Disney+ and Netflix Movies and TV Shows Analysis

Jacqueline Maloney & Aruushi Naik

Trends and Patterns in DisneyPlus and Netflix Movies and TV Shows: A Comparative Analysis

Netflix and Disney+

Image Credits - https://static0.gamerantimages.com/wordpress/wp-content/uploads/2022/08/Netflix-vs-Disney-Plus.jpg

Introduction

Disney+ and Netflix are two of the most well-known streaming services in the world, providing millions of users with access to a vast variety of TV series and films. We conduct an exploratory data analysis (EDA) of the films and television series that are available on Netflix and Disney+ in this analysis. Given the dynamic nature of digital entertainment, knowing

how content trends and patterns have changed over time offers important insights regarding platform expansion, production tactics, and consumer preferences.

Key patterns in Disney+ and Netflix content will be examined in this analysis, such as variations in the number of movies and TV shows over time, average running times, regional production distribution, content ratings, etc.Disney+ and Netflix's future content choices and marketing plans will be influenced by the insights this analysis provides into consumer preferences, strategic planning for content, and platform evolution.

The broader research question for our analysis is :

What trends and patterns can be observed in Disney Plus and Netflix TV shows and movies?

Dataset Overview

To address the research question, we will conduct an in-depth analysis of the Disney+ and Netflix data sets, examining various aspects of the content offered on both platforms.

Disney Data Preview

show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
s1	Movie	Duck the Hal...	Alonso Ramir...	Chris Dia-man...		November 26,...	2016	TV-G	23 min	Animation, F...	Join Mickey ...
s2	Movie	Ernest Saves...	John Cherry	Jim Varney, ...		November 26,...	1988	PG	91 min	Comedy	Santa Claus ...
s3	Movie	Ice Age: A M...	Karen Disher	Raymond Albe...	United States	November 26,...	2011	TV-G	23 min	Animation, C...	Sid the Slot...
s4	Movie	The Queen Fa...	Hamish Hamil-ton	Darren Criss...		November 26,...	2021	TV-PG	41 min	Musical	This is real...
s5	TV Show	The Beat-les:...		John Lennon,...		November 25,...	2021		1 Season	Docuseries, ...	A three-part...
s6	Movie	Becoming Cou...	Liz Garbus	Jacques Yves...	United States	November 24,...	2021	PG-13	94 min	Biographical	An inside lo...
s7	TV Show	Hawkeye		Jeremy Renne...		November 24,...	2021	TV-14	1 Season	Action-Adven...	Clint Bar-ton...
s8	TV Show	Port Pro-tect...		Gary Muehlbe...	United States	November 24,...	2015	TV-14	2 Seasons	Docuseries, ...	Residents of...
s9	TV Show	Secrets of t...		Dr. Ray Ball...	United States	November 24,...	2019	TV-PG	2 Seasons	Animals & Na...	A day in the...
s10	Movie	A Muppets Ch...	Kirk R. That...	Steve Whitmi...	United States	November 19,...	2008	G	45 min	Comedy, Fami...	Celebrate th...

Netflix Data Preview

show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description

s1	Movie	Dick Johnson...	Kirsten Johnson		United States	September 25...	2020	PG-13	90 min	Documentaries	As her fathe...
s2	TV Show	Blood & Water		Ama Qamata, ...	South Africa	September 24...	2021	TV-MA	2 Seasons	International...	After crossi...
s3	TV Show	Ganglands	Julien Leclercq	Sami Bouajil...		September 24...	2021	TV-MA	1 Season	Crime TV Sho...	To protect h...
s4	TV Show	Jailbirds Ne...				September 24...	2021	TV-MA	1 Season	Docuseries, ...	Feuds, flirt...
s5	TV Show	Kota Factory		Mayur More, ...	India	September 24...	2021	TV-MA	2 Seasons	International...	In a city of...
s6	TV Show	Midnight Mass	Mike Flanagan	Kate Siegel,...		September 24...	2021	TV-MA	1 Season	TV Dramas, T...	The arrival ...
s7	Movie	My Little Po...	Robert Culle...	Vanessa Hudg...		September 24...	2021	PG	91 min	Children & F...	Equestria's ...
s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba...	United State...	September 24...	1993	TV-MA	125 min	Dramas, Inde...	On a photo s...
s9	TV Show	The Great Br...	Andy Devonshire	Mel Giedroyc...	United Kingdom	September 24...	2021	TV-14	9 Seasons	British TV S...	A talented b...
s10	Movie	The Starling	Theodore Melfi	Melissa McCa...	United States	September 24...	2021	PG-13	104 min	Comedies, Dr...	A woman adju...

