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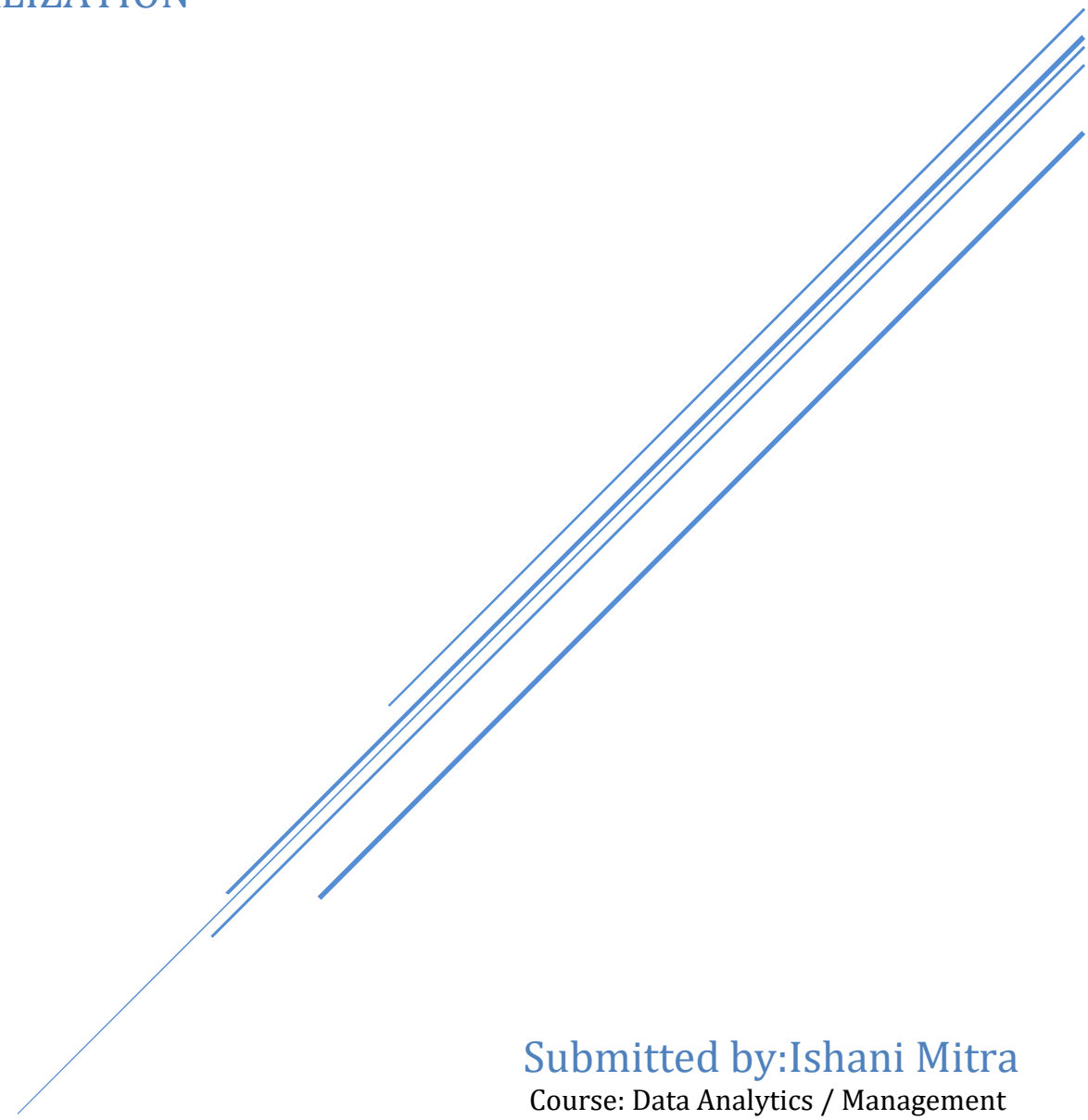

Submitted by:Ishani Mitra

Course: Data Analytics / Management

Declaration

I hereby declare that the project titled 'Netflix Data Analysis Using Python' is my original work and has not been submitted previously to any other institution or university for any degree or diploma. All sources of information used in this project have been duly acknowledged.

