



Industrial Project Report

Submitted in partial fulfillment of the degree of

B. tech in Electrical Engineering

By

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*THIS IS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF
AFFILIATED TO*

Maulana Abul Kalam Azad University of Technology



**Under the supervision of
Mr. Ripam Kundu
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Department of Electrical Engineering

I hereby forward the documentation prepared under my supervision by Sir **Ripam Kundu** entitled **Siliguri Institute Of Technology** to be accepted as fulfillment of the requirement for the Degree of Bachelor of Technology in Electrical Engineering, **Siliguri Institute Of Technology** affiliated to **Maulana Abul Kalam Azad University of Technology (MAKAUT)**.

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Certificate of Approval

The foregoing project is hereby approved as a creditable study for the B.Tech in Electrical Engineering presented in a manner of satisfactory to warrant its acceptance as a prerequisite to the degree for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorsed or approved any statement made, opinion expressed or conclusion therein but approve this project only for the purpose for which it is submitted.

Final Examination for
Evaluation of the Project

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Signature of Examiners

ABSTRACT

A fundamental understanding of Netflix is necessary for doing a SWOT analysis. Netflix has 193 million paying members, making it one of the most popular streaming service providers. It is presently available in over 190 countries and is widely regarded as one of the most popular streaming services on the planet. It provides clients with a streaming service that allows them to watch movies, dramas, series, and original programs without commercial interruptions.

Netflix's SWOT analysis examines the company's strengths and weaknesses, as well as its potential growth strategy and market possibilities and threats. It has huge benefits in becoming the best in the world's leading streaming business. The corporation can make use of the opportunity to counteract market risks and maintain its growth.

ACKNOWLEDGEMENT

It is a great pleasure for me to acknowledge the assistance and participation of a large number of individuals in this attempt. Our project report has been structured under the valued suggestion, support, and guidance of **Mr. Ripam Kundu**. Under his guidance, we have accomplished the challenging task in a very short time. Finally, we express our sincere thankfulness to our family members for inspiring me all throughout and always encouraging us.

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INTRODUCTION

Netflix is one of the most popular digital streaming media service providers today. Netflix provides streaming services for movies and tv shows from various countries in the world. As a digital media with many users, Netflix also has a very large amount of data. In this article, I will perform data analysis using Netflix data. Netflix data analysis will be performed using several python libraries.

The entertainment industry of streaming services has a huge portion of the market share of customers. This Netflix SWOT analysis will break down its competitive advantage. Netflix has a strong presence in the streaming service industry and has several advantages when compared to its competitors. In terms of strengths, Netflix has a wide variety of content, a strong customer base, and a strong brand. Additionally, with the release of its own content, Netflix has a distinct advantage over competitors in terms of originality and fresh content.

Netflix is an American content platform and production company that mainly focuses on subscription-based streaming services. It was founded in 1997 by Marc Randolph and Reed Hastings in Scotts Valley, California. It provides its services all over the world except mainland China, Crimea, North Korea, and Syria. Its headquarters are in Los Gatos, California. A Netflix SWOT Analysis is a proven management framework that enables Netflix to benchmark its business & performance as compared to the competitors and industry.

WHAT WE USED

○ Python:-

Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.

It is used for:

- web development (server-side),
- software development,
- mathematics, • system scripting.

○ Jupyter notebook

○ OpenCV: -

OpenCV is a cross-platform library using which we can develop realtime **computer vision applications**. It mainly focuses on image processing, video capture, and analysis including features like face detection and object detection. In this tutorial, we explain how you can use OpenCV in your applications.

○ **PANDAS LIBRARY:-** **pandas** is a software library written for the Python programming language for data manipulation and analysis.

○ **NUMPY:- NumPy** is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.

○ BAR PLOT –

MATPLOTLIB :-

Matplotlib is a maths library widely used for data exploration and visualization. It is simple and provides us with the API to access functions like the ones used in MATLAB.

