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#LifeKoKaroLift

Instructor-led live session on data storytelling

Powell Menezes

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Lecture On : Data Storytelling

Instructor : Powell Menezes

iso3c	region_id	country_name	income_id	gdp	composition_food_organic_waste_percent	composition_glass_percent	composition_metal_percent	composition_other_percent	composition_paper_car
ABW	LCN	Aruba	HIC	35563.3125	NA	NA	NA	NA	NA
AFG	SAS	Afghanistan	LIC	2057.062256	NA	NA	NA	NA	NA
AGO	SSF	Angola	LMC	8036.69043	51.8	6.7	4.4	11.5	
ALB	ECS	Albania	UMC	13724.05859	51.4	4.5	4.8	15.21	
AND	ECS	Andorra	HIC	43711.80078	31.2	8.2	2.6	11.6	
ARE	MEA	United Arab Emirates	HIC	67119.13281	39	4	3	10	
ARG	LCN	Argentina	HIC	23550.09961	38.74	3.16	1.84	15.36	
ARM	ECS	Armenia	UMC	11019.83887	57	3.2	3.4	17.4	
ASM	EAS	American Samoa	UMC	11113.44238	19.7	3.4	7.9	25.6	

special_waste_e_waste_tons_year	special_waste_hazardous_waste_tons_year	special_waste_industrial_waste_tons_year	special_waste_medical_waste_tons_year	total_msw_total_msw_generated_tons_year	waste_collection
NA	NA	NA	NA	88132.0167	NA
20000	NA	NA	9855	5628525.37	NA
92000	NA	NA	5495.95	4213643.585	NA
20000	5714.82	270269	114.3	1087446.75	NA
NA	1788	NA	NA	43000	NA
134000	57525	3306644	4573	5617682	NA
291700	310044	NA	NA	17910550	NA
14000	62270	47310540	NA	492800	NA

waste_treatment_recycling_percent	waste_treatment_sanitary_landfill_landfill_gas	waste_treatment_unaccounted_for_percent	waste_treatment_waterways_marine_percent	where_where_is_this_data_measured
11	NA	89	NA	NA
NA	NA	NA	NA	Other
NA	NA	NA	NA	NA
NA	NA	NA	NA	Some disposal sites
NA	NA	47.9	NA	NA
20	NA	NA	NA	NA
6	62.5	NA	NA	Other
NA	NA	NA	NA	Other

Wasted Planet!

Waste generated per day

2.5 Million Tons

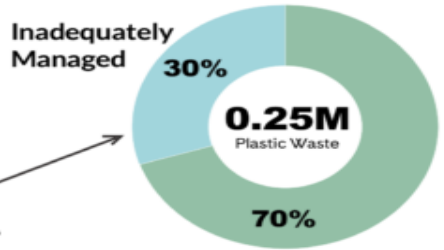
About 100 Countries keep their mismanaged plastic waste to less than **25%**

With the same rate, China can construct another great wall with plastic waste in **6 years!**

