

```
In [148... !pip install pandas
```

```
Requirement already satisfied: pandas in ./anaconda3/lib/python3.11/site-  
packages (2.2.1)  
Requirement already satisfied: numpy<2,>=1.23.2 in ./anaconda3/lib/python  
3.11/site-packages (from pandas) (1.26.4)  
Requirement already satisfied: python-dateutil>=2.8.2 in ./anaconda3/lib/  
python3.11/site-packages (from pandas) (2.8.2)  
Requirement already satisfied: pytz>=2020.1 in ./anaconda3/lib/python3.11  
/site-packages (from pandas) (2023.3.post1)  
Requirement already satisfied: tzdata>=2022.7 in ./anaconda3/lib/python3.  
11/site-packages (from pandas) (2023.3)  
Requirement already satisfied: six>=1.5 in ./anaconda3/lib/python3.11/sit  
e-packages (from python-dateutil>=2.8.2->pandas) (1.16.0)
```

## Suits

"**Suits**" is an American television drama created by *Aaron Korsh* that first aired on June 23, 2011, on the USA Network. The series is set in a prestigious New York City law firm and follows Mike Ross (played by *Patrick J. Adams*), a brilliant but unlicensed legal mind who is hired by Harvey Specter (*Gabriel Macht*), one of the city's top lawyers. Despite never having attended law school, Mike's photographic memory and innate legal knowledge impress Harvey enough to risk hiring him. Together, they handle high-stakes cases while safeguarding Mike's closely guarded secret.

Over its run, "**Suits**" blends sharp legal drama with dynamic interpersonal relationships, showcasing how Mike and Harvey navigate the challenges of their cases and their complicated personal lives. The show was a hit with audiences and critics alike, leading to its renewal through nine seasons, concluding on September 25, 2019. During its tenure, "**Suits**" delivered 134 episodes, culminating in a satisfying finale that wrapped up the storylines of its beloved characters.

```
In [149... from IPython.display import Image, display  
display(Image(filename='/Users/filipecorreia/Desktop/SUITS-capa-min.png'))
```



```
In [150... import pandas as pd
df = pd.read_csv('/Users/filipecorreia/Desktop/Suits-Statistics.csv')
```

```
In [151... df=pd.read_csv('/Users/filipecorreia/Desktop/Suits-Statistics.csv')
df.head(10)
```

Out [151]:

	Season	No. Overall	No. In season	Title	Directed by	Written by	Original air date	U view (million)
0	1	1	1	"Pilot"	Kevin Bray	Aaron Korsh	June 23, 2011	4
1	1	2	2	"Errors and Omissions"	John Scott	Sean Jablonski	June 30, 2011	3
2	1	3	3	"Inside Track"	Kevin Bray	Aaron Korsh	July 7, 2011	4
3	1	4	4	"Dirty Little Secrets"	Dennie Gordon	Jon Cowan	July 14, 2011	4
4	1	5	5	"Bail Out"	Kate Woods	Ethan Drogen	July 21, 2011	4
5	1	6	6	"Tricks of the Trade"	Terry McDonough	Rick Muirragui	July 28, 2011	4
6	1	7	7	"Play the Man"	Tim Matheson	Erica Lipez	August 4, 2011	4
7	1	8	8	"Identity Crisis"	Norberto Barba	Ethan Drogen	August 11, 2011	3
8	1	9	9	"Undeclared"	Felix Alcala	Rick Muirragui	August 18, 2011	4
9	1	10	10	"Shelf Life"	Jennifer Getzinger	Sean Jablonski	August 25, 2011	3

```
In [152]: viewership_stats_df = df['U.S. viewers (millions)'].describe().to_frame()
viewership_stats_df.columns = ['Viewership Statistics (millions)']
viewership_stats_df
```

Out [152]:

Viewership Statistics (millions)	
count	134.000000
mean	2.180224
std	1.065726
min	0.690000
25%	1.272500
50%	1.870000
75%	2.862500
max	4.640000

## Episode Count

- There are 134 episodes accounted for in the viewership data.

## Average Viewership

- On average, each episode was watched by approximately 2.18 million viewers.

## Viewership Variability

- The standard deviation is about 1.07 million viewers, indicating variability in the episode viewership.

## Minimum Viewership

- The least-watched episode had 0.69 million viewers.

## First Quartile (25th Percentile)

- 25% of the episodes had viewership numbers of 1.27 million or lower.

## Median Viewership (50th Percentile)

- Half of the episodes had more than 1.87 million viewers and the other half had fewer.

## Third Quartile (75th Percentile)

- 75% of the episodes had viewership numbers of 2.86 million or lower.

## Maximum Viewership

- The most-watched episode had a viewership of 4.64 million.