The tables above were built using the head() method and display the first few values from the data sets. It provides a quick preview of the data set's structure, column names, and value types, which is important for understanding the data's overall format and content.

show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
Length:1450	Length:1450	Length:1450	Length:1450	Length:1450	Length:1450	Length:1450	Min. :1928	Length:1450	Length:1450	Length:1450	Length:1450
Class :character	Class :character	Class :character	Class :character	Class :character	Class :character	Class :character	1st Qu.:1999	Class :character	Class :character	Class :character	Class :character
Mode :character	Mode :character	Mode :character	Mode :character	Mode :character	Mode :character	Mode :character	Median :2011	Mode :character	Mode :character	Mode :character	Mode :character
NA	NA	NA	NA	NA	NA	NA	Mean :2003	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	3rd Qu.:2018	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	Max. :2021	NA	NA	NA	NA

show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
Length:8807	Length:8807	Length:8807	Length:8807	Length:8807	Length:8807	Length:8807	Min. :1925	Length:8807	Length:8807	Length:8807	Length:8807
Class :character	Class :character	Class :character	Class :character	Class :character	Class :character	Class :character	1st Qu.:2013	Class :character	Class :character	Class :character	Class :character
Mode :character	Mode :character	Mode :character	Mode :character	Mode :character	Mode :character	Mode :character	Median :2017	Mode :character	Mode :character	Mode :character	Mode :character
NA	NA	NA	NA	NA	NA	NA	Mean :2014	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	3rd Qu.:2019	NA	NA	NA	NA

NA	NA	NA	NA	NA	NA	NA	Max. :2021	NA	NA	NA	NA	

Additionally, we used the summary() function to create a summary table. Each column in the data data frame is summarized in the table that is shown above.

Data Cleaning and Wrangling

To streamline the analysis, the datasets for Disney+ and Netflix were merged into a single dataset. This joining process ensures a consistent structure for comparative analysis and enables efficient exploration of trends across both the platforms.

```
# Add a platform column to the Disney+ dataset
disney_plus <- disney_data %>%
  mutate(platform = "Disney Plus")
# Add a platform column to the Netflix dataset
netflix <- netflix_data %>%
  mutate(platform = "Netflix")
# Join the two datasets
moviesandtv <- bind_rows(disney_plus, netflix)
```

Upon looking at the *moviesandtv* dataset, we came across empty cells and decided to replace it with N/A values to account for missing data. This would maintain uniformity throughout the dataset and allow for more accurate analysis by clearly identifying missing information across the Disney+ and Netflix datasets.

To facilitate targeted analysis for each type of content, we separated the *moviesandtv* dataset into two distinct tables: one for movies and one for TV shows. For movies, we changed the format for duration by removing the "min" label, while for TV shows, we converted the number of seasons into integers to ensure clear and specific analysis of content.

