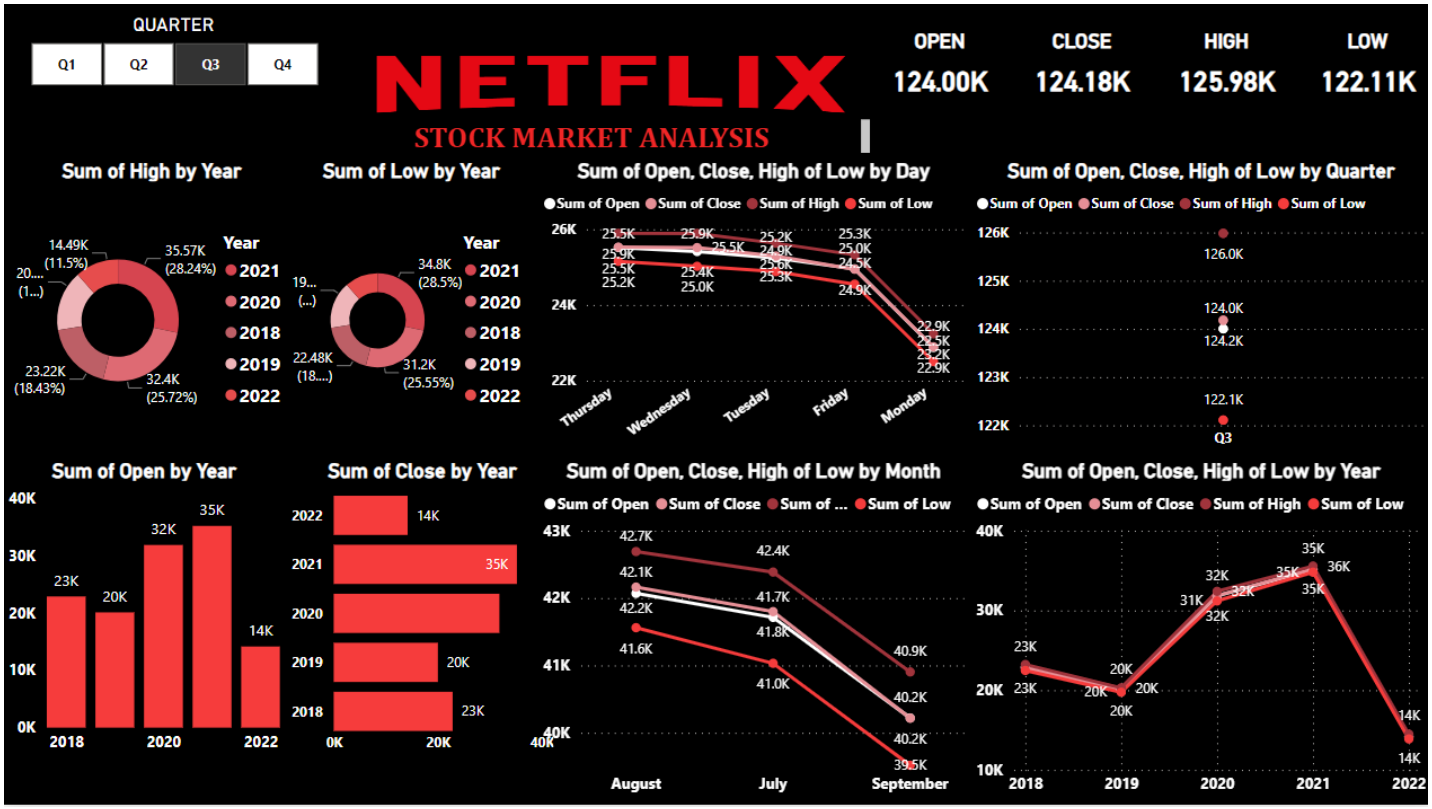
### Visual for stock market analysis in first quartile




