```
import pandas as pd
import matplotlib.pyplot as plt

'''
    df_popular = pd.read_csv("./data/most-popular-netflix.csv")
    df_global_weekly = pd.read_csv("./data/all-weeks-global-
netflix.csv")
    df_country_weekly = pd.read_csv("./data/all-weeks-countries-
netflix.csv")
'''
# 1) Load files - change paths if needed
g = pd.read_csv("./data/all-weeks-global-netflix.csv")
p = pd.read_csv("./data/most-popular-netflix.csv")
c = pd.read_csv("./data/all-weeks-countries-netflix.csv")


g.head()
```

```
         week          category  weekly_rank
show_title  \
0  2024-04-14  Films (English)            1              What Jennifer
Did
1  2024-04-14  Films (English)            2  Woody Woodpecker Goes to
Camp
2  2024-04-14  Films (English)            3
Scoop
3  2024-04-14  Films (English)            4
Glass
4  2024-04-14  Films (English)            5                   Megan
Leavey

  season_title  weekly_hours_viewed  runtime  weekly_views  \
0          NaN             26100000   1.4500    18000000.0
1          NaN             19600000   1.6667    11800000.0
2          NaN             14600000   1.7167     8500000.0
3          NaN             11000000   2.1500     5100000.0
4          NaN              9700000   1.9333     5000000.0

   cumulative_weeks_in_top_10  is_staggered_launch
episode_launch_details
0                           1                False
NaN
1                           1                False
NaN
