

Netflix Usage Report

Analysis with Power BI

The Netflix logo, consisting of the word "NETFLIX" in a bold, red, sans-serif font, is positioned on the right side of the image against a dark background.

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Background & Data Cleaning

Background

- Aleesha is a former flatmate of mine who loves Netflix
- Observed her Netflix viewing habits while living with her, noticed she watched a lot of the same content at the same times.
- Knew about Netflix data request system, tried on my own account but I had minimal usage
- Initially looking to access her profile 'Leesh' for analysis, but decided to extend to all users on her account (Account shared with her family, they each have profiles)

Hypothesis for Leesh

- Big Bang Theory number 1 most viewed content
- Harry Potter series most viewed movies, dominating the Top 10
- Majority of viewing as TV shows
- Heaviest usage between 8pm-1am
- Largest user on Netflix account, at least half of all viewing
- Usage increased over 2020 compared to previous year, decrease when Auckland released from lockdown

Key Questions

What are the most viewed titles by Leesh?

How does her viewing differ by content type (TV or Movies)?

Does she watch more new content vs content already seen before?

How does Leesh's usage compare to other profiles on the account?

How did Covid-19 Lockdowns affect her viewing habits?

Accessing the Data

- Requested data via <https://www.netflix.com/account/getmyinfo>
- Data given in .csv format.
- 38,000+ Rows from 5 Profiles
- Columns:
 - Profile Name ('Leesh' name of Aleesha's profile)
 - Start Time (DD-MM-YY H:MM)
 - Duration (H:MM:SS)
 - Attributes (Identifiers for 'Autoplayed' e.g. played next title without user selecting a title)
 - Title (Includes season and episode information)
 - Supplemental Video Type (identifiers for trailers, hooks etc.)
 - Device Type (Full names and player in some cases)
 - Bookmark
 - Latest Bookmark
 - Country

Profile Name	Start Time	Duration	Attributes	Title	Supplemental Video Type	Device Type	Bookmark	Latest Bookmark	Country
Jacob	30-12-20 17:03	0:17:06		The Wiggles: Ready, Steady, Wiggle: Season 1: Miss Polly Had a Dolly / Wake Up, Lachy! / Lachy Shrunk the Wiggles (Episode 1)		Panasonic Panasonic DTV 2014 LD6 Smart TV	0:14:58	0:14:58	NZ (New Zealand)
Gregor	30-12-20 4:30	0:02:32		Trailer 2: The Midnight Sky	TRAILER	Panasonic Panasonic DTV 2014 LD6 Smart TV	0:02:32	0:02:32	NZ (New Zealand)
Gregor	30-12-20 2:37	1:50:39		Jungle		Panasonic Panasonic DTV 2014 LD6 Smart TV	1:50:39	1:50:39	NZ (New Zealand)
Leesh	30-12-20 1:29	0:22:16		Bridgerton: Season 1: Shock and Delight (Episode 2)		Apple iPhone XR	0:22:16	Not latest view	NZ (New Zealand)
Leesh	30-12-20 1:29	0:00:08		Bridgerton: Season 1: Shock and Delight (Episode 2)		Apple iPhone XR	0:00:08	Not latest view	NZ (New Zealand)
Leesh	30-12-20 0:30	0:54:58		Bridgerton: Season 1: Diamond of the First Water (Episode 1)		Apple iPhone XR	0:54:34	Not latest view	NZ (New Zealand)
Leesh	30-12-20 0:29	0:00:42	Autoplayed: user action: None;	Season 1 Teaser: Fate: The Winx Saga	TEASER_TRAILER	Apple iPhone XR	0:00:43	0:00:43	NZ (New Zealand)
Leesh	29-12-20 22:47	0:15:57	Autoplayed: user action: None;	The Big Bang Theory: Season 6: The Date Night Variable (Episode 1)		Samsung 2014 MStar DTV	0:15:57	Not latest view	NZ (New Zealand)
Leesh	29-12-20 22:47	0:14:58	Autoplayed: user action: None;	The Big Bang Theory: Season 6: The Date Night Variable (Episode 1)		Samsung 2014 MStar DTV	0:14:58	Not latest view	NZ (New Zealand)
Leesh	29-12-20 22:28	0:19:40	Autoplayed: user action: None;	The Big Bang Theory: Season 5: The Countdown Reflection (Episode 24)		Samsung 2014 MStar DTV	0:19:40	0:19:40	NZ (New Zealand)
Leesh	29-12-20 22:07	0:20:42	Autoplayed: user action: Unspecified;	The Big Bang Theory: Season 5: The Launch Acceleration (Episode 23)		Samsung 2014 MStar DTV	0:21:02	0:21:02	NZ (New Zealand)
Leesh	29-12-20 21:46	0:20:52	Autoplayed: user action: Unspecified;	The Big Bang Theory: Season 5: The Stag Convergence (Episode 22)		Samsung 2014 MStar DTV	0:21:07	0:21:07	NZ (New Zealand)
Leesh	29-12-20 21:27	0:18:36	Autoplayed: user action: Unspecified;	The Big Bang Theory: Season 5: The Hawking Excitation (Episode 21)		Samsung 2014 MStar DTV	0:18:53	0:18:53	NZ (New Zealand)
Leesh	29-12-20 21:06	0:21:08	Autoplayed: user action: None;	The Big Bang Theory: Season 5: The Transporter Malfunction (Episode 20)		Samsung 2014 MStar DTV	0:21:08	0:21:08	NZ (New Zealand)
Leesh	29-12-20 20:46	0:19:35	Autoplayed: user action: Unspecified;	The Big Bang Theory: Season 5: The Weekend Vortex (Episode 19)		Samsung 2014 MStar DTV	0:19:57	0:19:57	NZ (New Zealand)

Known Limitations

- Other people use Leesh profile (on living room tv in flat)
- Limited to Netflix data (She uses Lightbox, Disney+, personal copies)
- No TV/Film delineation
- No genre information
- What counts as a view?
 - Autoplayed titles may not have been watched actively
 - Netflix left on while she slept
 - Moving devices = 2 or more views?

Solutions

- Filter some 'Flat TV' entries based on known viewing habits
- Focus analysis on Netflix only
- Create calculated column for TV/Film assignment based on entry title
- Outline clear definitions for purpose of analysis