TV Shows Data

show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description	platform
s5	TV Show	The Beatles:...	NA	John Lennon,...	NA	November 25,...	2021	NA	1	Docuseries, ...	A three-part...	Disney Plus
s7	TV Show	Hawkeye	NA	Jeremy Renne...	NA	November 24,...	2021	TV-14	1	Action-Adven...	Clint Barton...	Disney Plus
s8	TV Show	Port Protect...	NA	Gary Muehlbe...	United States	November 24,...	2015	TV-14	2	Docuseries, ...	Residents of...	Disney Plus
s9	TV Show	Secrets of t...	NA	Dr. Ray Ball...	United States	November 24,...	2019	TV-PG	2	Animals & Na...	A day in the...	Disney Plus
s14	TV Show	Dr. Oakley, ...	NA	Dr. Michelle...	United States	November 17,...	2013	TV-PG	10	Action-Adven...	Meet Dr. Mic...	Disney Plus
s18	TV Show	Disney Fancy...	NA	Mia Jenness,...	United State...	November 12,...	2018	TV-PG	3	Animation, Kids	Nancy makes ...	Disney Plus

s19	TV Show	Disney Inter...	NA	Carolina Dom...	NA	November 12,...	2021	TV-PG	1	Comedy, Comi...	Allegra is r...	Disney Plus
s29	TV Show	Olaf Presents	NA	Josh Gad	NA	November 12,...	2021	TV-PG	1	Animation, F...	Olaf goes fr...	Disney Plus
s52	TV Show	Disney Am-phibia	NA	Justin Felbi...	United State...	November 3, ...	2018	TV-Y7	3	Animation, C...	Anne Boonchu...	Disney Plus
s53	TV Show	Photo Ark	NA	Joel Sartore	United States	November 3, ...	2017	TV-PG	1	Animals & Na...	National Geo...	Disney Plus

Movies Data

show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description	platform
s1	Movie	Duck the Hal...	Alonso Ramir...	Chris Dia-man...	NA	November 26,...	2016	TV-G	23	Animation, F...	Join Mickey ...	Disney Plus
s2	Movie	Ernest Saves...	John Cherry	Jim Varney, ...	NA	November 26,...	1988	PG	91	Comedy	Santa Claus ...	Disney Plus
s3	Movie	Ice Age: A M...	Karen Disher	Raymond Albe...	United States	November 26,...	2011	TV-G	23	Animation, C...	Sid the Slot...	Disney Plus
s4	Movie	The Queen Fa...	Hamish Hamil-ton	Darren Criss...	NA	November 26,...	2021	TV-PG	41	Musical	This is real...	Disney Plus
s6	Movie	Becoming Cou...	Liz Garbus	Jacques Yves...	United States	November 24,...	2021	PG-13	94	Biographical	An inside lo...	Disney Plus
s10	Movie	A Muppets Ch...	Kirk R. That...	Steve Whitmi...	United States	November 19,...	2008	G	45	Comedy, Fami...	Celebrate th...	Disney Plus
s11	Movie	Adventure Th...	John Gleim	Don Hahn, Ka...	NA	November 19,...	2020	TV-PG	59	Documentary	Explore the ...	Disney Plus
s12	Movie	Puppy for Ha...	NA	NA	NA	November 19,...	2020	TV-G	4	Comedy, Fami...	Check out Da...	Disney Plus
s13	Movie	The Pixar Story	Leslie Iwerks	Stacy Keach,...	United States	November 19,...	2007	G	91	Documentary	A ground-brea...	Disney Plus
s15	Movie	America the ...	NA	Michael B. J...	NA	November 12,...	2021	TV-PG	2	Animals & Na...	Epic, grand ...	Disney Plus