We import the library as plt and use:

```
plt.bar(x, height, width, bottom, align)
```

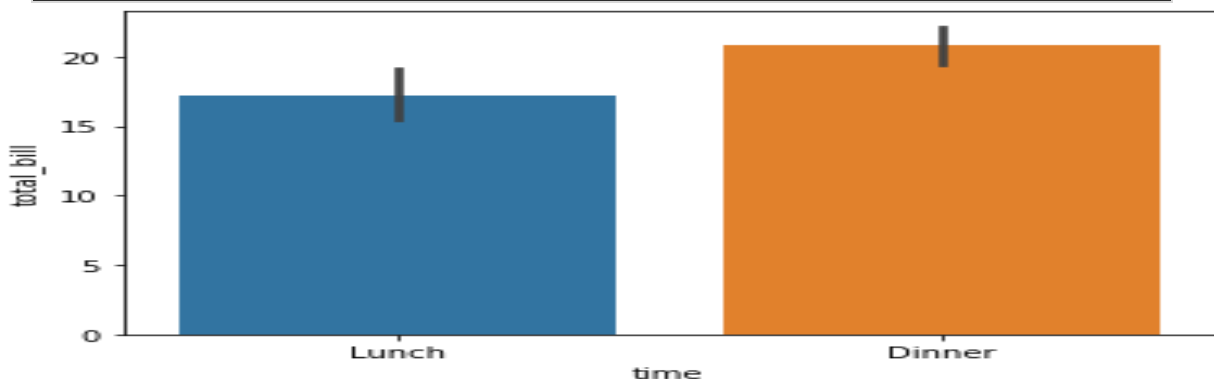
Seaborn:-

Seaborn is also a visualization library based on matplotlib and is widely used for presenting data. We can import the library as sns and use the following syntax:

```
seaborn.barplot(x=' ', y=' ',data=df)
```

The code to create a bar chart in seaborn:

```
import seaborn as sns import
matplotlib.pyplot as plt df =
sns.load_dataset('tips')
sns.barplot(x = 'time',y = 'total_bill',data = df) plt.show()
```



FUNCTIONALITY Working principle

This Netflix dataset has information about the tv shows and movies that are available on Netflix.

1. at first, we import our dataset.

2. then we have used pandas library

- import pandas as pd

- And now we import our dataset into file type.

-The dataset is loaded using the pandas library and then named netflix.

```
In [2]: data = pd.read_csv("Data path.csv")
```

FUNCTIONAL REQUIREMENTS OF THE SYSTEM

SOFTWARE:

- Operating System
- Windows OS 11
- Internet Explorer 7
- Google Chrome

WEB BROWSER:

DATASET OVERVIEW

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localhost:8888/notebooks/Netflix%20analysis%20data%20set.ipynb

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In [1]: `import pandas as pd
data=pd.read_csv(r"C:\Users\shuva\Downloads\netflix.csv")`

In [2]: `#now, if you want to look our data
data`

Out[2]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Act...
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA	1 Season	TV Dramas, TV Horror, TV Mysteries
3	s14	Movie	Confessions of an Invisible Girl	Bruno Garotti	Brazil	9/22/2021	2021	TV-PG	91 min	Children & Family Movies, Comedies
4	s8	Movie	Sankofa	Haile Gerima	United States	9/24/2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies
...
8785	s8797	TV Show	Yunus Emre	Not Given	Turkey	1/17/2017	2016	TV-PG	2 Seasons	International TV Shows, TV Dramas
8786	s8798	TV Show	Zak Storm	Not Given	United States	9/13/2018	2016	TV-Y7	3 Seasons	Kids' TV
8787	s8801	TV Show	Zindagi Gulzar Hai	Not Given	Pakistan	12/15/2016	2012	TV-PG	1 Season	International TV Shows, Romantic TV Shows, TV ...
8788	s8784	TV Show	Yoko	Not Given	Pakistan	6/23/2018	2016	TV-Y	1 Season	Kids' TV
8789	s8786	TV Show	YOM	Not Given	Pakistan	6/7/2018	2016	TV-Y7	1 Season	Kids' TV

8790 rows x 10 columns

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In [3]: `#now, we try to see a top recordes
data.head()`

Out[3]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Act...
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA	1 Season	TV Dramas, TV Horror, TV Mysteries
3	s14	Movie	Confessions of an Invisible Girl	Bruno Garotti	Brazil	9/22/2021	2021	TV-PG	91 min	Children & Family Movies, Comedies
4	s8	Movie	Sankofa	Haile Gerima	United States	9/24/2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies

In [4]: `#now, we try to see a botton recordes
data.tail()`

Out[4]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
8785	s8797	TV Show	Yunus Emre	Not Given	Turkey	1/17/2017	2016	TV-PG	2 Seasons	International TV Shows, TV Dramas
8786	s8798	TV Show	Zak Storm	Not Given	United States	9/13/2018	2016	TV-Y7	3 Seasons	Kids' TV
8787	s8801	TV Show	Zindagi Gulzar Hai	Not Given	Pakistan	12/15/2016	2012	TV-PG	1 Season	International TV Shows, Romantic TV Shows, TV ...
8788	s8784	TV Show	Yoko	Not Given	Pakistan	6/23/2018	2016	TV-Y	1 Season	Kids' TV
8789	s8786	TV Show	YOM	Not Given	Pakistan	6/7/2018	2016	TV-Y7	1 Season	Kids' TV