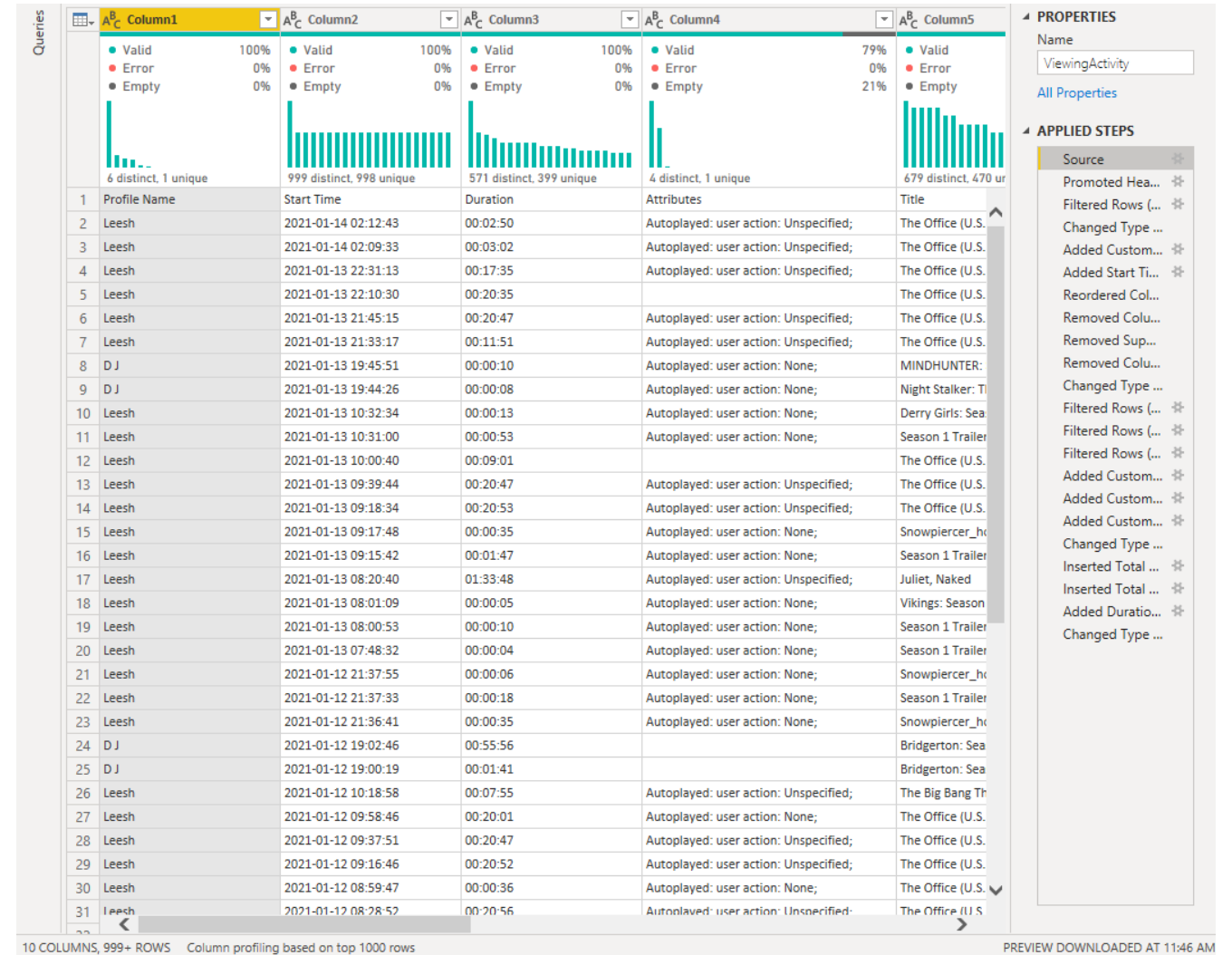
Definitions

- View = Any time a title has been played on a given device for at least 60 seconds.
- Entry = A row in the dataset. Each entry is an individual view.
- Total Hours = The number of hours a user has spent (captured via Duration) watching a given title
- TV Show/TV = Episodic titles that are part of a collective series, miniseries or set of seasons.
- Movie = Standalone titles/films

Cleaning the Data in Power Query

Steps Taken:

1. Promote Headers
2. Removed 'Trailer' entries via Supplemental Video Type column
3. Changed Column Types (Start Time to DateTime and Duration to Duration)
4. Change 'Start Time' Column to NZ timezone (Created ZoneTime column to convert value to UTC 0, created new Start Time NZ column as + 13, drop old Start Time and ZoneTime columns)
5. Removed Unnecessary Columns (Supplemental Video Type, Attributes, Bookmark, Latest Bookmark, Country)
6. Removed 2021 entries (Not enough data)
7. Removed entries where duration is less than 1 minute (not a real viewing), or over 3 hours (heavy outliers/bugged)
8. Added ContentType column (Assign 'TV' to entries with word 'Episode', else assign 'Movie')
9. Added ShowName column (Take text from title before ':' and call that show name)
10. Added ShowNameOrMovie column (If content type is TV then do above, else add prefix 'Movie -')
11. Added Total Hours, Total Minutes, Duration in seconds columns (Calculated from Duration column)



Creating DAX Columns

NotLeesh

Calculated column based on knowledge of Aleesha and other flat members viewing habits using the shared lounge TV for Netflix. Viewings on this TV after 8pm are extremely unlikely to be Aleesha based on her schedule.

WeekDayNumber, DayOfWeek

Numerical and String versions of weekdays for visualizing common viewing times

ShowName (Top 5 and Other), ShowNameOrMovie groups

Grouping columns for visualizing Most Viewed titles vs 'Others'

Profile Name groups

Grouping column for comparing Leesh's profile to all other users on the account

Duration bins

Bin column for analyzing highly varied duration lengths in an easier to digest format

Device Type bins

Bin column to allow for devices to be presented as groups (TVs, Phones etc.) for simplicity

1 NotLeesh = AND(ViewingActivity[Device Type] = "Samsung 2016 Hawk-M DTV Smart TV", [Start Time NZ]-INT([Start Time NZ]) >= TIME (20,00,0))

NotLeesh	ContentType	ShowName	Total Hours	WeekDayNumber	DayOfWeek	ShowName (Top 5 and Other) OLD	othercheck	ShowName (Top 5 and C
False	TV	Brooklyn Nine-Nine	0.3625	3	Wednesday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	1	Monday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	6	Saturday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	3	Wednesday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	3	Wednesday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	2	Tuesday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	4	Thursday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	3	Wednesday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	1	Monday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	1	Monday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	7	Sunday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	6	Saturday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	6	Saturday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine
False	TV	Brooklyn Nine-Nine	0.3625	5	Friday	Brooklyn Nine-Nine	1	Brooklyn Nine-Nine

ViewingActivity (33,364 rows) Column: NotLeesh (2 distinct values) Update available (click to down

Visualizing the Data

NOTE: Power BI Functionality limited to the original Power BI report.

For visualization interaction (Search by title, viewing breakdowns for other profiles, tooltip hover) [please click here to view via my website](#)

Movies

2,448

Total Hours (Movies)

667

Movies Watched

Total Hours	Top 10 Movies
217	Kung Fu Panda
114	Scooby-Doo
91	Kung Fu Panda 2
91	Shrek 2
80	Scooby-Doo 2: Monsters Unleashed
56	Tangled
48	Cloudy with a Chance of Meatballs 2
36	Shrek the Third
34	Shrek
33	Megamind
800	

TV

3,709

Total Hours (TV Shows)