2                           2                False
NaN
3                           2                False
NaN
4                           1                False
NaN
```

```
p.head()
```

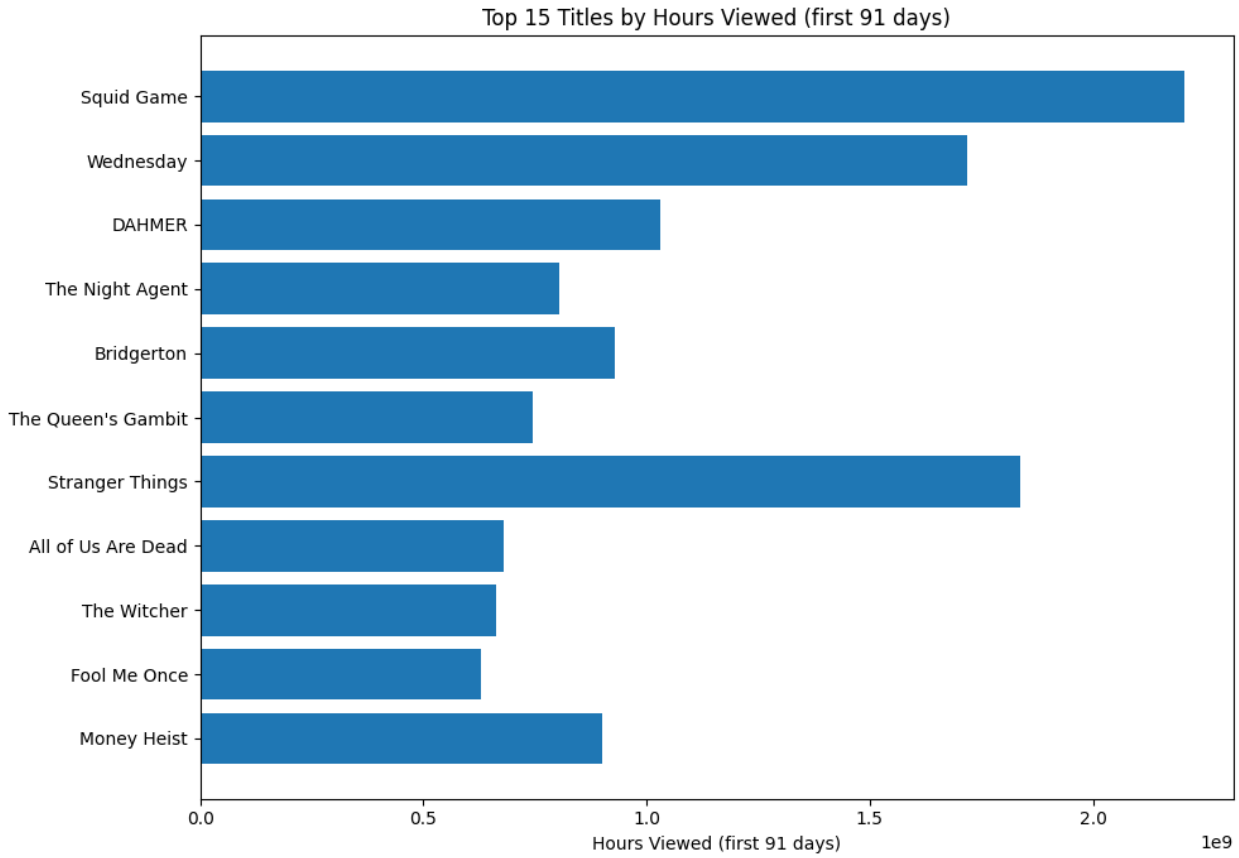
```
          category  rank               show_title season_title  \
0  Films (English)     1              Red Notice          NaN
1  Films (English)     2          Don't Look Up          NaN
2  Films (English)     3        The Adam Project          NaN
3  Films (English)     4                Bird Box          NaN
4  Films (English)     5  Leave the World Behind          NaN

   hours_viewed_first_91_days  runtime  views_first_91_days
0                   454200000   1.9667            230900000
1                   408600000   2.3833            171400000
2                   281000000   1.7833            157600000
3                   325300000   2.0667            157400000
4                   339300000   2.3667            143400000
```

```
c.head()
```

```
  country_name country_iso2        week category  weekly_rank  \
0    Argentina           AR  2024-04-14    Films            1
1    Argentina           AR  2024-04-14    Films            2
2    Argentina           AR  2024-04-14    Films            3
3    Argentina           AR  2024-04-14    Films            4
4    Argentina           AR  2024-04-14    Films            5

                      show_title season_title
cumulative_weeks_in_top_10