In [5]: `#now, we try to see the no. of row & column
data.shape`

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In [5]: `#now, we try to see the no. of row & column`
`data.shape`
Out[5]: `(8790, 10)`

In [6]: `# if, to see no. of total values (elements) in the data set`
`data.size`
Out[6]: `87900`

In [7]: `# to show each column name`
`data.columns`
Out[7]: `Index(['show_id', 'type', 'title', 'director', 'country', 'date_added', 'release_year', 'rating', 'duration', 'listed_in'], dtype='object')`

In [8]: `# to show the data type of each column`
`data.dtypes`
Out[8]:

show_id	object
type	object
title	object
director	object
country	object
date_added	object
release_year	int64
rating	object
duration	object
listed_in	object
dtype:	object

In [9]: `# to shows all the information of all the data set at ones. ex=index, column, datatype etc.`
`data.info()`
`<class 'pandas.core.frame.DataFrame'>`

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In [9]: `# to shows all the information of all the data set at ones. ex=index, column, datatype etc.`
`data.info()`
`<class 'pandas.core.frame.DataFrame'>`
RangeIndex: 8790 entries, 0 to 8789
Data columns (total 10 columns):
column Non-Null Count Dtype

0 show_id 8790 non-null object
1 type 8790 non-null object
2 title 8790 non-null object
3 director 8790 non-null object
4 country 8790 non-null object
5 date_added 8790 non-null object
6 release_year 8790 non-null int64
7 rating 8790 non-null object
8 duration 8790 non-null object
9 listed_in 8790 non-null object
dtypes: int64(1), object(9)
memory usage: 686.8+ KB

In [10]: `# to find the duplicate record`
`data.duplicated()`
Out[10]:

0	False
1	False
2	False
3	False
4	False
...	...
8785	False
8786	False
8787	False
8788	False
8789	False

Length: 8790, dtype: bool

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In [11]: `#so,if we want see in required formate
data[data.duplicated()]`

Out[11]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
	0	False	False	False	False	False	False	False	False	False
	1	False	False	False	False	False	False	False	False	False
	2	False	False	False	False	False	False	False	False	False
	3	False	False	False	False	False	False	False	False	False
	4	False	False	False	False	False	False	False	False	False
...
	8785	False	False	False	False	False	False	False	False	False
	8786	False	False	False	False	False	False	False	False	False
	8787	False	False	False	False	False	False	False	False	False
	8788	False	False	False	False	False	False	False	False	False
	8789	False	False	False	False	False	False	False	False	False

8790 rows x 10 columns

In [12]: `#now,if we want to check there is any null value present in any column
data.isnull()`

Out[12]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
0	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False
...
8785	False	False	False	False	False	False	False	False	False	False
8786	False	False	False	False	False	False	False	False	False	False
8787	False	False	False	False	False	False	False	False	False	False
8788	False	False	False	False	False	False	False	False	False	False
8789	False	False	False	False	False	False	False	False	False	False

8790 rows x 10 columns

In [13]: `# but, we want check how many null values are present in each column
data.isnull().sum()`

Out[13]:

	show_id	type	title	director
show_id	0			
type	0			
title	0			
director	0			

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In [13]: `# but, we want check how many null values are present in each column
data.isnull().sum()`

Out[13]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
show_id	0									
type	0									
title	0									
director	0									
country	0									
date_added	0									
release_year	0									
rating	0									
duration	0									
listed_in	0									
dtype: int64										

In [14]: `# for that we check head
data.head()`

Out[14]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Act...
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA	1 Season	TV Dramas, TV Horror, TV Mysteries
3	s14	Movie	Confessions of an Invisible Girl	Bruno Garotti	Brazil	9/22/2021	2021	TV-PG	91 min	Children & Family Movies, Comedies
4	s8	Movie	Sankofa	Haile Gerima	United States	9/24/2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies

In [15]: `# if we want to check title
data['title']`

Out[15]: 0 Dick Johnson Is Dead

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In [15]: # if we want to check title
data['title']