TRINIDAD AND TOBAGO has the highest plastic waste generation per capita at

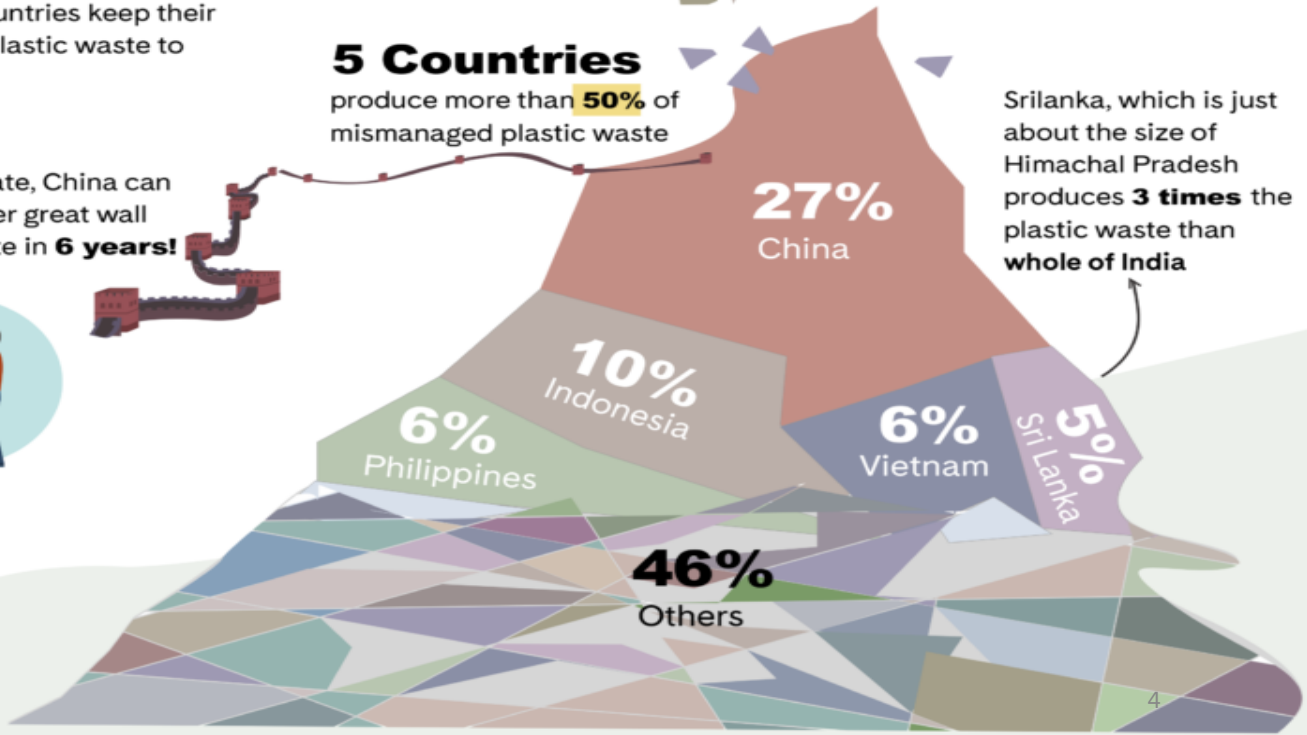
3.6 Kg / Day

US Produces the highest plastic waste, more than **128 countries** combined but more than **99%** of generated waste is properly managed



5 Countries

produce more than **50%** of mismanaged plastic waste



Srilanka, which is just about the size of Himachal Pradesh produces **3 times** the plastic waste than **whole of India**

Agenda

- What is Storytelling?
- Why Storytelling is essential?
- How to tell effective Data Story?
- Types of dataset & appropriate charts
- Storytelling during Predictive Model building
- Demonstration on Dataset
- Q & A

What is Storytelling ?

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Data visualization expert **Stephen Few** said, “Numbers have an important story to tell. They rely on you to give them a clear and convincing voice”

Data storytelling is a structured approach for communicating data insights, and it involves a combination of three key elements: ***data***, ***visuals***, and ***narrative***.

What is Storytelling ?

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Power of Storytelling

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Data storytelling is about communicating your insights effectively, giving your data a voice

Why Story telling is essential?

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- **Memorability-** A study by Stanford professor Chip Heath found 63% could remember stories, but only 5% could remember a single statistic. People hear statistics, but they feel stories

- Most of the people in an organization cannot understand the outcome of analytics, however they do need **proof of analysis and data**.

- Data storytellers help an organization to figure out the various types of stories that can be told with data –**reporting stories, explanatory stories, predictive stories, causation stories, correlation stories, etc.**

- The main goal of big data analytics is to influence how someone takes an action or makes a decision. you cannot **convince your stakeholders** for a change unless they understand what insights you have gathered.

- It is **boring and time consuming** for stakeholders to look at all the quantitative analysis

Why Story telling is essential?