### Visual for stock market analysis in Second quartile:

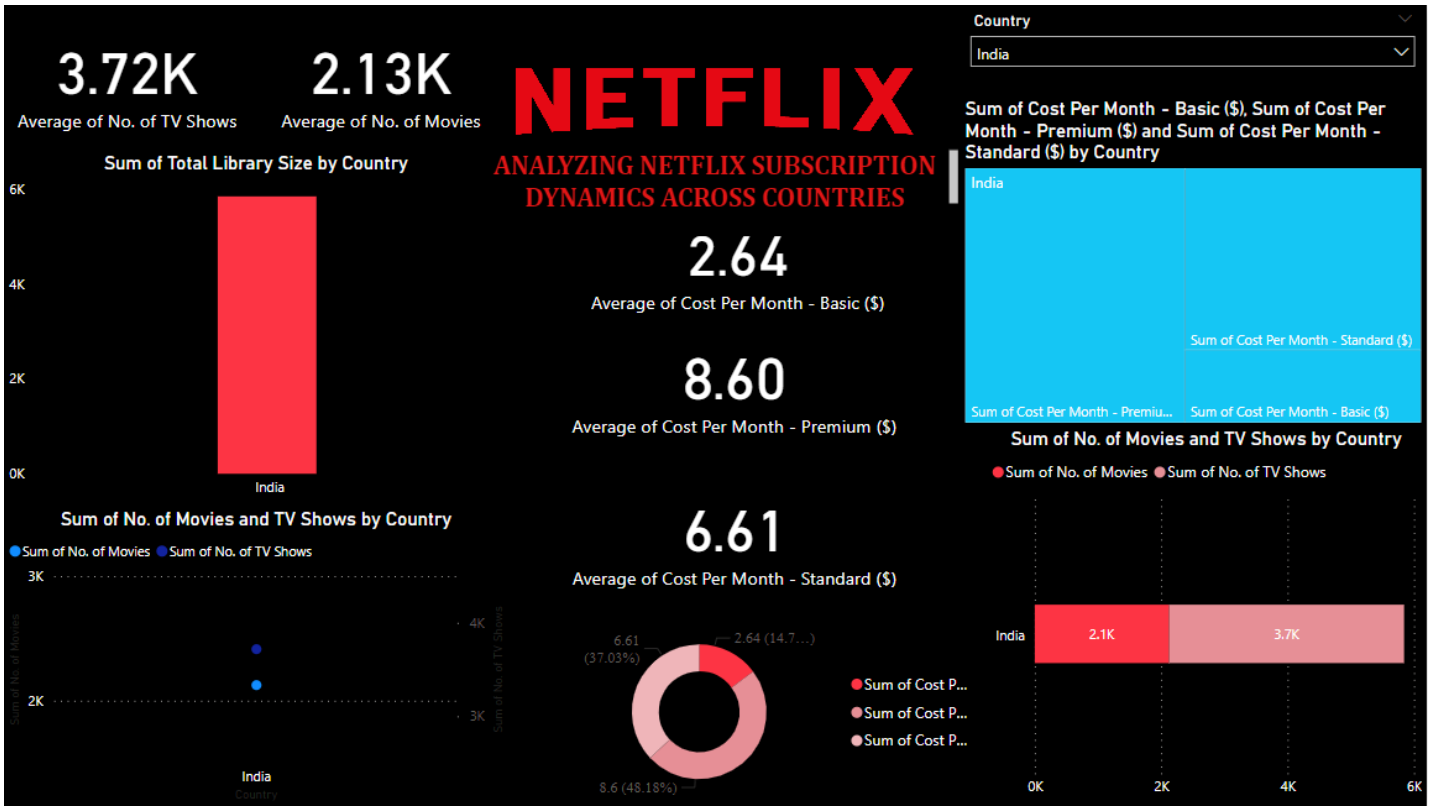


## Visual for stock market analysis in Third quartile:

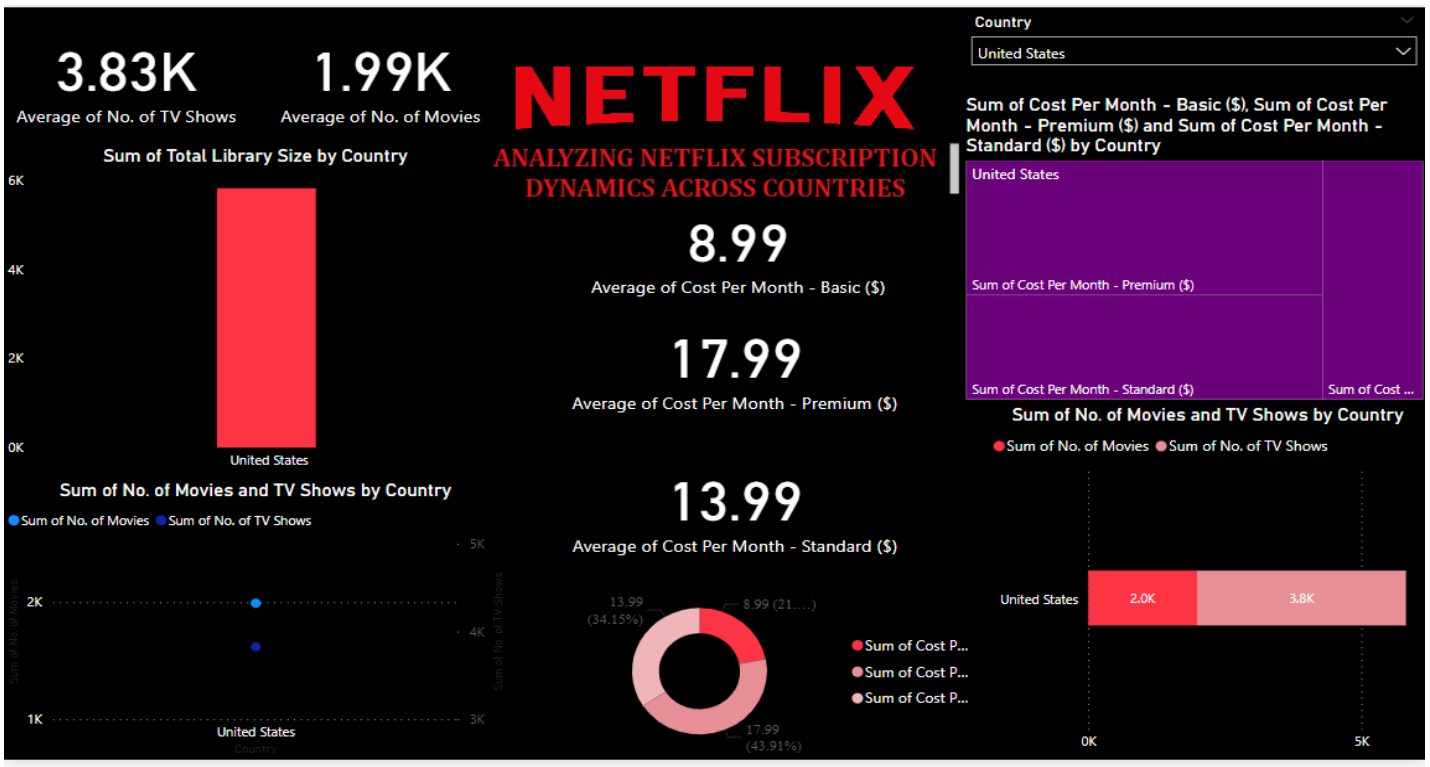


## Q3. Analysis of Netflix Subscription Dynamics across Countries

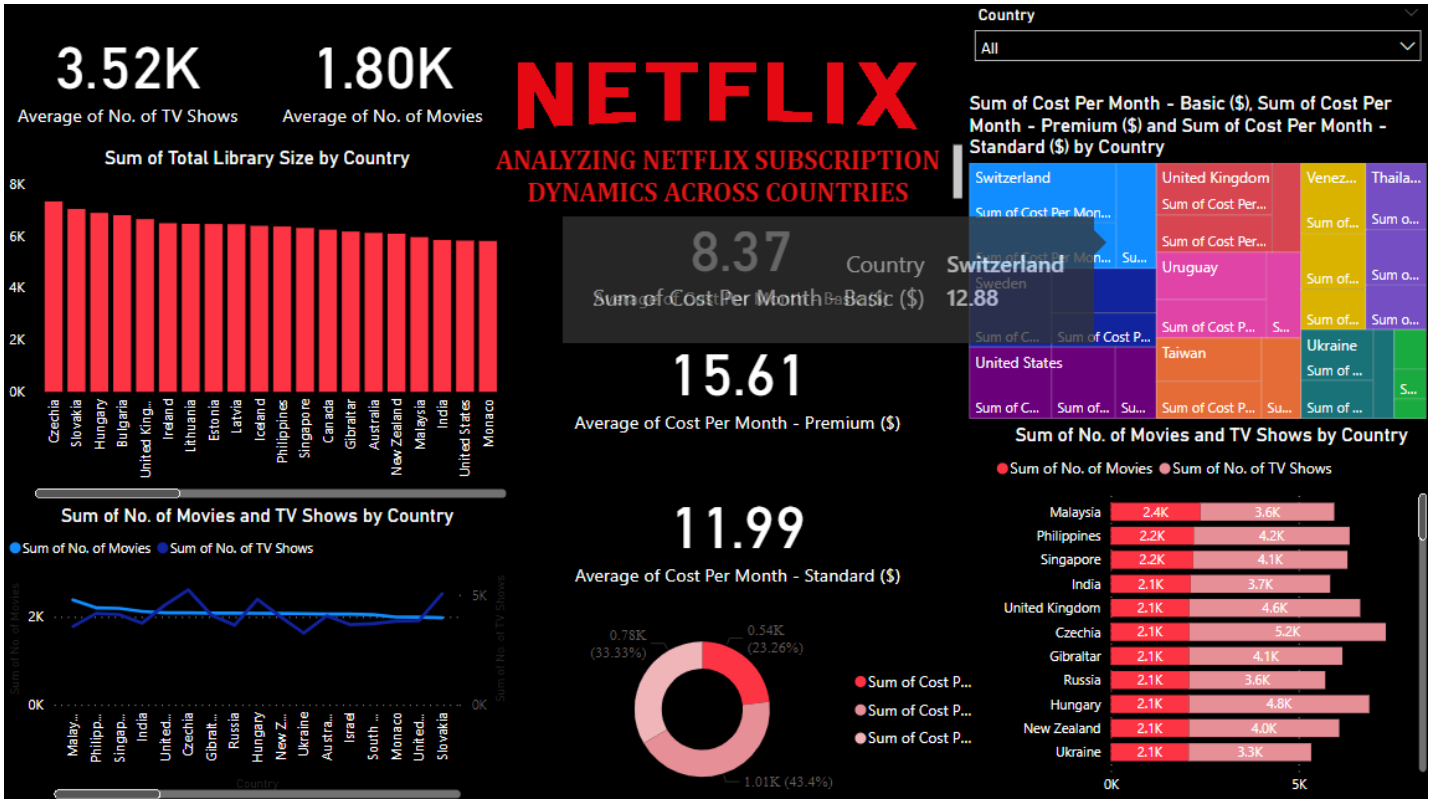
## Visual of Netflix subscription Dynamics in India:




## Visual of Netflix subscription Dynamics in United States:



## The Sum Of Cost Per Month -Basic in Switzerland:



# 9. CONCLUSION

In conclusion, our project on the analysis of Netflix has successfully provided valuable insights for investors, employees, and stakeholders. By leveraging Power BI, we have created three comprehensive reports: Country-Wise Analysis of TV Shows and Movies (Genres), Analyzing Netflix Subscription Dynamics Across Countries, and Stock Market Analysis.

The Country-Wise Analysis report sheds light on genre preferences, ratings, and release trends across the top 10 countries, aiding investors and Netflix in strategic content planning. The Subscription Dynamics report offers a detailed view of the library size, content count, and subscription costs, enabling strategic decision-making for market expansion and service optimization. Finally, the Stock Market Analysis report provides a nuanced understanding of Netflix's stock trends, helping investors make informed decisions.

As we move forward, the insights derived from this project will serve as a valuable resource for guiding Netflix's growth strategy and informing investment decisions. The project exemplifies the power of data visualization and analytics in transforming raw data into actionable intelligence, and the utilization of Power BI has been instrumental in achieving this goal.

# 10. REFERENCES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