Out[15]:

```
0      Dick Johnson Is Dead
1      Ganglands
2      Midnight Mass
3      Confessions of an Invisible Girl
4      Sankofa
...
8785      Yunus Emre
8786      Zak Storm
8787      Zindagi Gulzar Hai
8788      Yoko
8789      YOM
Name: title, Length: 8790, dtype: object
```

In [16]: #now to show all the record of a particular item in any column
data[data['title'].isin(['Zak Storm'])]

Out[16]:

show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in
8786	s8798	TV Show	Zak Storm	Not Given	United States	9/13/2018	2016	TV-Y7 3 Seasons	Kids' TV

In [17]: # in which year highest number of the tv show & movies were releasd
at first i want to show data type
data.dtypes

Out[17]:

```
show_id      object
type         object
title        object
director     object
country      object
date_added   object
release_year  int64
rating       object
duration     object
```

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In [18]: #in this we storing release_year in date_n
data['Date_N'] = pd.to_datetime(data['release_year'])

In [19]: # then you see this teables in last there is print date_n
data.head()

Out[19]:

show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13 90 min	Documentaries	1970-01-01 00:00:00.0000002020
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA Season 1	Crime TV Shows, International TV Shows, TV Act...	1970-01-01 00:00:00.0000002021
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA Season 1	TV Dramas, TV Horror, TV Mysteries	1970-01-01 00:00:00.0000002021
3	s14	Movie	Confessions of an Invisible Girl	Bruno Garotti	Brazil	9/22/2021	2021	TV-PG 91 min	Children & Family Movies, Comedies	1970-01-01 00:00:00.0000002021
4	s8	Movie	Sankofa	Haile Gerima	United States	9/24/2021	1993	TV-MA 125 min	Dramas, Independent Movies, International Movies	1970-01-01 00:00:00.0000001993

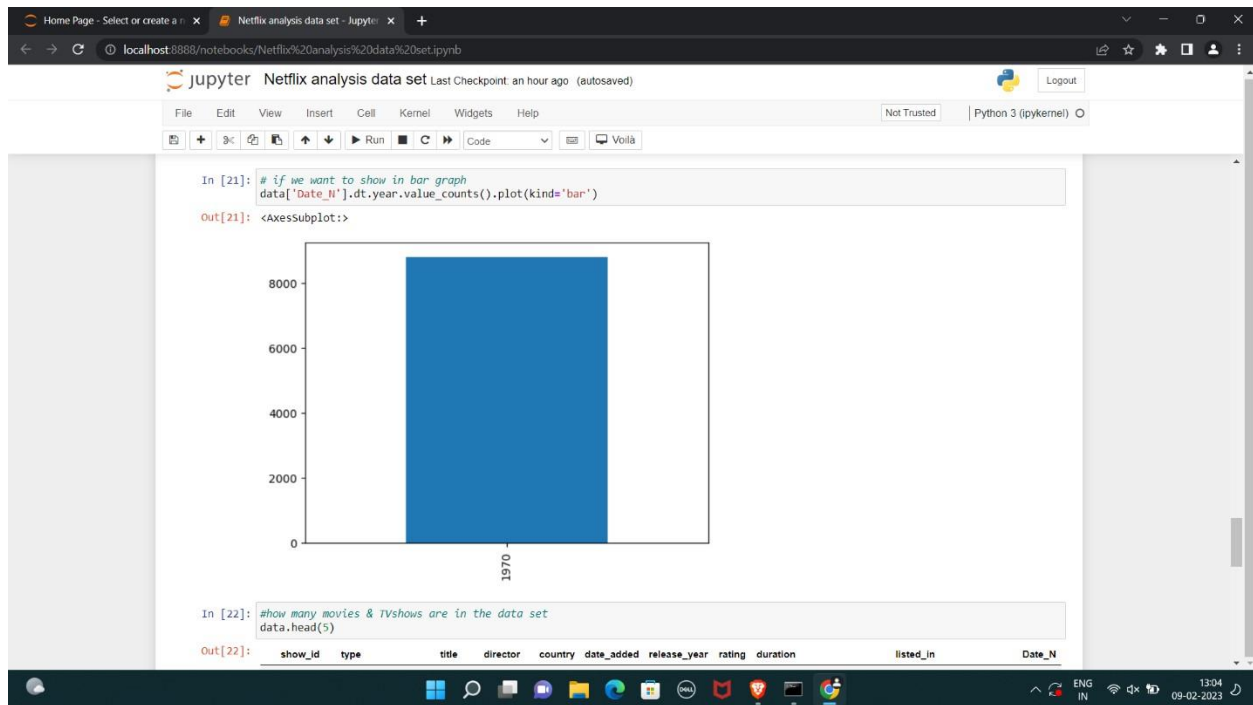
In [20]: # now, in which year highest number of the tv show & movies were releasd
data['Date_N'].dt.year.value_counts()