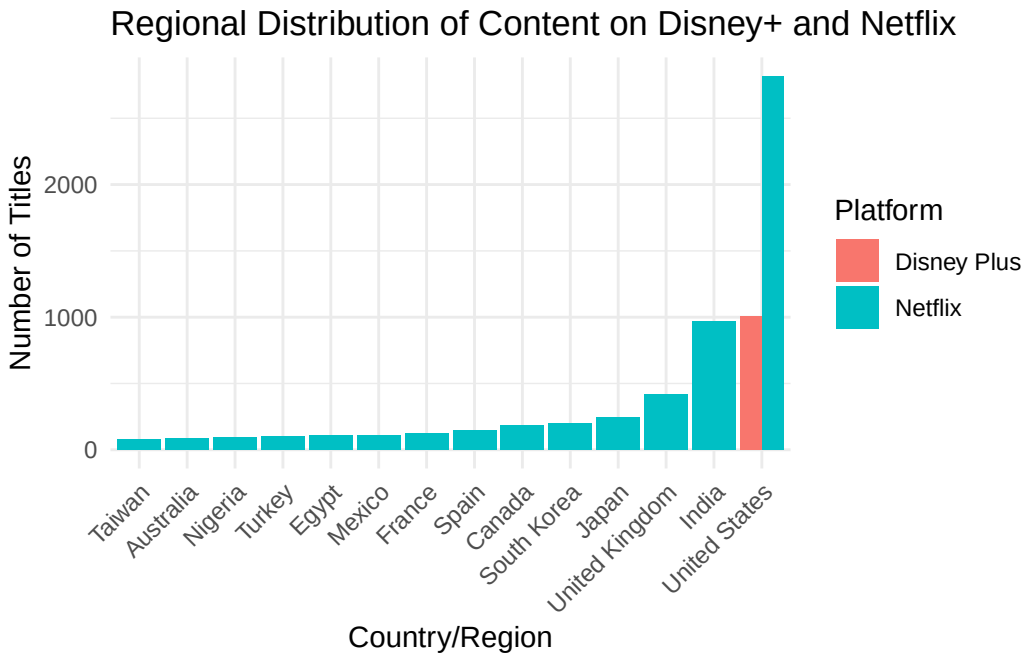
Exploratory Data Analysis(EDA)

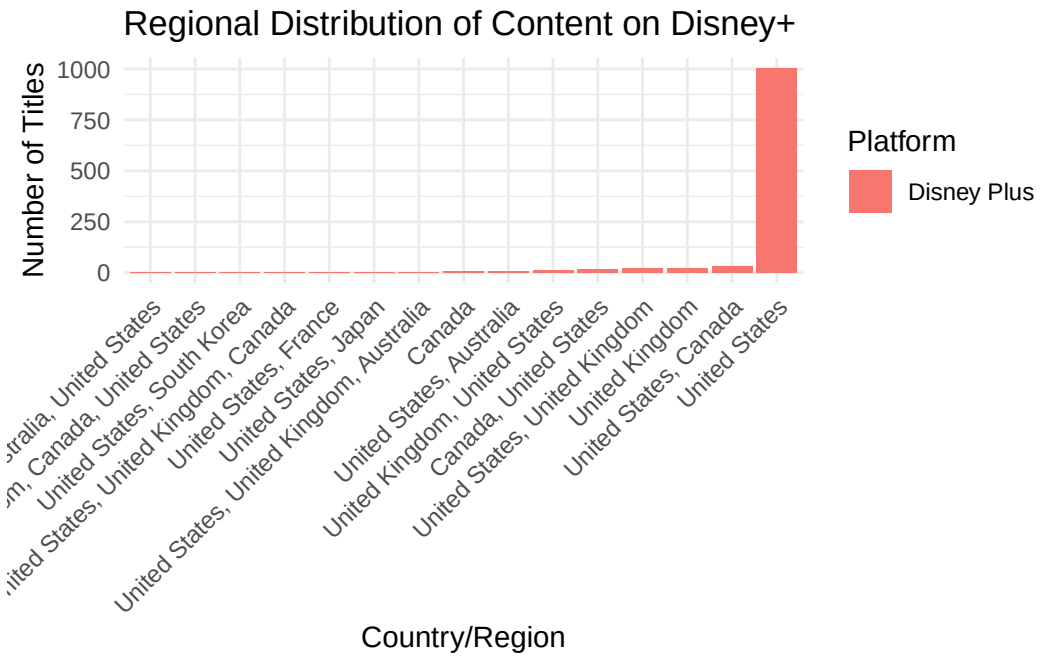
How has the number of movies and TV shows changed over the years?

