

Breaking bad

Breaking Bad is an American crime drama television series created and produced by *Vince Gilligan* for AMC. Set and filmed in Albuquerque, New Mexico, the series follows Walter White (Bryan Cranston), an underpaid, dispirited high-school chemistry teacher struggling with a recent diagnosis of stage-three lung cancer. White turns *to a life of crime* and partners with a former student, Jesse Pinkman (Aaron Paul), to produce and distribute methamphetamine to secure his family's financial future before he dies, while navigating the dangers of the criminal underworld. Breaking Bad premiered on AMC on January 20, 2008, and concluded on September 29, 2013, after five seasons consisting of 62 episodes.

```
In [ ]: # Import necessary libraries
        from IPython.display import Image, display

        # Display the Breaking Bad Logo
        display(Image(filename='zdjęciebb.jpg'))
```



```
In [ ]: import pandas as pd
```

```
In [ ]: data = pd.read_excel("dane_s1.xlsx")
```

```
In [ ]: data
```

	No. In season	Title	Directed by	Written by	Original air date	U.S. viewers (millions)
0	1	"Pilot"	Vince Gilligan	Vince Gilligan	January 20, 2008	1.41
1	2	"Cat's in the Bag..."	Adam Bernstein	Vince Gilligan	January 27, 2008	1.49
2	3	"...And the Bag's in the River"	Adam Bernstein	Vince Gilligan	February 10, 2008	1.08
3	4	"Cancer Man"	Jim McKay	Vince Gilligan	February 17, 2008	1.09
4	5	"Gray Matter"	Tricia Brock	Patty Lin	February 24, 2008	0.97
5	6	"Crazy Handful of Nothin'"	Bronwen Hughes	George Mastras	March 2, 2008	1.07
6	7	"A No-Rough-Stuff-Type Deal"	Tim Hunter	Peter Gould	March 9, 2008	1.50

```
In [ ]: import seaborn as sns
import matplotlib.pyplot as plt
```

Average viewers (in millions) per episode of Season 1

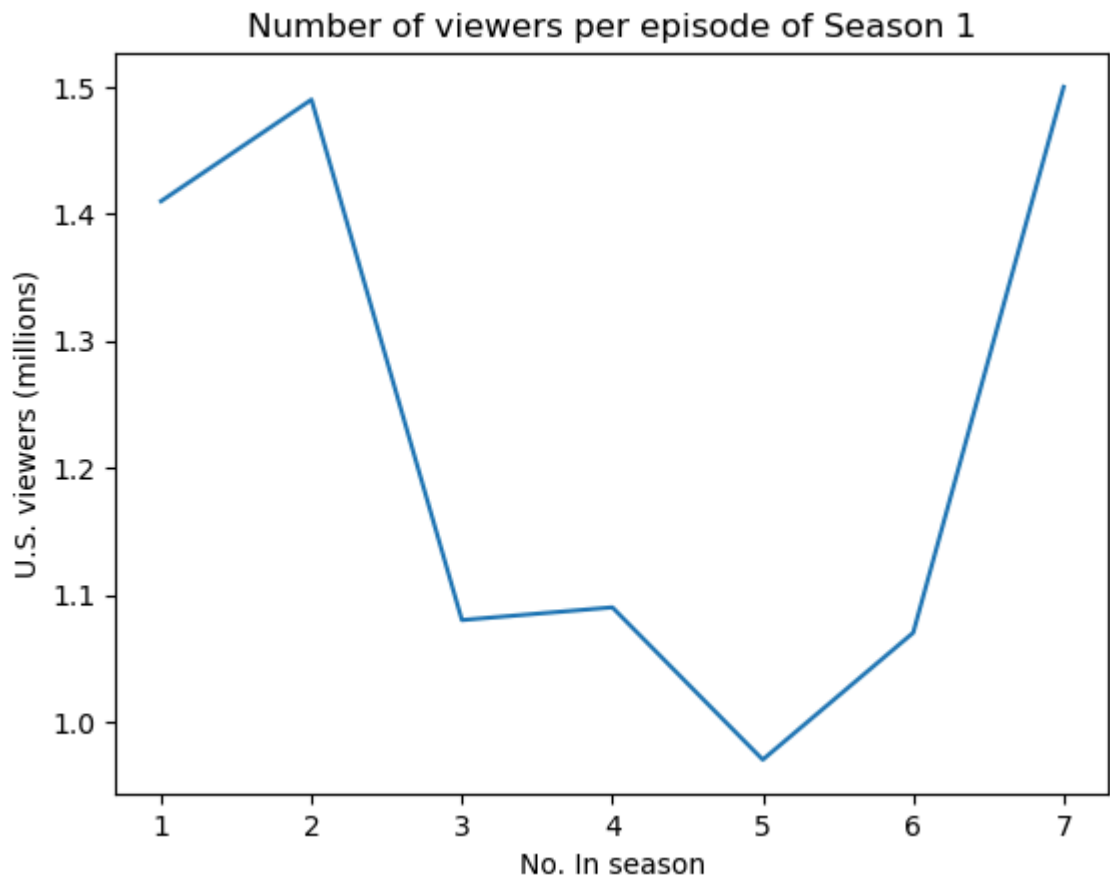
```
In [ ]: average = data["U.S. viewers (millions)"].mean()
print(f"On average first season viewed {average} millions people")
```