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1. Introduction

The rapid growth of online streaming platforms has transformed the way audiences consume entertainment content. Netflix has emerged as one of the most dominant streaming services globally, offering a diverse range of movies and television shows across multiple languages and genres. With the increasing competition in the digital streaming industry, analyzing content trends and user preferences has become crucial. This project focuses on performing a comprehensive data analysis of Netflix titles dataset to identify patterns in content distribution, genre popularity, country-wise production, and yearly release trends. The insights obtained from this analysis can help in understanding content strategy and audience targeting used by streaming platforms.

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2. Objectives of the Study

The main objective of this study is to analyze Netflix dataset to extract meaningful insights using data analytics techniques. The project aims to explore the proportion of movies and TV shows available on the platform, identify popular genres, examine country-wise contributions, and analyze growth trends over the years. The analysis also focuses on understanding rating classifications and duration patterns to determine audience targeting and content strategy. Through visualizations and statistical summaries, the project provides a clear understanding of Netflix's content library evolution and distribution.

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3. Overview of Netflix

Netflix is a subscription-based streaming service that allows users to watch movies and TV shows without advertisements on an internet-connected device. Founded in 1997, Netflix initially started as a DVD rental service and later transformed into a global streaming giant. Today, Netflix operates in more than 190 countries and offers a wide variety of content including original productions, documentaries, anime, and regional content. The platform continuously invests in original content creation and licensing agreements to attract and retain subscribers. Analyzing its content database provides valuable insights into its global content acquisition and distribution strategy.

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4. Dataset Description

The dataset used in this project contains detailed information about Netflix titles such as show ID, type of content (Movie or TV Show), title, director, cast, country, date added, release year, rating, duration, genre classification, and description. This structured dataset enables comprehensive exploratory data analysis and visualization. Each record represents a unique title available on Netflix. The dataset helps in understanding the composition of content library and identifying trends related to genre, country of origin, and time-based content addition patterns.

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5. Tools and Technologies Used

Various tools and technologies were utilized to perform this analysis effectively. Python programming language was used for data processing and analysis due to its powerful libraries such as Pandas and NumPy. Matplotlib and Seaborn libraries were used for creating visualizations like bar charts, pie charts, and line graphs. Visual Studio Code / Jupyter Notebook was used as the development environment. Microsoft Word was used for documentation, and Power BI can be used optionally for creating interactive dashboards and visual reports.

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6. Methodology

The methodology followed in this project includes several sequential steps. First, the dataset was collected and loaded into the Python environment. Next, data cleaning and preprocessing steps were applied to handle missing values and convert columns into appropriate formats. After preprocessing, exploratory data analysis was conducted to understand data structure and distribution. Various charts and graphs were created to visualize trends and patterns. Finally, insights were interpreted and documented in the report.

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7. Data Cleaning and Preprocessing

Data cleaning and preprocessing is an essential stage in any data analysis project. The dataset contained missing values in columns such as director, cast, and country. These missing values were handled by replacing them with 'Unknown' or removing incomplete records where necessary. The date_added column was converted into datetime format to extract year and month information. Duplicate records were checked and removed to ensure data integrity and reliability of analysis.

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8. Exploratory Data Analysis

Exploratory Data Analysis (EDA) was performed to examine the characteristics and distribution of data. The number of movies and TV shows available on Netflix was calculated to understand content proportion. Genre-wise analysis was performed to identify the most frequent categories. Country-wise content production was analyzed to determine major contributors. Release year analysis helped in identifying growth trends and expansion of Netflix content over time.