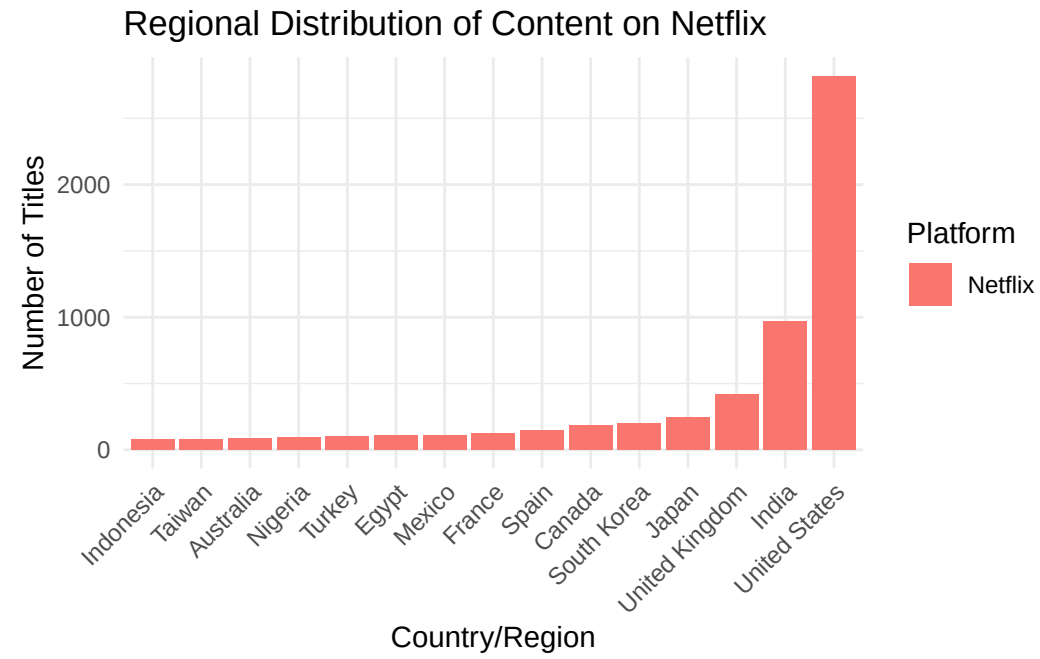
What is the average duration of movies and TV shows?

Which directors are most frequently featured on Disney+?

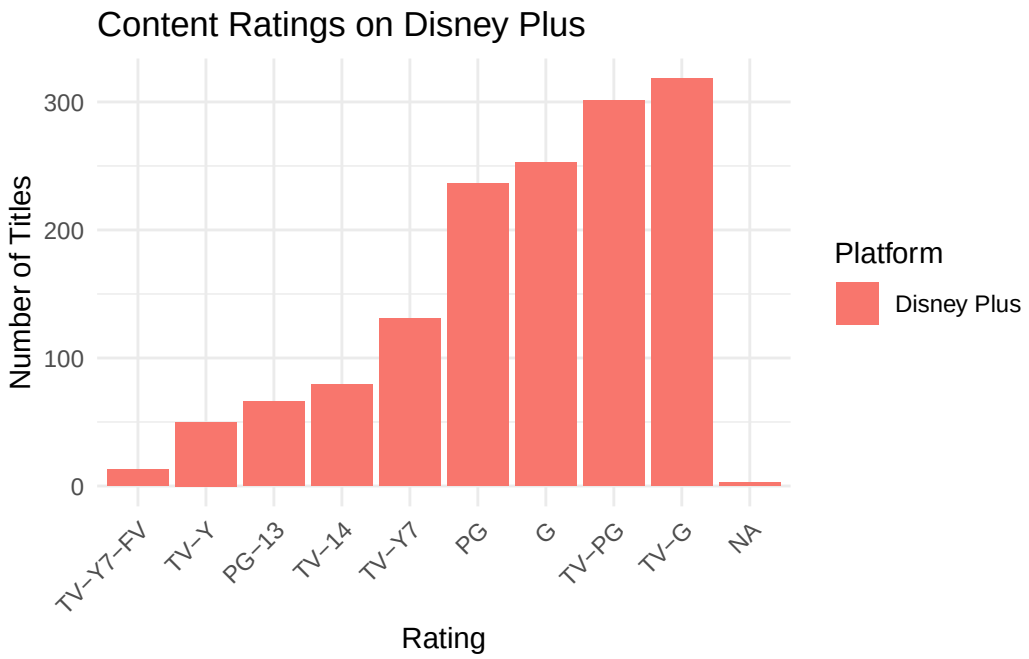
What is the regional distribution of Disney+ content (based on country/region of production)?