0                  The Tearsmith          NaN
2
1                         Stolen          NaN
1
2                  Love, Divided          NaN
1
3  Woody Woodpecker Goes to Camp          NaN
1
4                  Rest In Peace          NaN
3
```

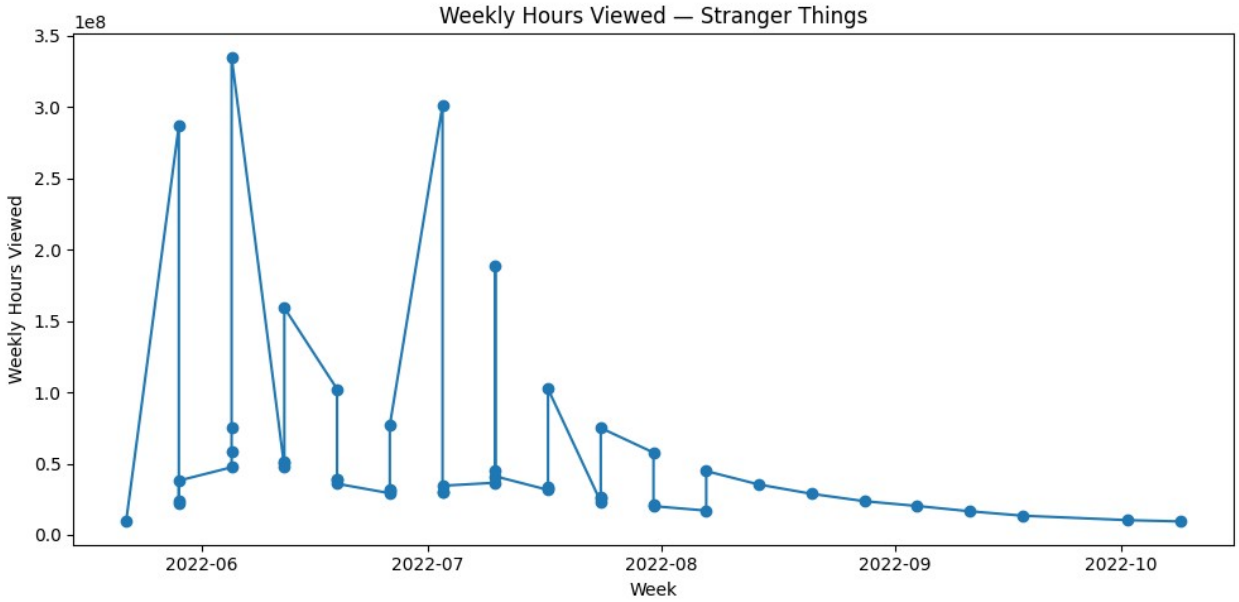
```
# Convert week columns
for df in (g, c):
    if 'week' in df.columns:
        df['week'] = pd.to_datetime(df['week'], errors='coerce')

# Ensure numeric conversions
for df in (g, p, c):
    for col in
['weekly_hours_viewed','weekly_views','hours_viewed_first_91_days','vi
ews_first_91_days','runtime']:
        if col in df.columns:
            df[col] = pd.to_numeric(df[col], errors='coerce')
```

```
# ------- VISUAL 2: Top 15 titles by hours_viewed_first_91_days
-------
if 'hours_viewed_first_91_days' in p.columns:
    top_titles = p.sort_values('hours_viewed_first_91_days',
ascending=False).head(15)
    plt.figure(figsize=(10,7))
    plt.barh(top_titles['show_title'].astype(str)[::-1],
top_titles['hours_viewed_first_91_days'][::-1])
    plt.title('Top 15 Titles by Hours Viewed (first 91 days)')
    plt.xlabel('Hours Viewed (first 91 days)')
    plt.tight_layout()
    plt.show()
```

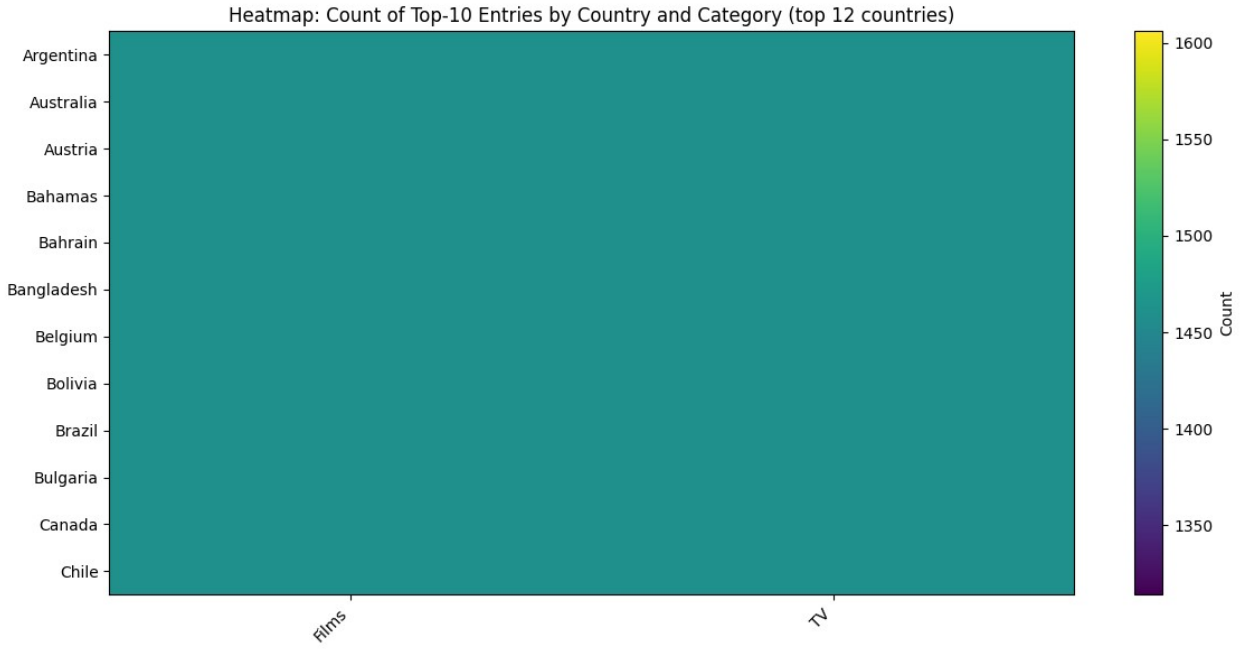



```
# # ------- VISUAL 3: Time series for most-seen show in global dataset
-------
if 'weekly_hours_viewed' in g.columns:
    top_show = g.groupby('show_title')
['weekly_hours_viewed'].sum().sort_values(ascending=False).head(1).ind
ex[0]