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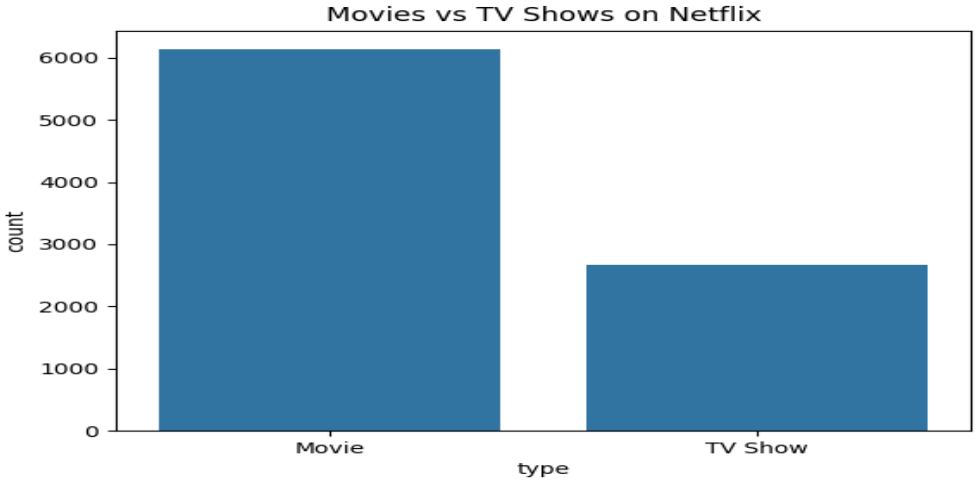

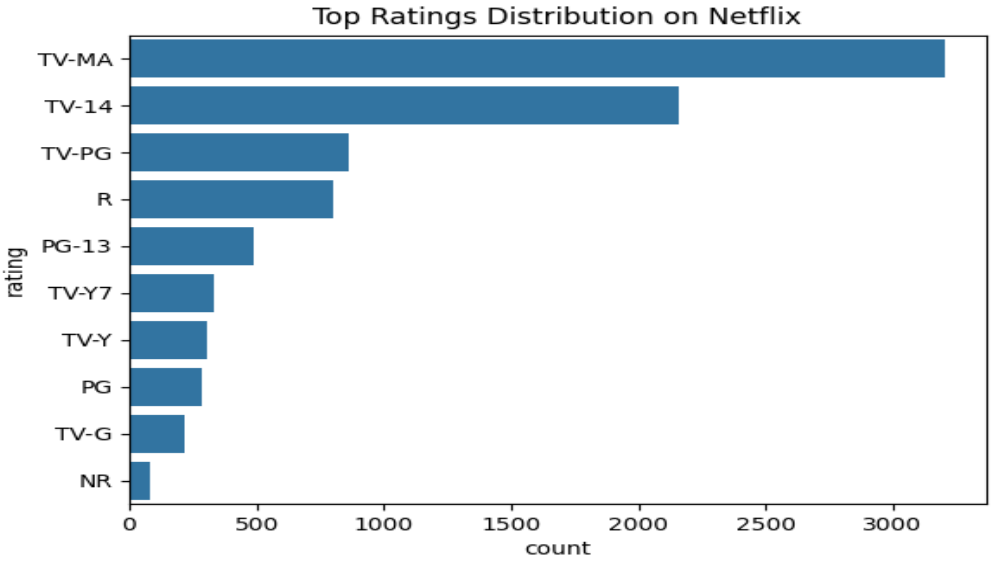

9. Data Visualization and Interpretation

Data visualization plays a crucial role in presenting analytical insights effectively. Bar charts were used to compare the number of movies and TV shows. Pie charts illustrated rating distribution and audience categories. Line graphs displayed the growth of content over years. Country-wise bar graphs highlighted the top content-producing nations. These visualizations simplified complex data patterns and enhanced interpretability of results.