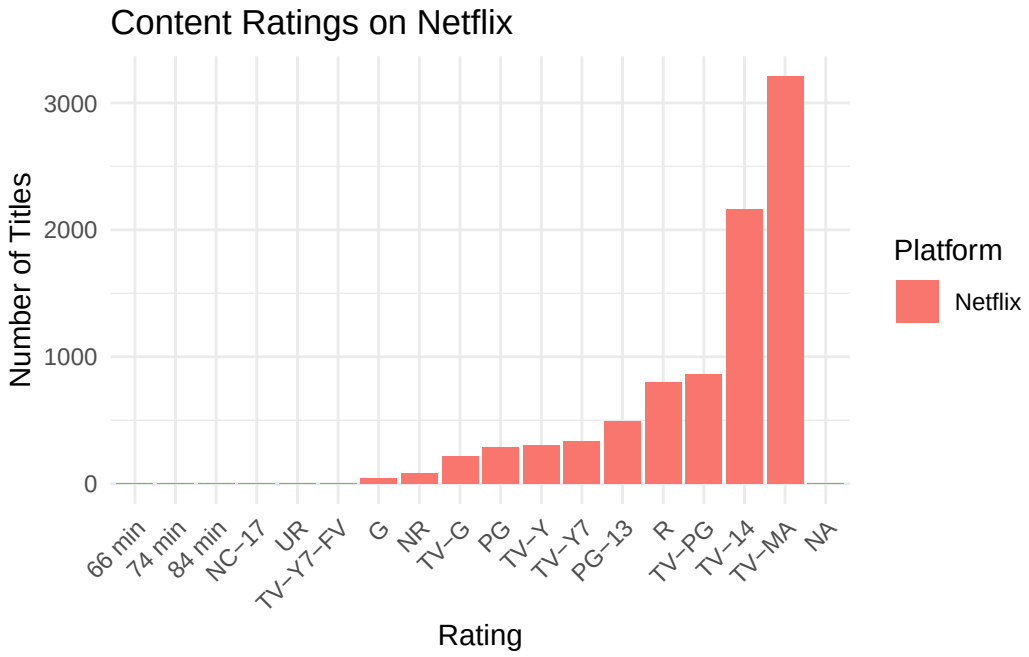



Regional Distribution of Content on Disney+
Number of Titles
1000
750
500
250
0
Platform
Disney Plus
Country/Region


Regional Distribution of Content on Netflix
Number of Titles
2000
1000
0
Platform
Netflix
Indonesia
Taiwan
Australia
Nigeria
Turkey
Egypt
Mexico
France
Spain
Canada
South Korea
Japan
United Kingdom
India
United States
Country/Region

Is there a trend in content ratings? For instance, does Disney Plus predominantly feature family-friendly content, or is there a growing inclusion of mature-rated titles?





Disney Plus tailors to a younger audience whereas Netflix tailors to teens and young adults.

Outside the US, where are most of Disney+ movies and TV Shows produced?

Date added to Disney Plus - Are the movies newer to Disney or have been on the platform for a long time?