2546

Unique Episodes Watched

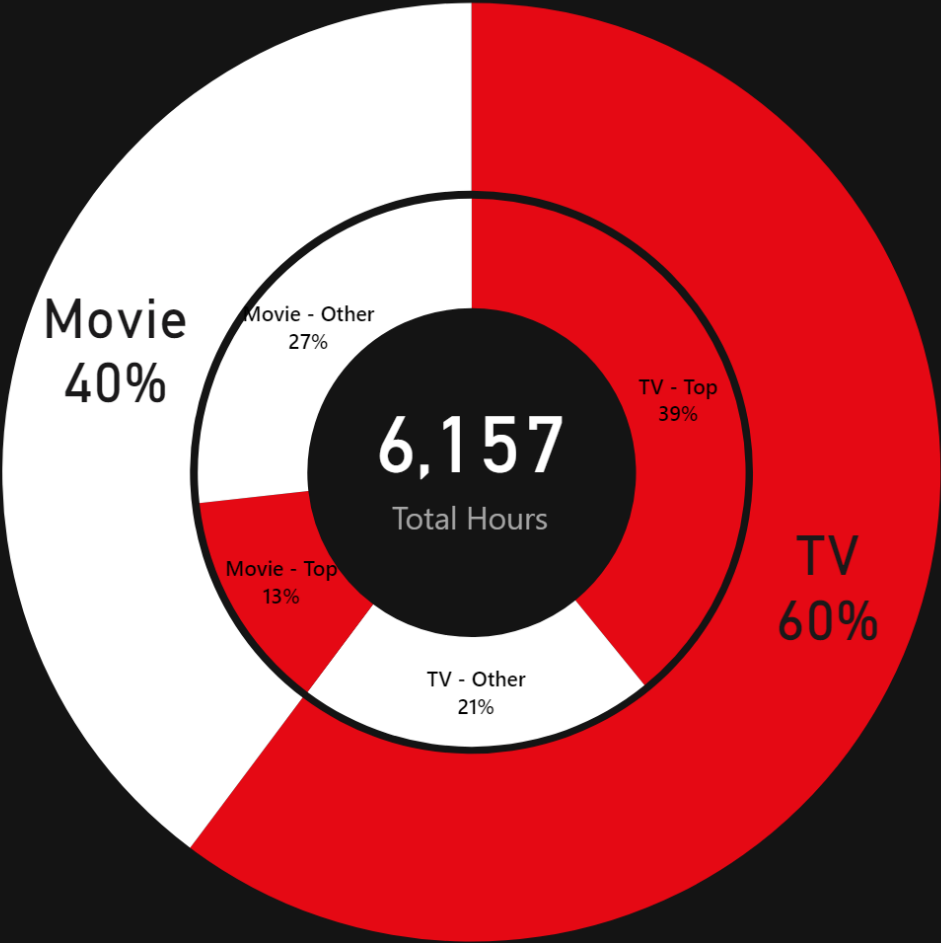
154

Series Watched

10426

Total Episodes Watched

Total Hours	Top 5 Shows
1,092	The Big Bang Theory
685	Brooklyn Nine-Nine
324	The Vampire Diaries
160	Prison Break
148	The Good Place
2,409	



3.69

Total Hours Per Viewing Day (Average)

7.94

Viewings Per Viewing Day (Average)

Saturday, 30 December 2017

17.88

Biggest Netflix Viewing Day (Hours)

Sunday, 7 June 2020

16.44

Biggest TV Viewing Day (Hours)

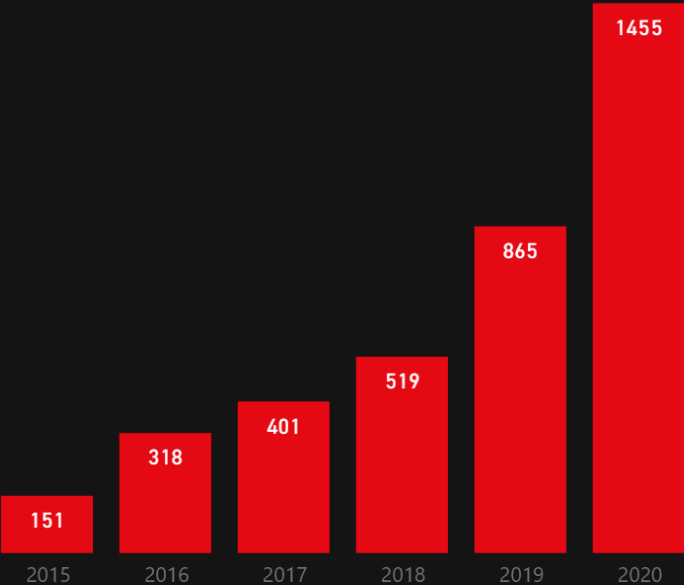
2546

Distinct Episodes Watched

10426

Total Episodes Watched

Total Hours by Year



Show Name

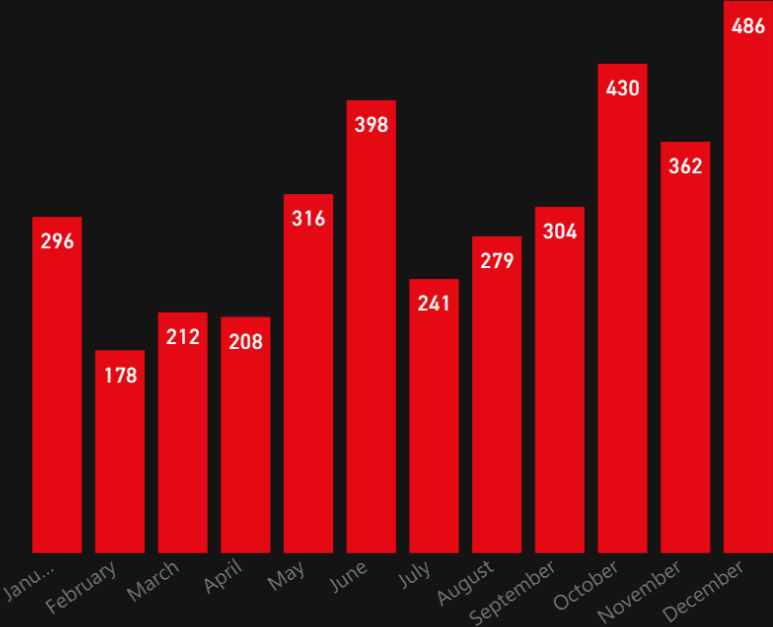
All

3,709

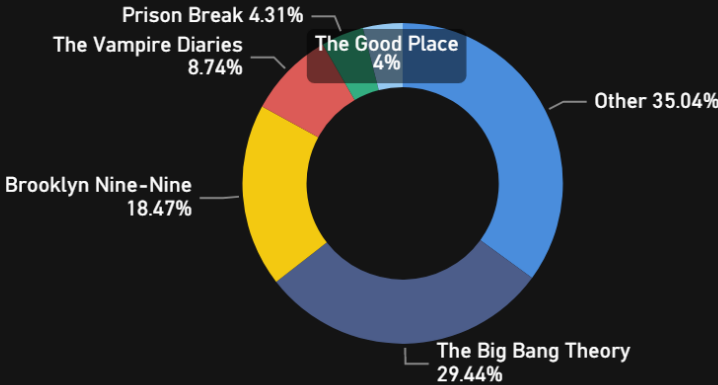
Total Hours

Top 5 Episodes	Total Hours
Brooklyn Nine-Nine: Season 1: Pilot (Episode 1)	12
Brooklyn Nine-Nine: Season 2: Undercover (Episode 1)	10
Brooklyn Nine-Nine: Season 2: Chocolate Milk (Episode 2)	10
Brooklyn Nine-Nine: Season 2: The Jimmy Jab Games (Episode 3)	9
Brooklyn Nine-Nine: Season 1: Charges and Specs (Episode 22)	9