## Summary

- These statistics provide a quantitative overview of the viewership patterns for "Suits". The spread of viewership ranges from 0.69 million to 4.64 million, with half of the episodes garnering between 1.27 and 2.86 million viewers.

```
In [153.. import matplotlib.pyplot as plt
import pandas as pd

df = pd.read_csv('/Users/filipecorreia/Desktop/Suits-Statistics.csv')

df['Original air date'] = pd.to_datetime(df['Original air date'])

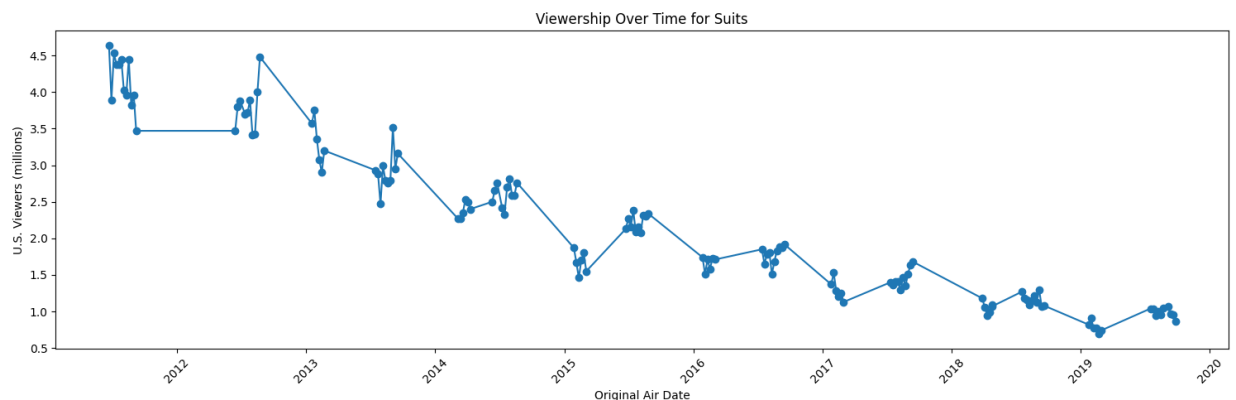
df.sort_values('Original air date', inplace=True)

plt.figure(figsize=(15, 5))
plt.plot(df['Original air date'], df['U.S. viewers (millions)'], marker='o')

plt.title('Viewership Over Time for Suits')
plt.xlabel('Original Air Date')
plt.ylabel('U.S. Viewers (millions)')

plt.xticks(rotation=45)
plt.tight_layout()

plt.show()
```



- The series had a strong start, with some of the initial episodes reaching near the peak viewership of the series, around 4.5 million viewers.
- There is noticeable variability in the viewership during the first few seasons, with some episodes attracting significantly more viewers than others.
- After the initial seasons, there appears to be a general declining trend in viewership. This is a common pattern for many TV series as they progress through their lifecycle.
- Despite the overall downward trend, there are moments where the viewership sees brief upticks, suggesting particular episodes or events that sparked viewer interest.
- The viewership stabilizes in later seasons but at a lower average than when the series began.

```
In [154... import matplotlib.pyplot as plt
import pandas as pd

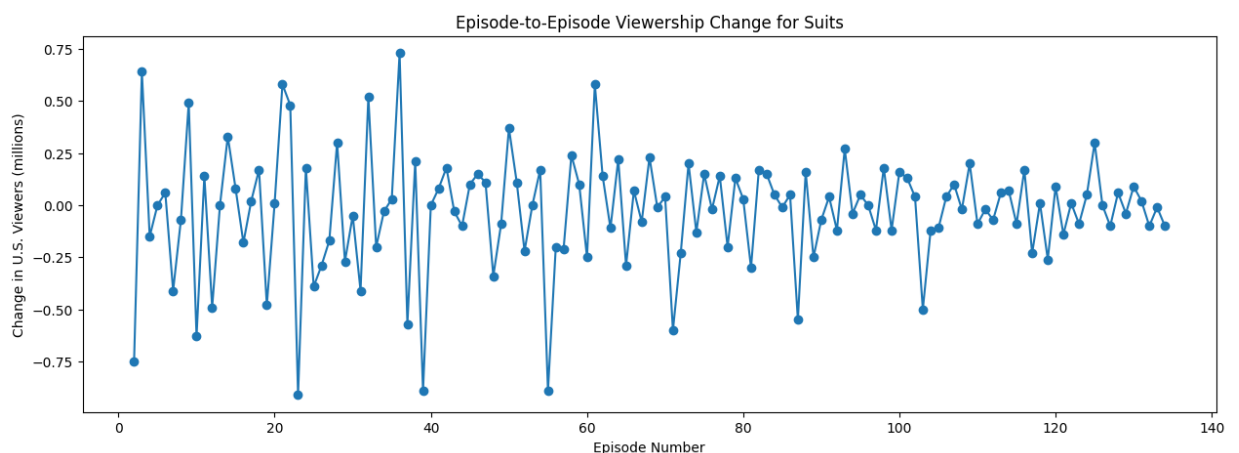
df = pd.read_csv('/Users/filipecorreia/Desktop/Suits-Statistics.csv')

df['Viewership Change'] = df['U.S. viewers (millions)'].diff()

plt.figure(figsize=(15, 5))
plt.plot(df['No. Overall'], df['Viewership Change'], marker='o', linestyle='solid')

plt.title('Episode-to-Episode Viewership Change for Suits')
plt.xlabel('Episode Number')
plt.ylabel('Change in U.S. Viewers (millions)')

plt.show()
```