Code Appendix

```
# Load the necessary packages
library(dplyr)
library(tidyr)
library(kableExtra)
library(stringr)
library(ggplot2)
# Load the Disney+ & Netflix data from the provided URL
disney_url <- "https://docs.google.com/spreadsheets/d/e/2PACX-1vT2CVS1o_R5Dq-ATuNlVRInKOWHG9(

disney_data <- read.csv(disney_url)

netflix_url <- "https://docs.google.com/spreadsheets/d/e/2PACX-1vRhYpV_lEupTdc9VgHeH2814Qtwa(

netflix_data <- read.csv(netflix_url)
# Preview Disney+ (first 10 entries) with truncated text and adjusted font size for the table
head(disney_data, 10) %>%
  # Truncate character columns
  mutate(across(where(is.character), ~str_trunc(., width = 15, ellipsis = "..."))) %>%
  kable() %>%
  kable_styling(bootstrap_options = c("striped", "hover"), full_width = FALSE) %>%
  column_spec(1:12, width = "1cm") %>%  #Adjust column width
  row_spec(0, bold = TRUE, font_size = 5)%>% # Adjust header font size
  kable_styling(font_size = 6) #Modify cell font size
# Preview Netflix the data
# Preview Disney+ (first 10 entries) with truncated text and adjusted font size for the table
head(netflix_data, 10) %>%
  # Truncate character columns
  mutate(across(where(is.character), ~str_trunc(., width = 15, ellipsis = "..."))) %>%
  kable() %>%
  kable_styling(bootstrap_options = c("striped", "hover"), full_width = FALSE) %>%
  column_spec(1:12, width = "1cm") %>%  #Adjust column width
  row_spec(0, bold = TRUE, font_size = 4.5)%>% # Adjust header font size
  kable_styling(font_size = 6) #Modify cell font size
```

```r
# Summarize Disney+ the data
summary(disney_data) %>%
  kable() %>%
  kable_styling(bootstrap_options = c("striped", "hover"), full_width = FALSE) %>%
  column_spec(1:12, width = "1cm") %>%
  row_spec(0, bold = TRUE, font_size = 4.5) %>%
  kable_styling(font_size = 6)%>%
  column_spec(1, extra_css = "text-align: left;")
# Summarize Netflix the data
summary(netflix_data) %>%
  kable() %>%
  kable_styling(bootstrap_options = c("striped", "hover"), full_width = FALSE) %>%
  column_spec(1:12, width = "1cm") %>%
  row_spec(0, bold = TRUE, font_size = 5) %>%
  kable_styling(font_size = 5)%>%
  column_spec(1, extra_css = "text-align: left;")
# Add a platform column to the Disney+ dataset
disney_plus <- disney_data %>%
  mutate(platform = "Disney Plus")
# Add a platform column to the Netflix dataset
netflix <- netflix_data %>%
  mutate(platform = "Netflix")
# Join the two datasets
moviesandtv <- bind_rows(disney_plus, netflix)
# Add N/A values to replace missing data
moviesandtv <- moviesandtv %>%
  mutate(across(where(is.character), ~na_if(., "")))
#Separate the moviesandtv table into two distinct tables

movies <- moviesandtv %>%
  filter(type == 'Movie') %>%
  mutate(duration = as.integer(str_remove(duration, " min")))

tvshows <- moviesandtv %>%
  filter(type == 'TV Show') %>%
  mutate(duration = str_replace(duration, "Seasons", "Season")) %>%
  mutate(duration = as.integer(str_remove(duration, " Season")))
head(tvshows, 10) %>%
  # Truncate character columns
  mutate(across(where(is.character), ~str_trunc(., width = 15, ellipsis = "..."))) %>%
  kable() %>%
  kable_styling(bootstrap_options = c("striped", "hover"), full_width = FALSE) %>%
```

```
  column_spec(1:12, width = "0.95cm") %>%  #Adjust column width
  row_spec(0, bold = TRUE, font_size = 5)%>% # Adjust header font size
  kable_styling(font_size = 5) #Modify cell font size
