Game of Thrones

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```
season = "season_4"
```

```
# Injected Parameters
season = "season_8"
```

```
import pandas as pd
from pathlib import Path
import os
from IPython.display import Markdown, display

# List of seasons to process
seasons = ["season_1", "season_2", "season_3", "season_4",
           "season_5", "season_6", "season_7", "season_8"]

# Construct the base data directory path
data_dir = Path("../Data/")

# Loop through each season
file_path = os.path.join(data_dir, season + '.csv')
print(file_path)
df = pd.read_csv(file_path)
```

```
..\Data\season_8.csv
```

```
display(Markdown(f"""
### Game of Thrones - {season} summary in numbers
"""))
```

0.1 Game of Thrones - season_8 summary in numbers

0.2 (*Warning:* spoilers ahead)

0.3 Overview

(From the Wikipedia) Game of Thrones is an American fantasy drama television series created by David Benioff and D. B. Weiss for HBO. It is an adaptation of A Song of Ice and Fire, a series of fantasy novels by George R. R. Martin, the first of which is A Game of Thrones.

Set on the fictional continents of Westeros and Essos, Game of Thrones has a large ensemble cast and follows several story arcs throughout the course of the show. A major arc concerns the Iron Throne of the Seven Kingdoms of Westeros through a web of political conflicts among the noble families either vying to claim the throne or fighting for independence from it. Another focuses on the last descendant of the realm's deposed ruling dynasty, who has been exiled to Essos and is plotting a return to the throne. A third story arc follows the Night's Watch, a military order defending the realm against threats from the North.

```
display(Markdown(f"""
### {season} - episode descriptions
"""))
```

0.4 season_8 - episode descriptions

```
for description in df["description"]:
    display(Markdown(f"""
    > {description}

    """))  # Added extra newline for better spacing
```

```
> Upon reaching Winterfell with their combined armies, Jon and Daenerys learn the Army of the

> Jaime reveals Cersei's deception to the Targaryen-Stark alliance and joins them after Brien

> The living meet the Army of the Dead outside Winterfell. The initial Dothraki charge is dec

> The survivors mourn and burn the dead, then celebrate their victory. During the somber feas

> Varys urges Jon to advance his claim to the throne, but Jon refuses to betray Daenerys. Aft

> Jon is appalled when the Unsullied execute captured soldiers upon Daenerys' orders. Tyrion
Brienne, Bronn, Davos, and Sam - to rebuild King's Landing. Podrick is knighted. Sansa is cr
```

You can see how the viewership of the episodes changed in Figure 1.

```python
import pandas as pd
import matplotlib.pyplot as plt
from matplotlib.ticker import MaxNLocator

# Create the plot
plt.figure(figsize=(14, 7))

# Create histogram-style bars
bars = plt.bar(df['no_season'], df['viewers'],
               color='darkred',
               alpha=0.7,
               edgecolor='black',
               width=0.6)

# Customize the plot
plt.title('Game of Thrones ' + str(season) + 'Viewer Ratings by Episode', fontsize=16, pad=20
plt.xlabel('Episode Number', fontsize=12)
plt.ylabel('Viewers (Millions)', fontsize=12)
plt.grid(True, linestyle='--', alpha=0.3, axis='y')

# Ensure x-axis shows whole numbers for episode numbers
plt.gca().xaxis.set_major_locator(MaxNLocator(integer=True))

# Add value labels on top of each bar
for bar in bars:
```

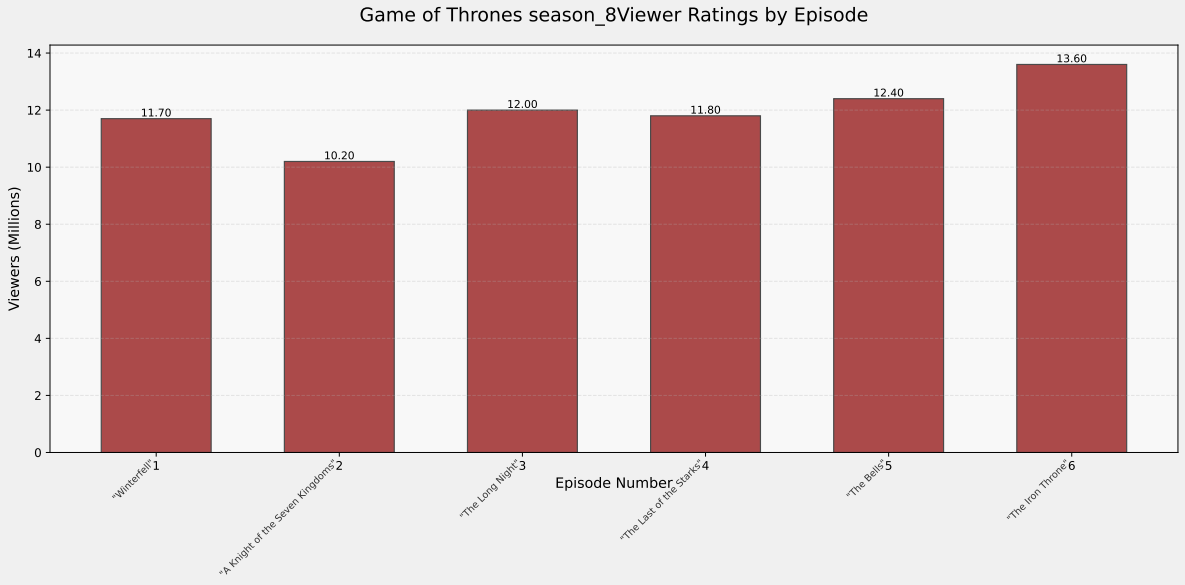
```
    height = bar.get_height()
    plt.text(bar.get_x() + bar.get_width()/2., height,
             f'{height:.2f}',
             ha='center', va='bottom',
             fontsize=9)

# Add episode titles below each bar
for i, row in df.iterrows():
    plt.text(row['no_season'], -0.2,
             row['title'],
             rotation=45,
             ha='right',
             va='top',
             fontsize=8,
             alpha=0.8)

# Adjust margins to accommodate episode titles
plt.subplots_adjust(bottom=0.3)

# Add some thematic styling
plt.gca().set_facecolor('#f8f8f8')
plt.gcf().set_facecolor('#f0f0f0')

plt.tight_layout()
plt.show()
```



```python
from IPython.display import Markdown
import pandas as pd

# Calculate total viewers and average
total_viewers = df['viewers'].sum()
avg_view = total_viewers / len(df)

# Filter episodes with above-average viewership
above_avg = df[df['viewers'] >= avg_view]

# Create Markdown table
table_header = "| Episode | Title | Viewers (Millions) |\n|--------|-------|----------------
table_rows = []

for _, row in above_avg.iterrows():
    table_rows.append(f"| {int(row['no_season'])} | {row['title']} | {row['viewers']:.2f} |"

# Combine header and rows
markdown_table = f"""
**Episodes with Above-Average Viewership (Average: {avg_view:.2f} million viewers)**

{table_header}
{"\n".join(table_rows)}
"""

# Display the table
display(Markdown(markdown_table))
```

Episodes with Above-Average Viewership (Average: 11.95 million viewers)

Episode	Title	Viewers (Millions)
3	“The Long Night”	12.00
5	“The Bells”	12.40
6	“The Iron Throne”	13.60