This graph presents the episode-to-episode viewership change throughout the series, illustrating the fluctuations in viewership numbers from one episode to another. The graph captures the variability in audience engagement, with some episodes leading to a rise in viewership, while others see a drop, reflecting the dynamic nature of episodic viewership.

```
In [155... import matplotlib.pyplot as plt
import pandas as pd

df = pd.read_csv('/Users/filipecorreia/Desktop/Suits-Statistics.csv')

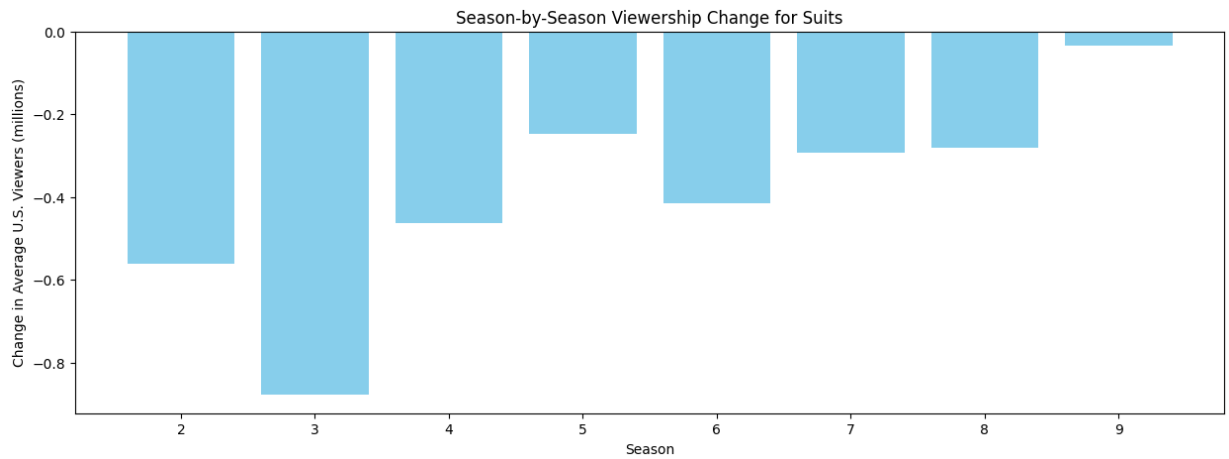
seasonal_viewership = df.groupby('Season')['U.S. viewers (millions)'].mean()

seasonal_viewership['Viewership Change'] = seasonal_viewership['U.S. view

plt.figure(figsize=(15, 5))
plt.bar(seasonal_viewership['Season'], seasonal_viewership['Viewership Ch

plt.title('Season-by-Season Viewership Change for Suits')
plt.xlabel('Season')
plt.ylabel('Change in Average U.S. Viewers (millions)')

plt.show()
```



This graph showcases the season-by-season viewership change for "Suits", revealing a consistent decline in average viewership as the series progresses from season to season. Each bar indicates the viewership shift from one season to the next, highlighting the show's struggle to maintain its audience over time.

```
In [156... import pandas as pd

seasonal_viewership = df.groupby('Season')['U.S. viewers (millions)'].mean()
seasonal_viewership['Viewership Change'] = seasonal_viewership['U.S. viewers (millions)'].pct_change()
seasonal_viewership['Percentage Change'] = seasonal_viewership['Viewership Change'].pct_change()
seasonal_viewership['Percentage Change'] = seasonal_viewership['Percentage Change'].pct_change()
seasonal_viewership.at[0, 'Percentage Change'] = "Start of Series"
seasonal_viewership.set_index('Season', inplace=True)
seasonal_viewership[['Percentage Change']]
```

```
/var/folders/4w/jbz8dqrn77j1vv6_j9m4d0900000gn/T/ipykernel_44089/3175816929.py:11: FutureWarning: Setting an item of incompatible dtype is deprecated and will raise an error in a future version of pandas. Value 'Start of Series' has dtype incompatible with float64, please explicitly cast to a compatible dtype first.
seasonal_viewership.at[0, 'Percentage Change'] = "Start of Series"
```

Out [156]:

**Percentage Change**

Season	
1	Start of Series
2	-13.48
3	-24.4
4	-16.99
5	-10.95
6	-20.65
7	-18.36
8	-21.57
9	-3.28

The table displays the percentage change in average viewership between seasons for the TV series "Suits." From the beginning of the series, there is a noticeable downward trend. Between Season 2 and Season 3, viewership fell by 13.48%. The most substantial drop occurred between Seasons 3 and 4, with a 24.4% decrease. The decline softened slightly in the subsequent seasons, with a 10.95% drop between Seasons 4 and 5, and a 20.65% decrease between Seasons 5 and 6. The trend of decreasing viewership continues through to the final season, which sees a relatively modest decline of 3.28% from Season 8 to Season 9.