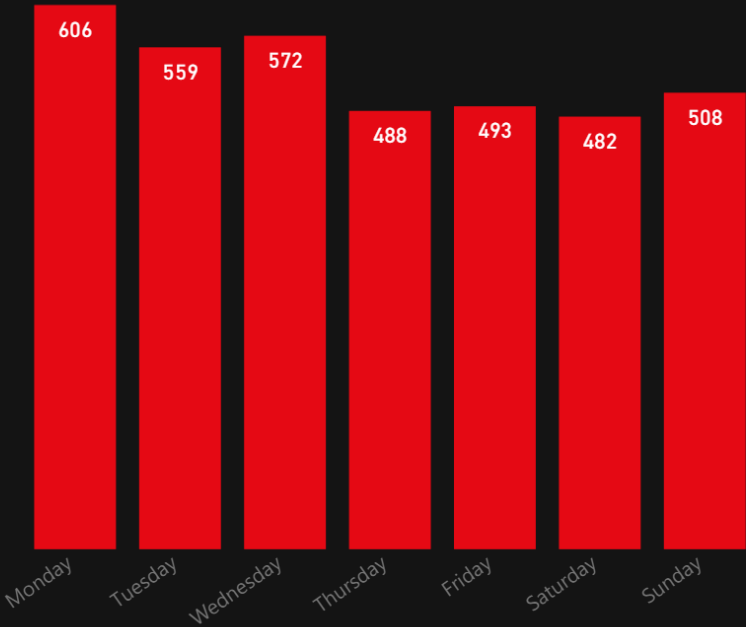
Total Hours by Month



Top Shows by Total Hours



Total Hours by Day



Friday, 4 March 2016

12.25
Biggest Movie Viewing Day

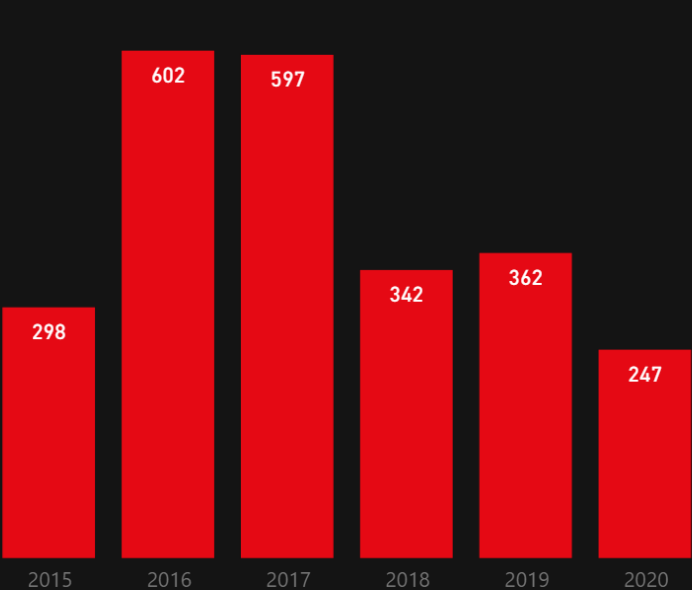
667

Unique Titles Watched

2842

Movie Viewings

Total Hours by Year



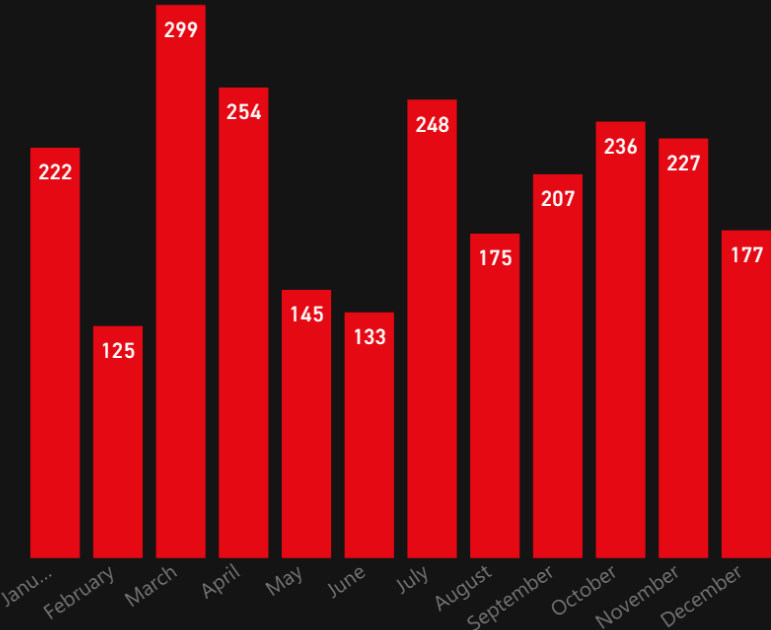
Title

All

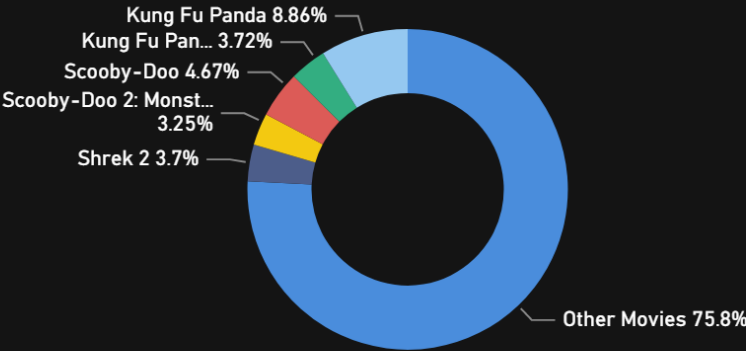
2,448.39
Total Hours

Top Films	Total Hours
Kung Fu Panda	217
Scooby-Doo	114
Kung Fu Panda 2	91
Shrek 2	91
Scooby-Doo 2: Monsters Unleashed	80

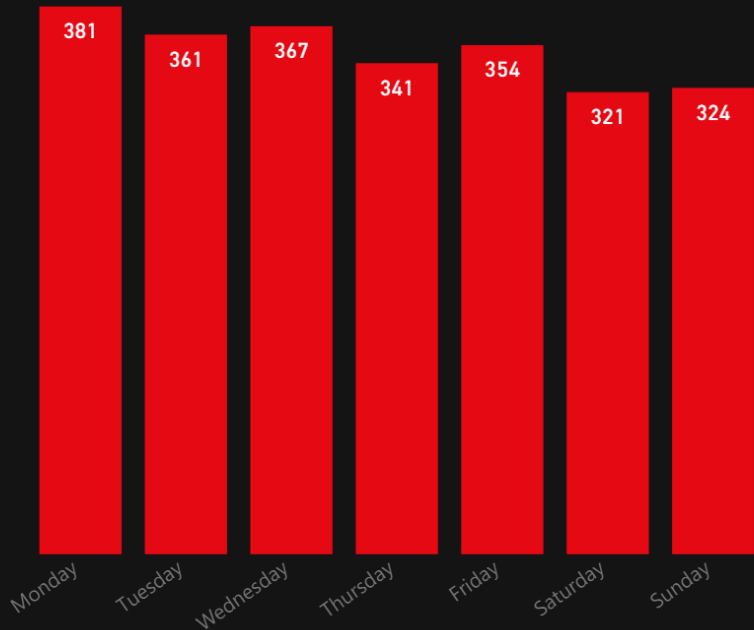
Total Hours by Month



Top Movies by Total Hours



Total Hours by Day





Duration And Time

51.69

Average Movie Viewing Duration (Minutes)

21.34

Average Episode Viewing Duration (Minutes)