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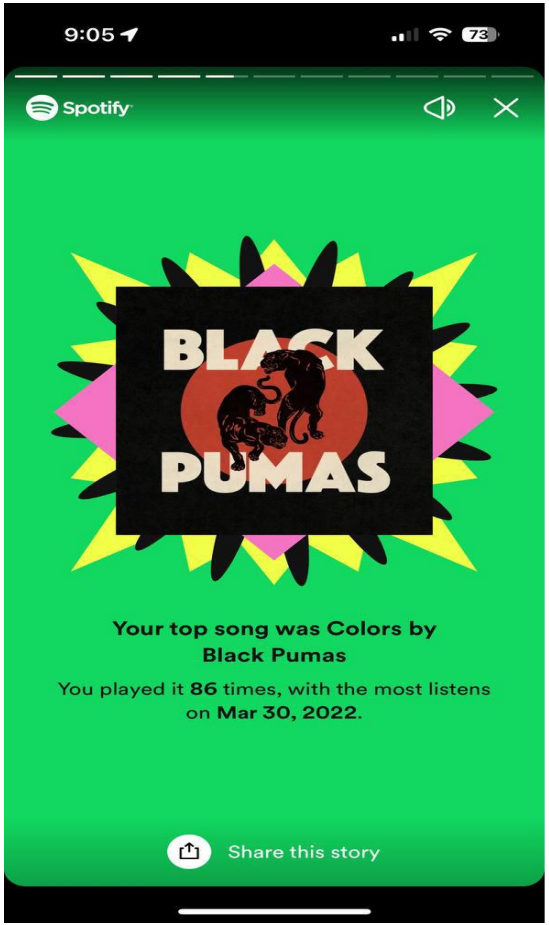

