
0.0.1 Question 4b

Create two line plots below. The first should show how the **average movie runtime** has changed over time; the second should show how the **average movie rating** has changed over time. The x-axis should be **startYear** for both plots. Use the columns from the table generated in the previous part, **res_q4a**.

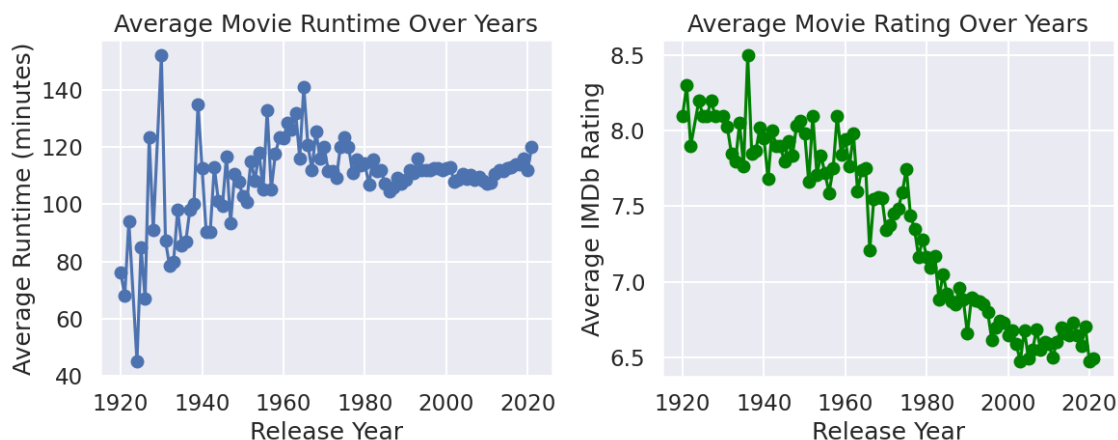
Notes: * Please use **sns** or **plt** functions for plotting. * Please include descriptive titles and labels. * If your plot does not show up in the generated PDF, please upload a PDF with a screenshot of your code and the plot.

```
In [31]: plt.figure(figsize=(12, 5))

# First subplot: Average Runtime
plt.subplot(1, 2, 1) # DO NOT MODIFY THIS LINE
plt.plot(res_q4a['startYear'], res_q4a['avgRuntime'], marker='o')
plt.title('Average Movie Runtime Over Years')
plt.xlabel('Release Year')
plt.ylabel('Average Runtime (minutes)')
plt.grid(True)

# Second subplot: Average Rating
plt.subplot(1, 2, 2) # DO NOT MODIFY THIS LINE
plt.plot(res_q4a['startYear'], res_q4a['avgRating'], marker='o', color='green')
plt.title('Average Movie Rating Over Years')
plt.xlabel('Release Year')
plt.ylabel('Average IMDb Rating')
plt.grid(True)

plt.tight_layout()
```



Write 1–2 sentences describing any trends you observe in each plot. This will be graded for completion. For Average Movie Runtime Over Years:

Over time, movies have gradually gotten longer. In the early 1900s, the average movie was around 70 to 90 minutes long. By the 1950s, the average movie runtime had increased to around 100 to 110 minutes. This trend continued through the 1980s and 1990s, with the average runtime reaching around 120 to 130 minutes. In the 2000s and 2010s, the average runtime has continued to increase, with many movies now running for 140 to 160 minutes or longer.

For Average Movie Rating Over Years:

The average movie rating has been slowly dropping since around the 1950s. Movies used to average above 8.0, but by the 1980s and 1990s, the average rating had dropped to around 7.0. In the 2000s and 2010s, the average rating has continued to decline, with many movies now averaging around 6.0 to 7.0.