The Lord of the Rings: The Fellowship of the Ring

172.38

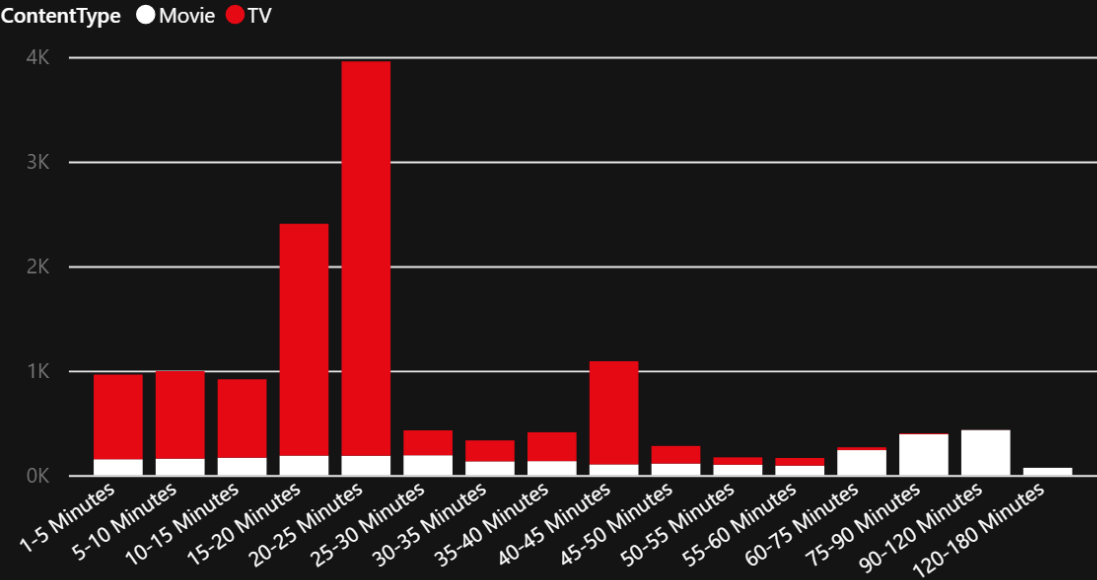
Longest Individual Viewing Duration (Minutes)