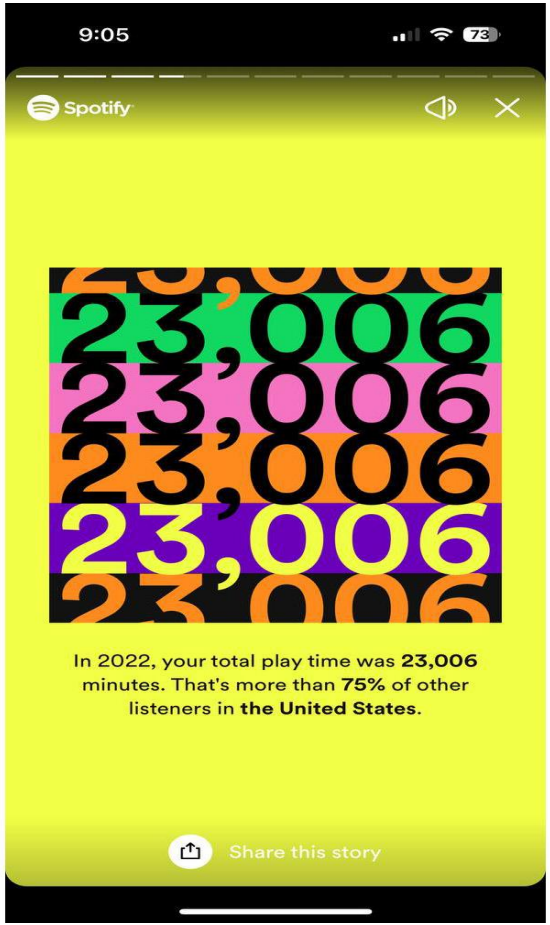

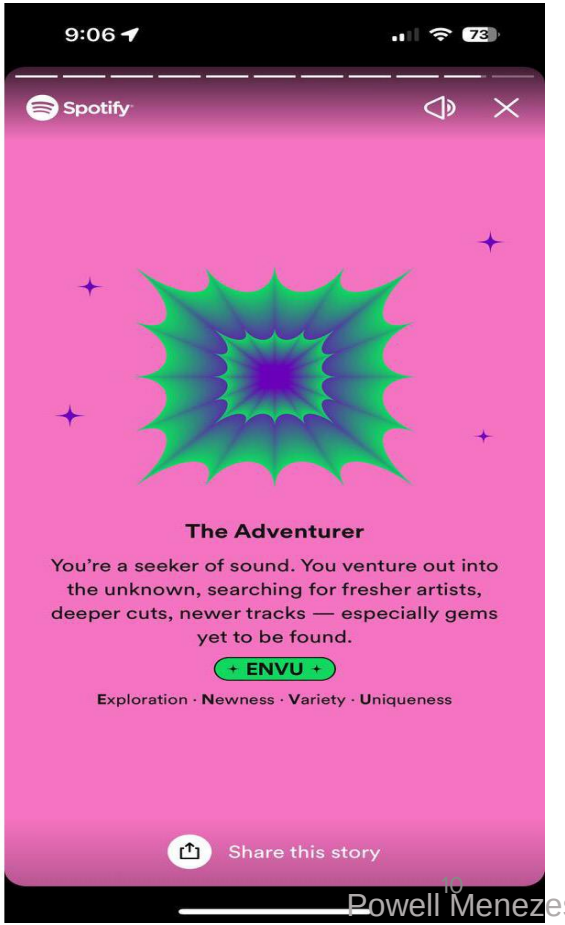

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Why Story telling is essential?

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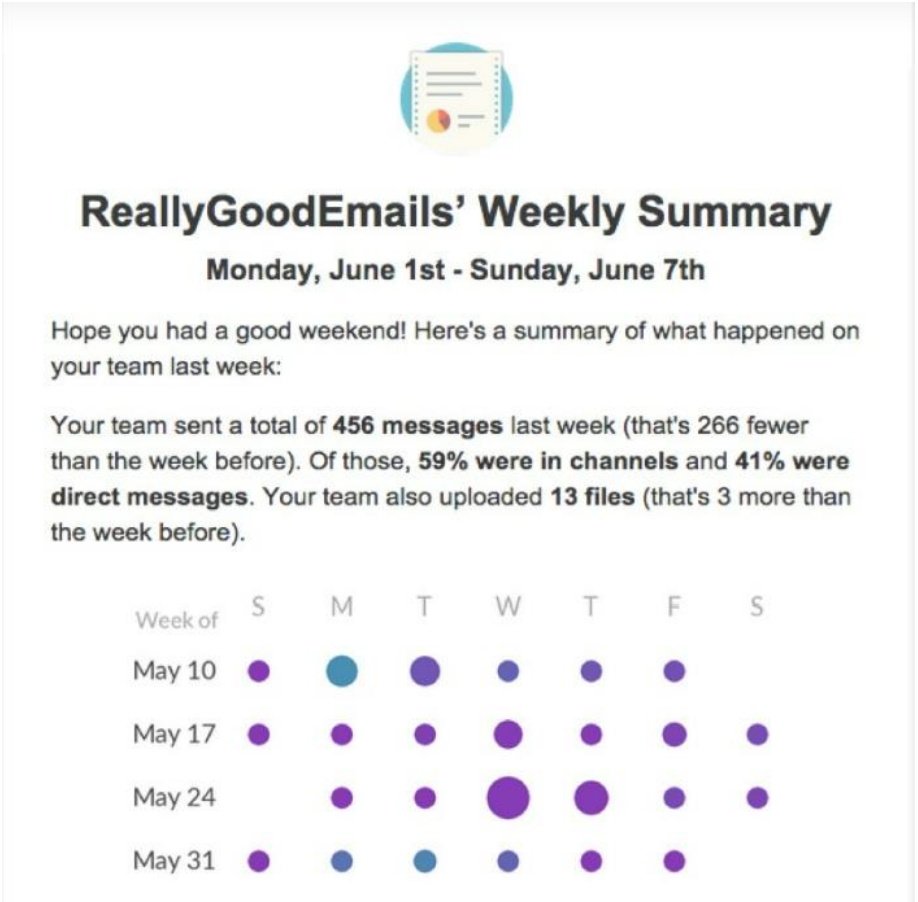

Why Story telling is essential?