    ts = g[g['show_title'] == top_show].sort_values('week')
    plt.figure(figsize=(10,5))
```

```
    plt.plot(ts['week'], ts['weekly_hours_viewed'], marker='o')
    plt.title(f'Weekly Hours Viewed — {top_show}')
    plt.xlabel('Week')
    plt.ylabel('Weekly Hours Viewed')
    plt.tight_layout()
    plt.show()
```

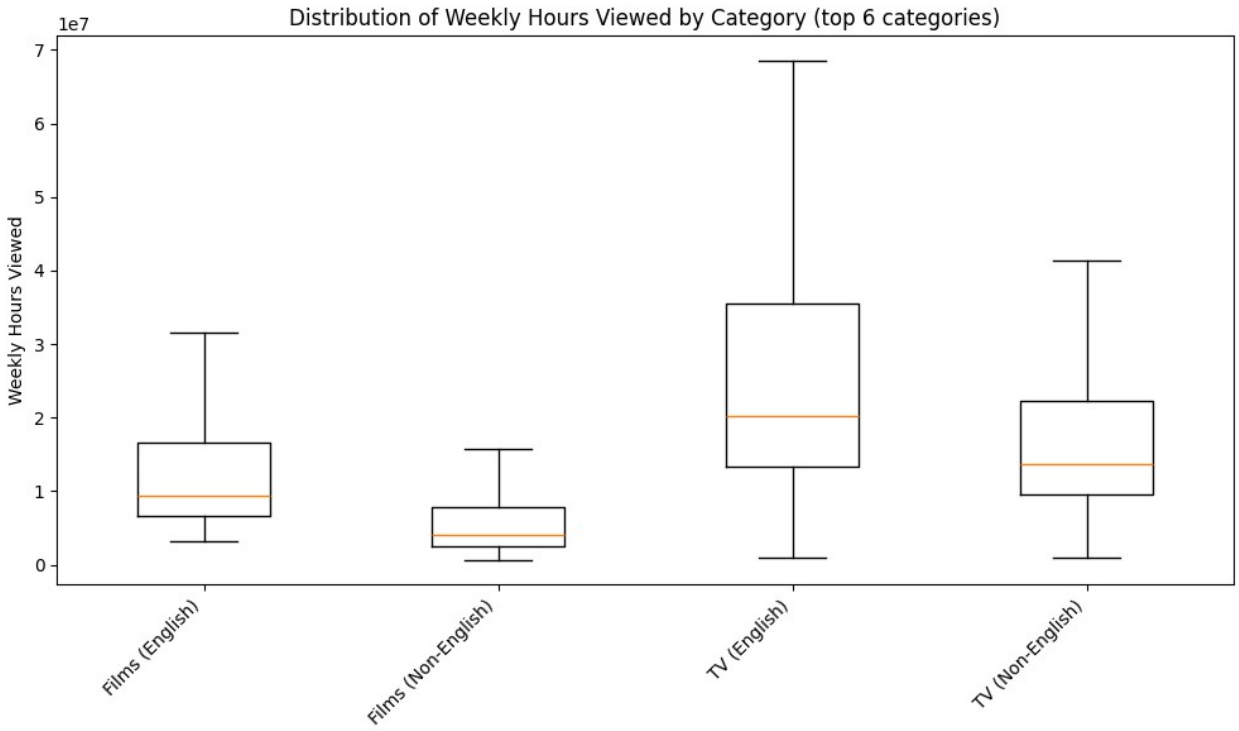



```
# ------- VISUAL 5: Heatmap (country x category) for top 12 countries
-------
top_countries = c['country_name'].value_counts().head(12).index
pivot = (c[c['country_name'].isin(top_countries)]
         .pivot_table(index='country_name', columns='category',
values='show_title', aggfunc='count', fill_value=0))
plt.figure(figsize=(12,6))
plt.imshow(pivot.values, aspect='auto')
plt.yticks(range(len(pivot.index)), pivot.index)
plt.xticks(range(len(pivot.columns)), pivot.columns, rotation=45,
ha='right')
plt.title('Heatmap: Count of Top-10 Entries by Country and Category
(top 12 countries)')
plt.colorbar(label='Count')
plt.tight_layout()
plt.show()
```

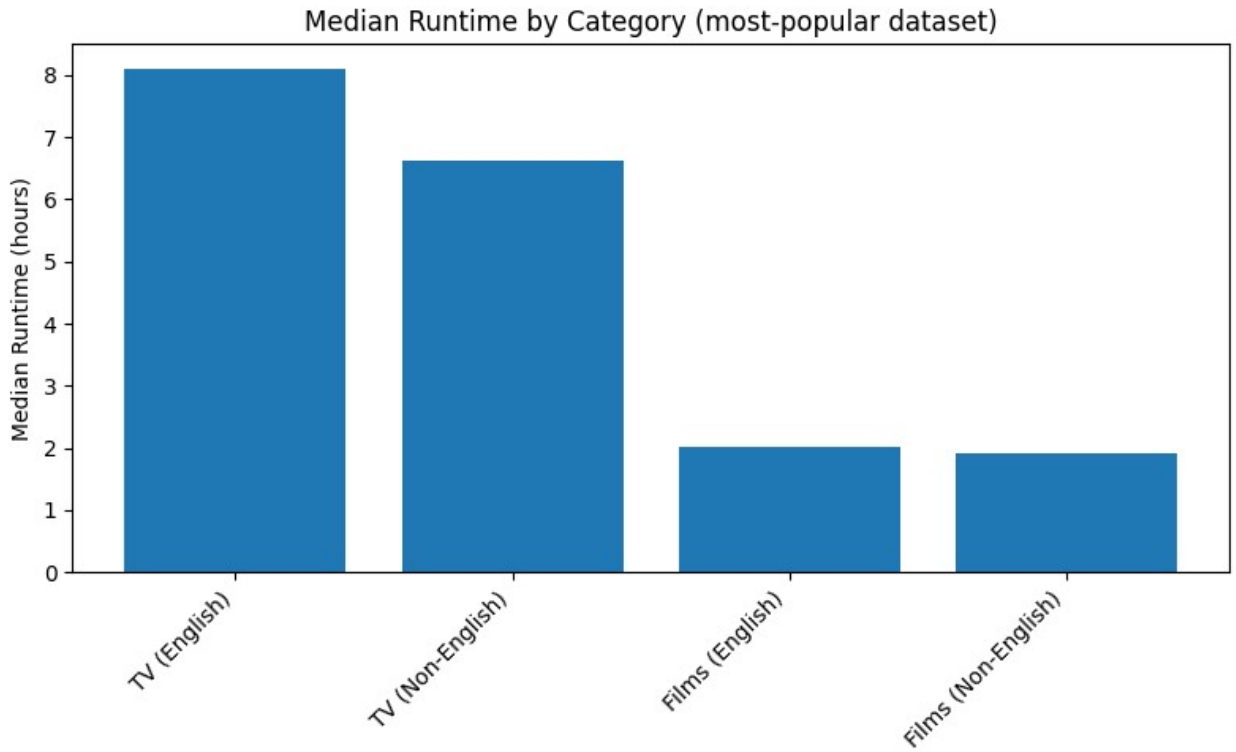



```
# ------- VISUAL 6: Boxplot distribution of weekly_hours_viewed by top
6 categories -------
top_categories = g['category'].value_counts().head(6).index.tolist()
box_data = [g[g['category']==cat]['weekly_hours_viewed'].dropna() for
cat in top_categories]
plt.figure(figsize=(10,6))
plt.boxplot(box_data, labels=top_categories, showfliers=False)
plt.title('Distribution of Weekly Hours Viewed by Category (top 6