Out[20]:

```
1970      8790
Name: Date_N, dtype: int64
```

In [21]: # if we want to show in bar graph
data['Date_N'].dt.year.value_counts().plot(kind='bar')

Out[21]: <AxesSubplot>



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In [22]: `#show many movies & TVshows are in the data set
data.head(5)`

Out[22]:

show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.0000002020
1	s3	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Act...	1970-01-01 00:00:00.0000002021
2	s6	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA	1 Season	TV Dramas, TV Horror, TV Mysteries	1970-01-01 00:00:00.0000002021
3	s14	Confessions of an Invisible Girl	Bruno Garotti	Brazil	9/22/2021	2021	TV-PG	91 min	Children & Family Movies, Comedies	1970-01-01 00:00:00.0000002021
4	s8	Sankofa	Haile Gerima	United States	9/24/2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	1970-01-01 00:00:00.0000001993

In [23]: `#now, i will groupby all the tvshows & all the movies of the 'types' column
data.groupby('type').type.count()`

Out[23]:

```
type      6126  
Movie      6126  
TV Show   2664  
Name: type, dtype: int64
```

In [25]: `#show all the movies in year
then we look in the data
data.head()`

Out[25]:

show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.0000002020
1	s3	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Act...	1970-01-01 00:00:00.0000002021

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```
In [25]: #show all the movies in year
# then we look in the data
data.head()
```

Out[25]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.000002020
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA Season	1	Crime TV Shows, International TV Shows, TV Act...	1970-01-01 00:00:00.000002021
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA Season	1	TV Dramas, TV Horror, TV Mysteries	1970-01-01 00:00:00.000002021
3	s14	Movie	Confessions of an Invisible Girl	Bruno Garotti	Brazil	9/22/2021	2021	TV-PG	91 min	Children & Family Movies, Comedies	1970-01-01 00:00:00.000002021
4	s8	Movie	Sankofa	Haile Gerima	United States	9/24/2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	1970-01-01 00:00:00.000001993

```
In [32]: # for that we use slicing operator, to show only three year record (to filtering)
data.iloc[:3]
```

Out[32]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.000002020
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA Season	1	Crime TV Shows, International TV Shows, TV Act...	1970-01-01 00:00:00.000002021
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA Season	1	TV Dramas, TV Horror, TV Mysteries	1970-01-01 00:00:00.000002021

```
In [34]: #and for one year record then we write '1'
data.iloc[:1]
```

Out[34]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.000002020

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```
In [32]: # for that we use slicing operator, to show only three year record (to filtering)
data.iloc[:3]
```

Out[32]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.000002020
1	s3	TV Show	Ganglands	Julien Leclercq	France	9/24/2021	2021	TV-MA Season	1	Crime TV Shows, International TV Shows, TV Act...	1970-01-01 00:00:00.000002021
2	s6	TV Show	Midnight Mass	Mike Flanagan	United States	9/24/2021	2021	TV-MA Season	1	TV Dramas, TV Horror, TV Mysteries	1970-01-01 00:00:00.000002021

```
In [34]: #and for one year record then we write '1'
data.iloc[:1]
```

Out[34]:

	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	Date_N
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	9/25/2021	2020	PG-13	90 min	Documentaries	1970-01-01 00:00:00.000002020

```
In [ ]:
```

CONTRIBUTION BY MEMBERS OF THE GROUP

Contribution of Members of group NO. 5 : there were 2 members in the group ;

- 1. Shuvajit Sarkar has done programming in this project.**
- 2. Laden Ghising has made ppt and documentation.**

CONCLUSION

The above analysis of the internal and external environment of Netflix highlighted that the company is growing day by day and has more potential for growth due to changing customer preferences. It has been highlighted that this growth brings more competition in the market where other OTT platforms like Amazon Prime, Disney Plus, etc. are also gaining on market share. Besides this, the company also has a threat from changing norms and compliance for OTT platforms by different governments. Keeping the challenges in sight, some effective and worthwhile recommendations have been made in the ensuing section. A Netflix Analysis is a proven management framework that enables Netflix to benchmark its business & performance as compared to the competitors and industry.

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