Kung Fu Panda

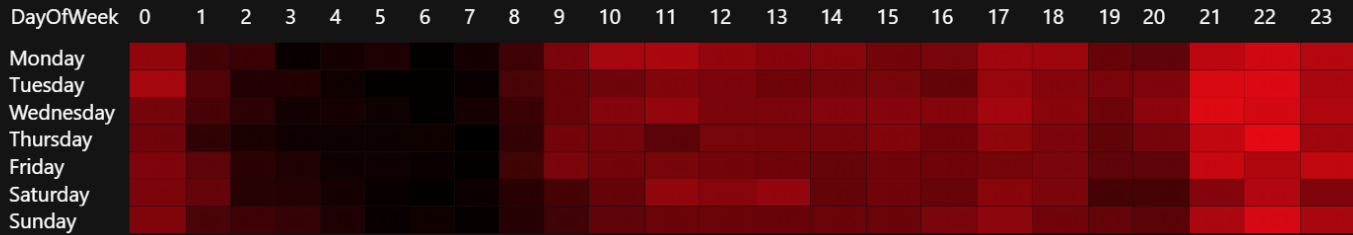
275

Most Viewed Title

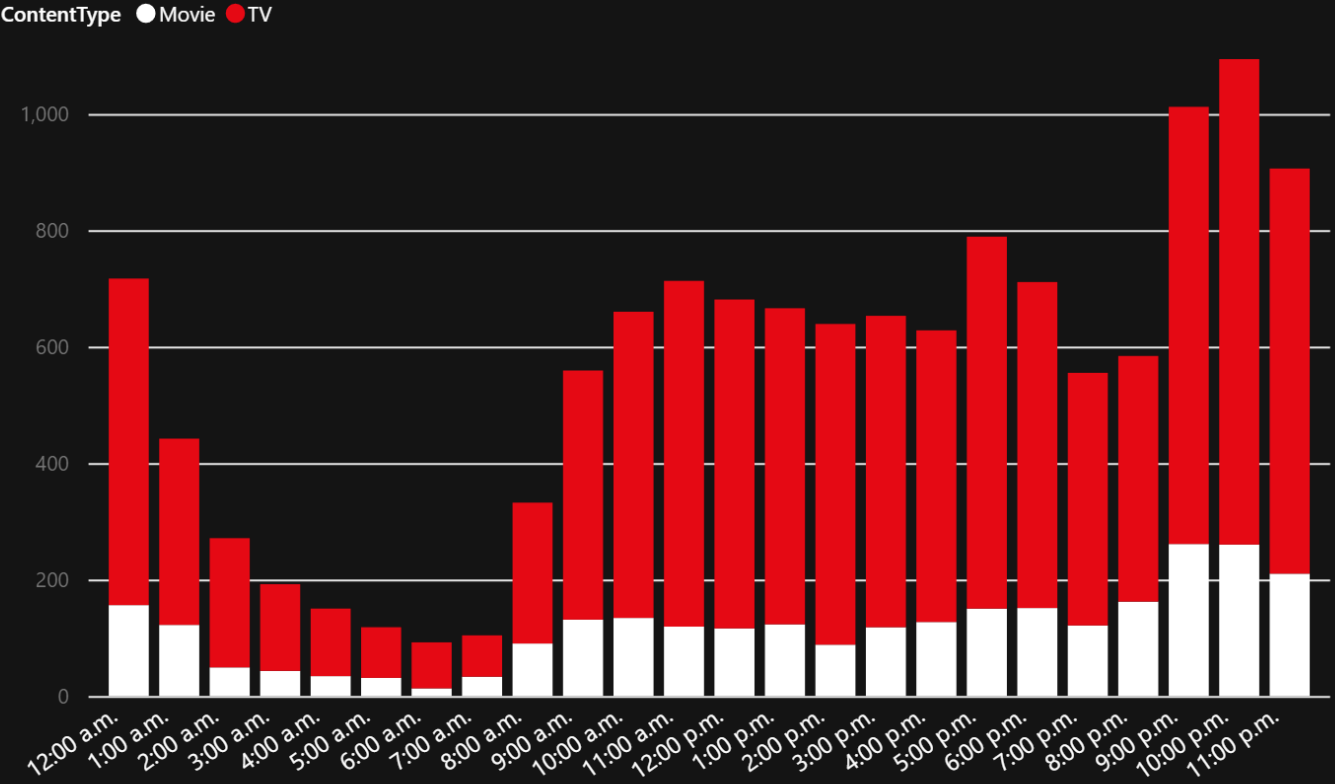
Title Viewing Duration by Content Type



Count of Viewings by Day and Hour



Hour of Viewing by Content Type





Year Compare

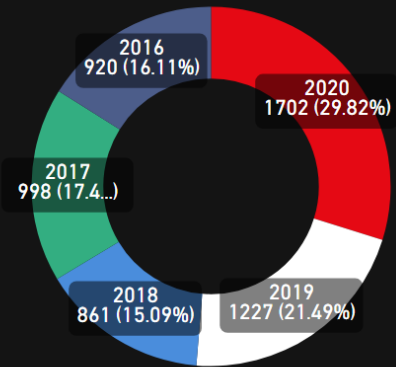
Profile

Leesh

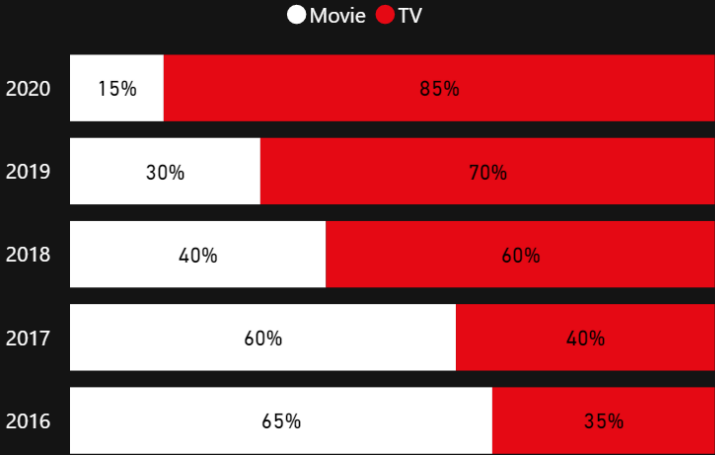
Start Date

1/01/201631/12/2020

Total Hours (%) by Year