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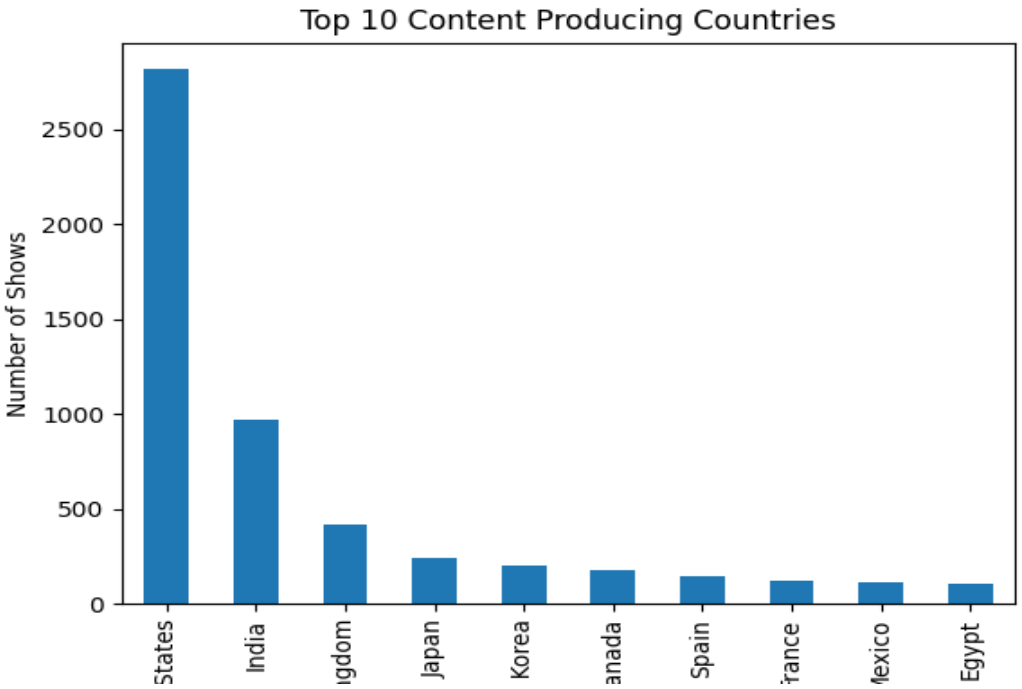

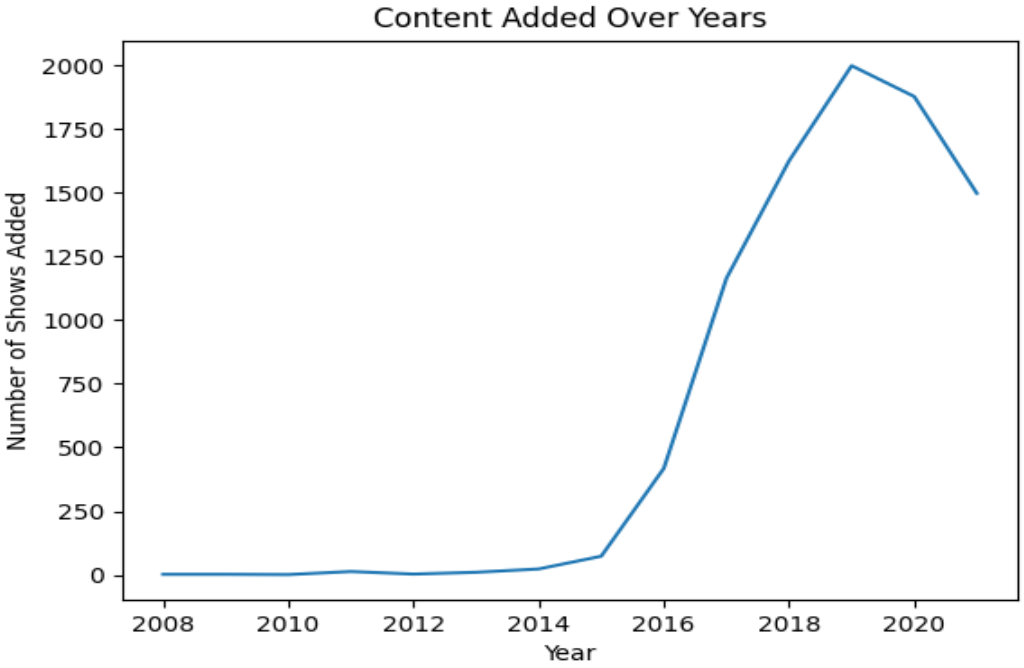

10. Results and Findings

The analysis revealed several important insights about Netflix content library. Movies were found to dominate the platform compared to TV shows. Drama, Comedy, and Documentary emerged as the most popular genres. The United States contributed the highest number of titles, followed by India and the United Kingdom. A significant increase in content addition was observed after 2015, indicating Netflix's rapid global expansion and aggressive content acquisition strategy.