categories)')
plt.xticks(rotation=45, ha='right')
plt.ylabel('Weekly Hours Viewed')
plt.tight_layout()
plt.show()
```

```
C:\Users\gyanr\AppData\Local\Temp\ipykernel_8728\1161221278.py:5:
MatplotlibDeprecationWarning: The 'labels' parameter of boxplot() has
been renamed 'tick_labels' since Matplotlib 3.9; support for the old
name will be dropped in 3.11.
  plt.boxplot(box_data, labels=top_categories, showfliers=False)
```




```
# ------- VISUAL 7 (extra): Median runtime by category (if present)
-------
if 'runtime' in p.columns:
    rt = p.groupby('category')
['runtime'].median().sort_values(ascending=False)
    plt.figure(figsize=(8,5))
    plt.bar(rt.index, rt.values)
    plt.title('Median Runtime by Category (most-popular dataset)')
    plt.xticks(rotation=45, ha='right')
    plt.ylabel('Median Runtime (hours)')
    plt.tight_layout()
    plt.show()
```




```
# ------- Write the 250-500 word paper to a txt file -------
paper_text = """
Audience: Netflix Content Executives and Regional Programming Leads.
Purpose: Use Top-10 global and country-level trends to recommend
shifting investment towards international originals, optimizing
promotional windows, and tailoring regional marketing to sustain long-
term engagement.

Design/Medium: I chose a slide-friendly visual medium (png images) so
visuals can be placed into a 6–8 slide deck. Visuals include counts by
category, top titles by hours, a time-series for the most-watched
title, country rankings, a country-category heatmap, and distributions
of weekly hours. These provide both high-level summary (bars/heatmap)
and distributional detail (boxplot/time series) to inform decisions.

Key Findings (summary): Non-English and regionally popular titles
frequently re-enter Top-10 lists and have strong cumulative hours—
suggesting sustained engagement beyond initial launch windows.
Country-level heatmaps reveal differing category mixes (e.g., Films
vs. Series dominance) which implies promotional strategies should be
country-specific. Boxplots show variance by category, indicating that
some categories have more consistent weekly-hours performance while
others are spike-driven.

Call to action: Reallocate 15% of the upcoming quarter's content
```

```
budget to high-performing international originals and incrementally
increase regional marketing for titles with proven cross-border
uptake. Pilot the approach in three markets (e.g., Mexico, South
Korea, Spain) and measure MAPE/RMSE on predicted vs actual weekly
hours to evaluate success.

Ethical considerations: Ensure representation and avoid cultural
stereotyping when promoting or commissioning international content.
Respect user privacy by using aggregated, anonymized viewership
metrics only. Monitor regional fairness: avoid over-indexing on
markets that might crowd out emerging creators or minority-language
content.
"""
```