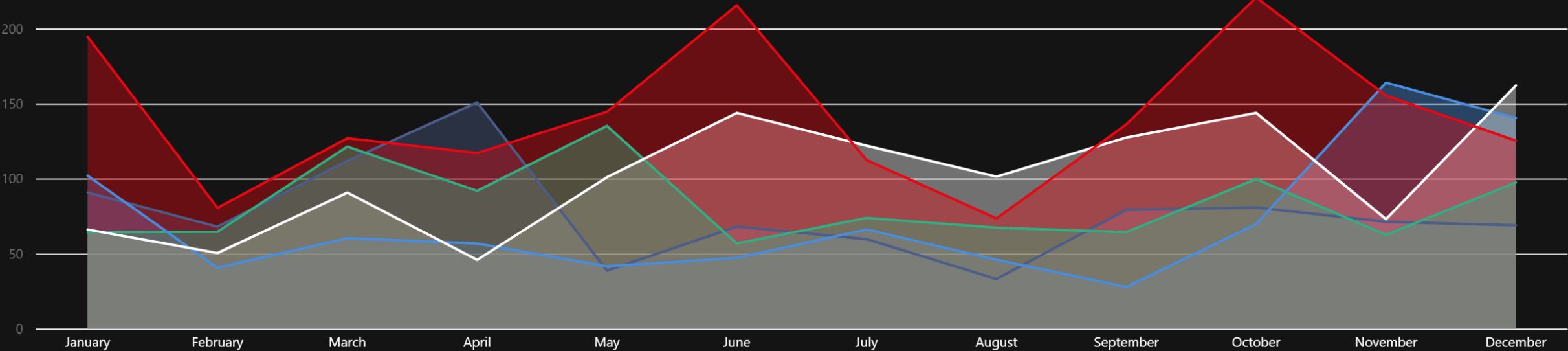


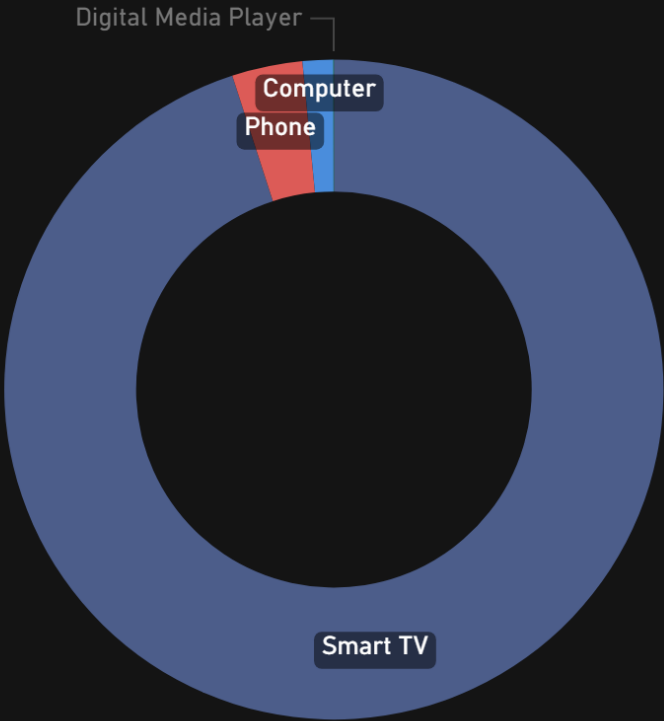
Total Hours (%) by Year and ContentType



Total Hours by Month and Year

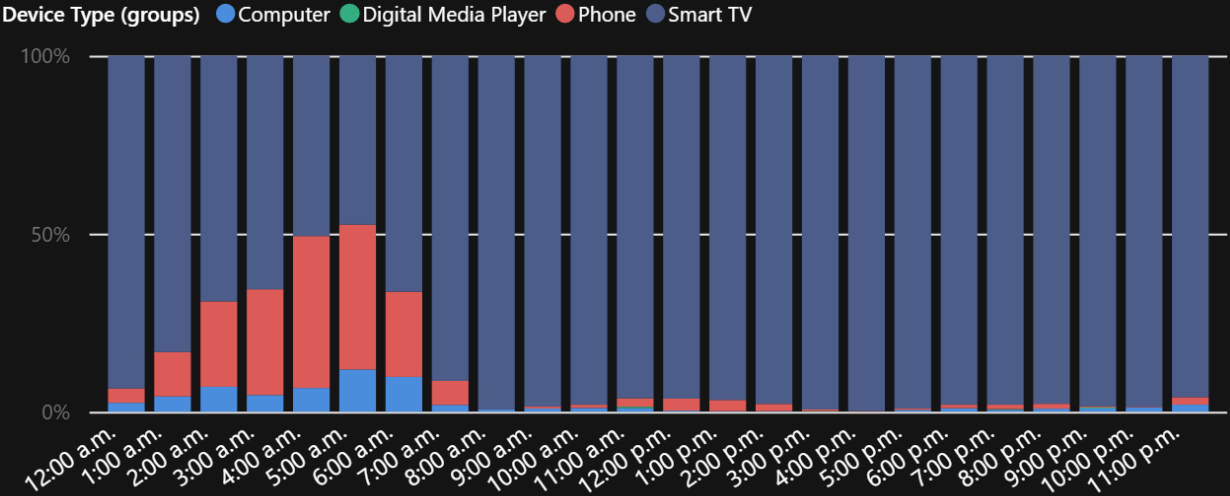
Year 2016 2017 2018 2019 2020



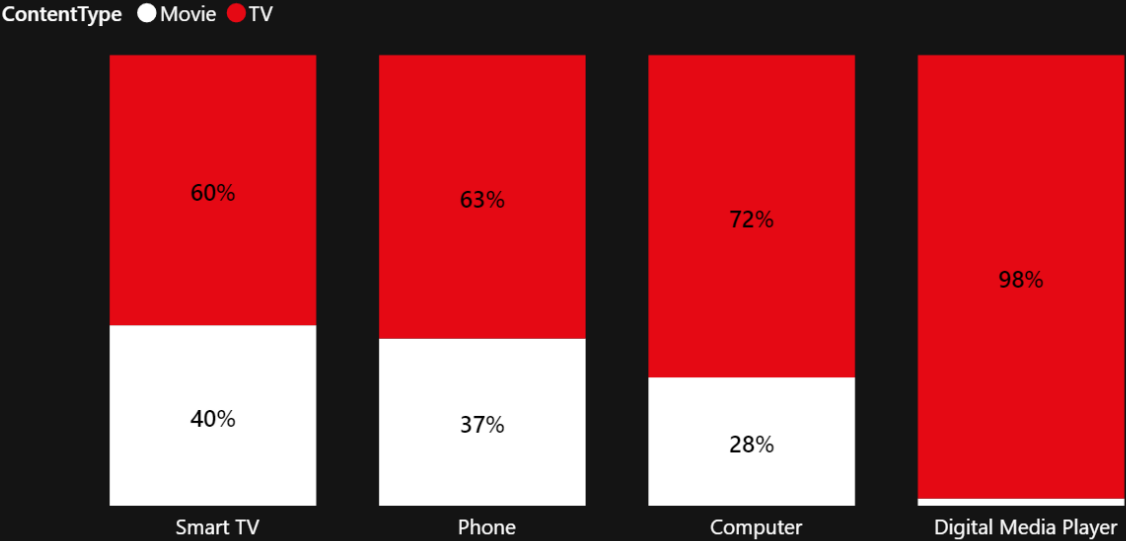


Device Type (groups)	Total Hours	%GT Total Hours
Smart TV	5,850.24	95.01%
Phone	213.26	3.46%
Computer	92.33	1.50%
Digital Media Player	1.59	0.03%