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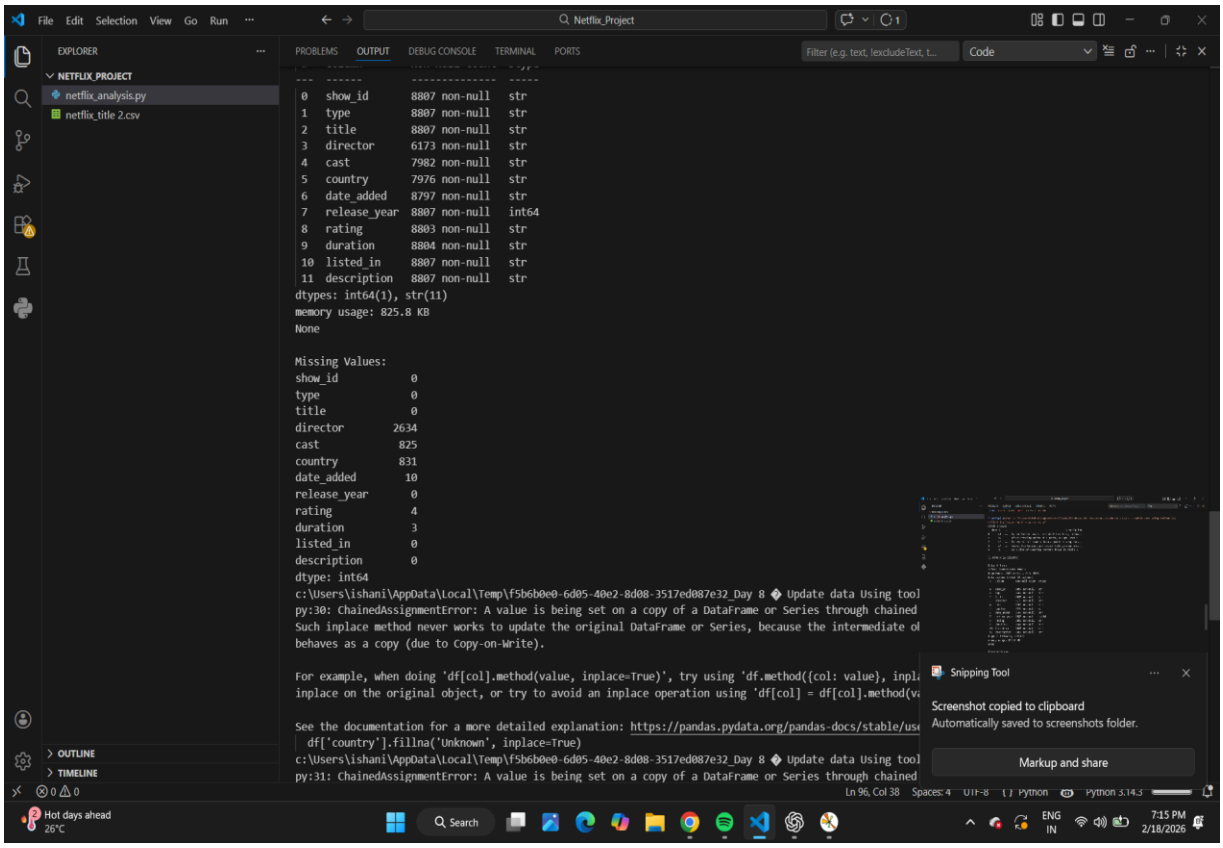

11. Discussion

The findings of this project highlight Netflix's focus on diverse and global content strategy. The dominance of movies suggests higher investment in film acquisitions and original productions. Genre popularity reflects audience preference for drama and entertainment-based content. The rise in content addition over recent years aligns with Netflix's expansion into international markets and increased competition with other streaming platforms. Such insights are valuable for content planning and recommendation system development.