head(movies, 10) %>%
  # Truncate character columns
  mutate(across(where(is.character), ~str_trunc(., width = 15, ellipsis = "..."))) %>%
  kable() %>%
  kable_styling(bootstrap_options = c("striped", "hover"), full_width = FALSE) %>%
  column_spec(1:12, width = "0.95cm") %>%  #Adjust column width
  row_spec(0, bold = TRUE, font_size = 5)%>% # Adjust header font size
  kable_styling(font_size = 5) #Modify cell font size
distribution <- moviesandtv%>%
  group_by(platform,country)%>%
  summarise(count = n(), .groups="drop")%>%
  arrange(desc(count))%>%
  filter(!is.na(country))%>%
  slice_head(n=15)

ggplot(distribution, aes(x = reorder(country, count), y = count, fill = platform)) +
  geom_bar(stat = "identity", position = "dodge") +
  labs(
    title = "Regional Distribution of Content on Disney+ and Netflix",
    x = "Country/Region",
    y = "Number of Titles",
    fill = "Platform"
  )+
  theme_minimal() +
  theme(
    axis.text.x = element_text(angle = 45, hjust = 1, vjust = 1) ) # Adjust label position
library(dplyr)
library(ggplot2)

disney_distribution <- moviesandtv %>%
  filter(platform == "Disney Plus") %>%
  group_by(country) %>%
  summarise(count = n(), .groups = "drop") %>%
  arrange(desc(count)) %>%
  filter(!is.na(country)) %>%
  slice_head(n = 15)

netflix_distribution <- moviesandtv %>%
  filter(platform == "Netflix") %>%
```

```r
  group_by(country) %>%
  summarise(count = n(), .groups = "drop") %>%
  arrange(desc(count)) %>%
  filter(!is.na(country)) %>%
  slice_head(n = 15)


ggplot(disney_distribution, aes(x = reorder(country, count), y = count, fill = "Disney Plus")
  geom_bar(stat = "identity", position = "dodge") +
  labs(
    title = "Regional Distribution of Content on Disney+",
    x = "Country/Region",
    y = "Number of Titles",
    fill = "Platform"
  ) +
  theme_minimal() +
  theme(
    axis.text.x = element_text(angle = 45, hjust = 1, vjust = 1)
  )



ggplot(netflix_distribution, aes(x = reorder(country, count), y = count, fill = "Netflix")) +
  geom_bar(stat = "identity", position = "dodge") +
  labs(
    title = "Regional Distribution of Content on Netflix",
    x = "Country/Region",
    y = "Number of Titles",
    fill = "Platform"
  ) +
  theme_minimal() +
  theme(
    axis.text.x = element_text(angle = 45, hjust = 1, vjust = 1)
  )

disney_ratings <- moviesandtv %>%
  filter(platform == "Disney Plus") %>%
  group_by(rating) %>%
  summarise(count = n(), .groups = "drop") %>%
  arrange(desc(count))

netflix_ratings <- moviesandtv %>%
```

```r
  filter(platform == "Netflix") %>%
  group_by(rating) %>%
  summarise(count = n(), .groups = "drop") %>%
  arrange(desc(count))

ggplot(disney_ratings, aes(x = reorder(rating, count), y = count, fill = "Disney Plus")) +
  geom_bar(stat = "identity", position = "dodge") +
  labs(
    title = "Content Ratings on Disney Plus",
    x = "Rating",
    y = "Number of Titles",
    fill = "Platform"
  ) +
  theme_minimal() +
  theme(
    axis.text.x = element_text(angle = 45, hjust = 1, vjust = 1)
  )

ggplot(netflix_ratings, aes(x = reorder(rating, count), y = count, fill = "Netflix")) +
  geom_bar(stat = "identity", position = "dodge") +
  labs(
    title = "Content Ratings on Netflix",
    x = "Rating",
    y = "Number of Titles",
    fill = "Platform"
  ) +
  theme_minimal() +
  theme(
    axis.text.x = element_text(angle = 45, hjust = 1, vjust = 1)
  )
```