Hour of Viewing by Content Type



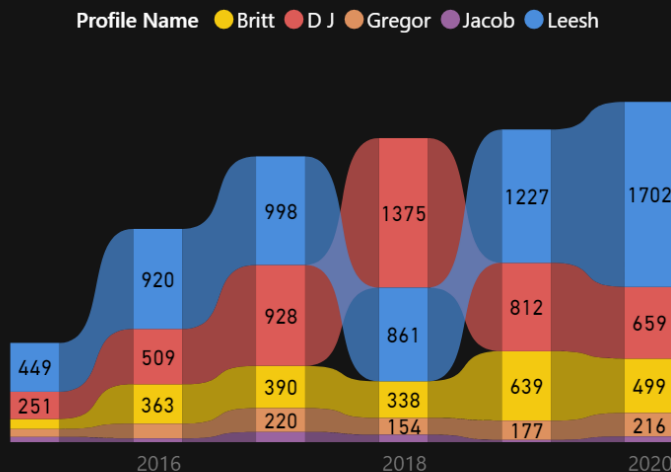
Total Hours by Device Type (groups) and ContentType



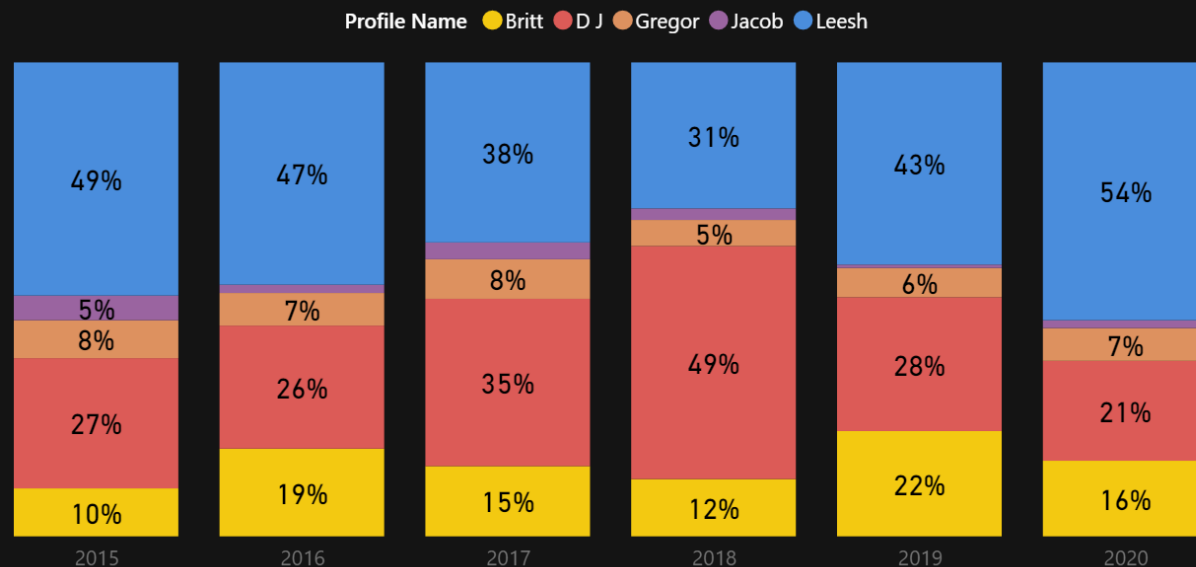


Leesh vs Other Users

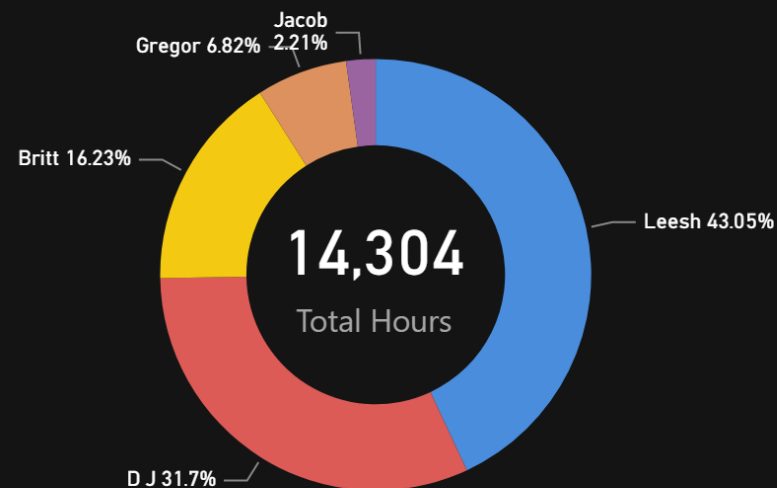
Total Hours by Year and Profile Name



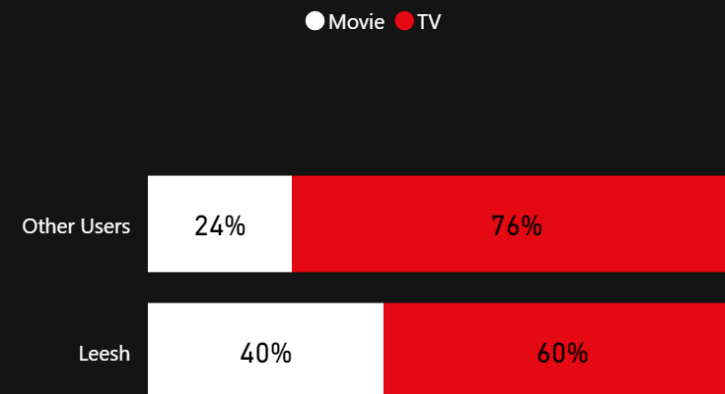
Total Hours by Year and Profile Name



Profile Name ● Leesh ● D J ● Britt ● Gregor ● Jacob

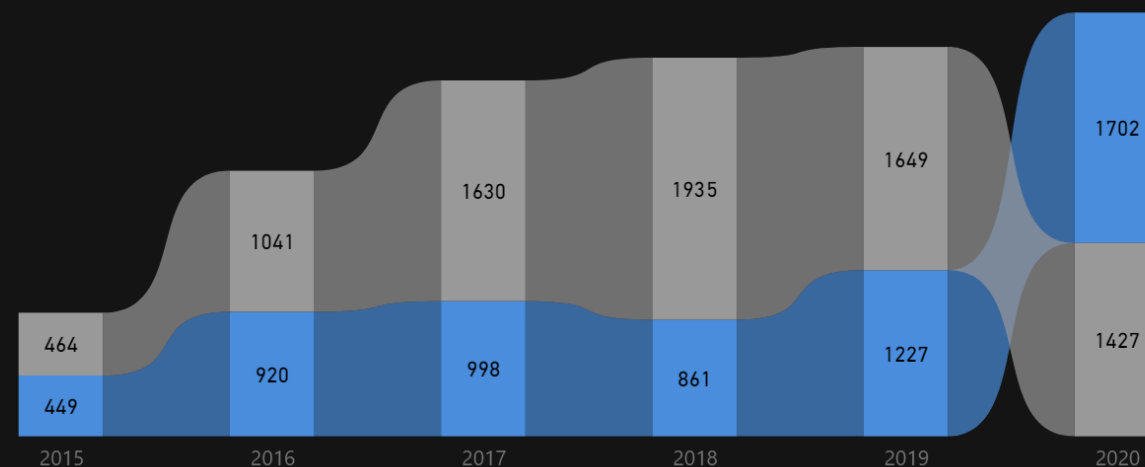


Total Hours by Profile Name (groups) and ContentType



Total Hours by Year and Profile Name (groups)

Profile Name (groups) ● Leesh ● Other Users





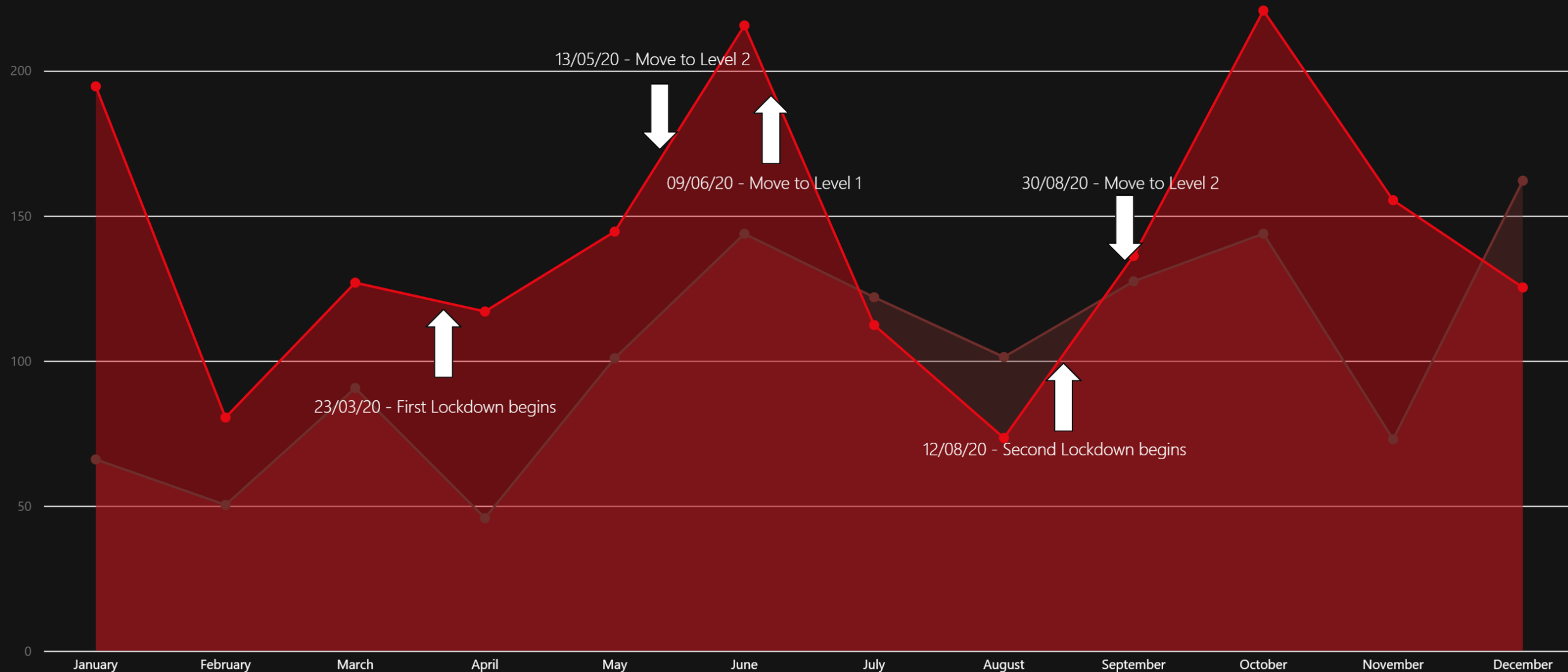
Pre Vs Post Pandemic

Profile

Leesh

Total Viewing Hours by Month (2020)

Year ● 2019 ● 2020



Findings

Hypothesis vs Findings

- **Big Bang Theory number 1 most viewed content**
 - True. Most viewed TV show, approximately 30% of all TV viewing at nearly 1100 hours. No other single title comes close.
- **Harry Potter series most viewed movies, dominating the Top 10**
 - False. No Harry Potter Titles in the Top 10 Films. Combined, Harry Potter Titles account for 96 Hours of viewing, less than half of that of Kung Fu Panda
- **Majority of viewing as TV shows**
 - True. TV Shows account for 60% of Leesh's viewing overall. In 2020, TV Shows accounted for 85% of her viewing hours.
- **Heaviest usage between 8pm-1am**
 - True. Heaviest usage at 10pm on average, with high viewing levels between 9pm-12am.
- **Leesh largest user on Netflix account, at least half of all viewing**
 - Partially true. Leesh is the largest single user by viewing hours, but only accounts for 43% of total viewing hours. In 2020 however, she did overtake all other cumulative users at 1702 Hours for Leesh vs 1427 Hours for all other users combined.
- **Usage increased over 2020 compared to previous year, decrease when Auckland released from lockdown**
 - True, Overall viewing up for all lockdown months. Viewing hours down to lower than 2019 levels in July, when Auckland left first lockdown.

Key Questions Answered

Q: What are the most viewed titles by Leesh?

A: For Film, Kung Fu Panda dominates. In TV and Overall, Big Bang Theory episodes eclipse all other titles

Q: How does her viewing differ by content type (TV or Movies)

A: TV Accounts for 60% of her viewing, with Movies at 40%. Leesh watches more varied content when watching films, and watches the same content more with TV.

Q: Does she watch more new content vs content already seen before?

A: 52% of all viewing by total hours was from the Top titles in TV and Movies. As noted above, when watching movies Leesh watches titles outside of the top 5-10 titles, but usually sticks to familiar titles when watching TV.

Q: How does Leesh's usage compare to other profiles on the account?

A: Leesh made up 43% of all viewing across all time on the account. In 2020, this was up to 54%. Despite watching TV more than Film at a 60/40 ratio, Other Users are more likely to watch TV shows, with 76% of all their viewing being TV.

Q: How did Covid-19 Lockdowns affect her viewing habits?

A: Compared to 2019, Leesh's viewing was up significantly in months where she was in lockdown. Viewing also went down when lockdown restrictions were lifted initially.

Next Steps

- Request 2021 data, compare with 2020
- Request alternate streaming service data (Disney+, Lightbox etc.)
- Attempt to assign genre information to titles

Thanks for reading!

Find me:

LinkedIn - <https://www.linkedin.com/in/tom-white-2034728a/>

Website - <https://tomjwhite.github.io/>



The Flat Fam (Aleesha, Daisy, Tom) with cats Charlie and Coby.