On average first season viewed 1.23 millions people

A graph of the viewership over time.

```
In [ ]: sns.lineplot(x= data['No.\xa0In season'], y= data["U.S. viewers (millions)"])
plt.title("Number of viewers per episode of Season 1")
```

```
Out[ ]: Text(0.5, 1.0, 'Number of viewers per episode of Season 1')
```



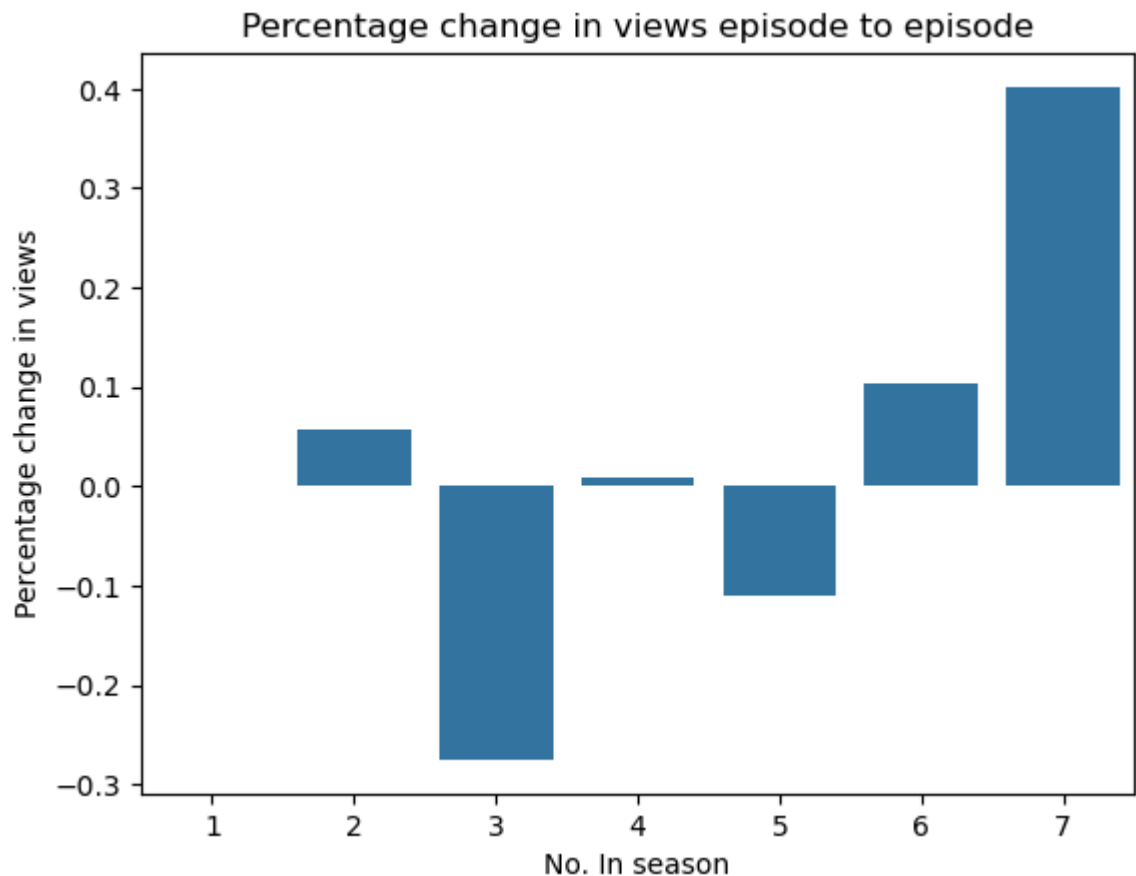
```
In [ ]: views = data['U.S. viewers (millions)']  
print(views)
```

```
0    1.41  
1    1.49  
2    1.08  
3    1.09  
4    0.97  
5    1.07  
6    1.50  
Name: U.S. viewers (millions), dtype: float64
```

A graph of the episode-to-episode changes in viewership.

```
In [ ]: sns.barplot(x= data['No.\xa0In season'], y=data['U.S. viewers (millions)'].pct_c  
plt.title("Percentage change in views episode to episode")  
plt.ylabel('Percentage change in views')
```

```
Out[ ]: Text(0, 0.5, 'Percentage change in views')
```



```
In [ ]: pct_change = data['U.S. viewers (millions)'].pct_change()
```

```
In [ ]: results_table = pd.DataFrame({'Episode': data['No.\xa0In season'][1:], 'Percentage Change': pct_change})
print(results_table)
```

	Episode	Percentage Change
1	2	0.056738
2	3	-0.275168
3	4	0.009259
4	5	-0.110092
5	6	0.103093
6	7	0.401869

Summary

```
In [ ]: md(f"On average **{average} millions** of people viewed first season of Breaking Bad.")
```

```
Out[ ]: On average 1.23 millions of people viewed first season of Breaking Bad. After second episode views decreased by -27.52% and only 1.08 millions viewed third episode
```

```
In [ ]: from IPython.display import Markdown as md
```