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12. Conclusion

In conclusion, the Netflix data analysis project successfully explored the dataset and extracted meaningful insights related to content distribution, genre trends, and release patterns. The project demonstrated the importance of data analytics in understanding digital streaming platforms. The insights obtained can support strategic decision-making, content acquisition planning, and user engagement analysis. Overall, this project showcases practical application of data analytics techniques in the entertainment industry domain.

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13. Limitations

Despite comprehensive analysis, the project has certain limitations. Some records contained missing or incomplete information which may affect accuracy of results. Genre column included multiple categories that required complex parsing techniques. Additionally, the dataset may not include the most recent updates from Netflix library, limiting real-time relevance of insights.

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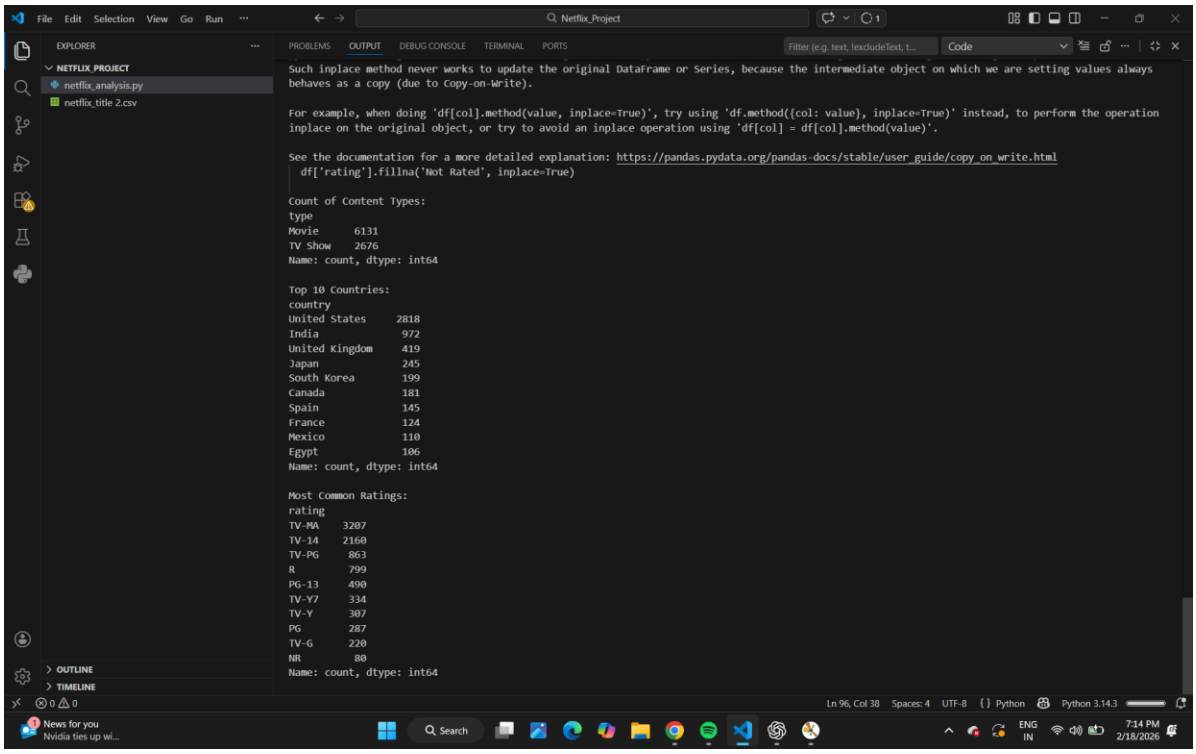

14. Future Scope

Future enhancements can be made by integrating machine learning techniques to build a recommendation system based on user preferences and genre patterns. Sentiment analysis can be performed on title descriptions to understand audience engagement. Interactive dashboards can be developed using Power BI for dynamic visualization. Predictive models can also be created to forecast future content trends on streaming platforms.

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15. References

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