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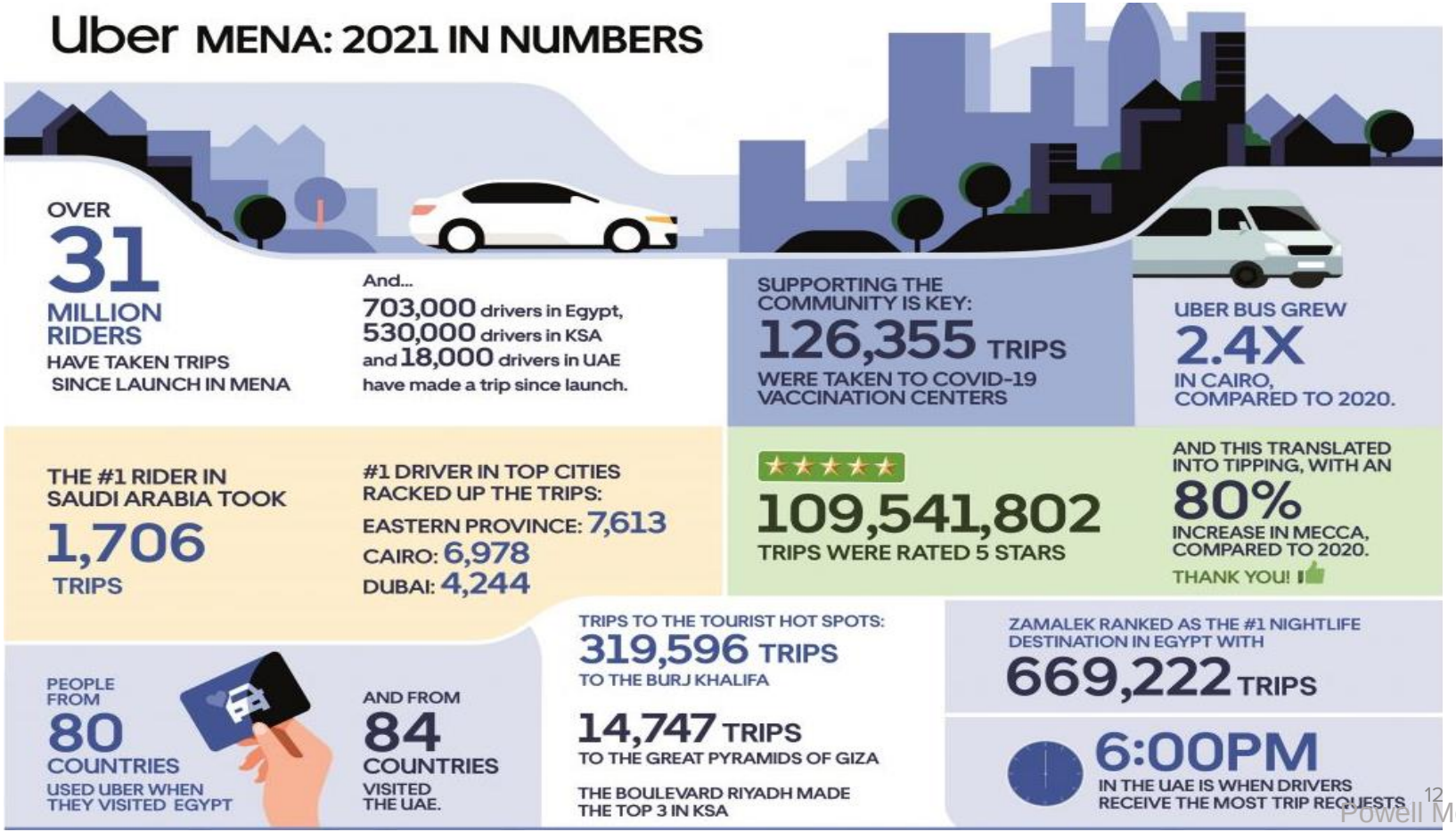

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How to tell effective Data Story?

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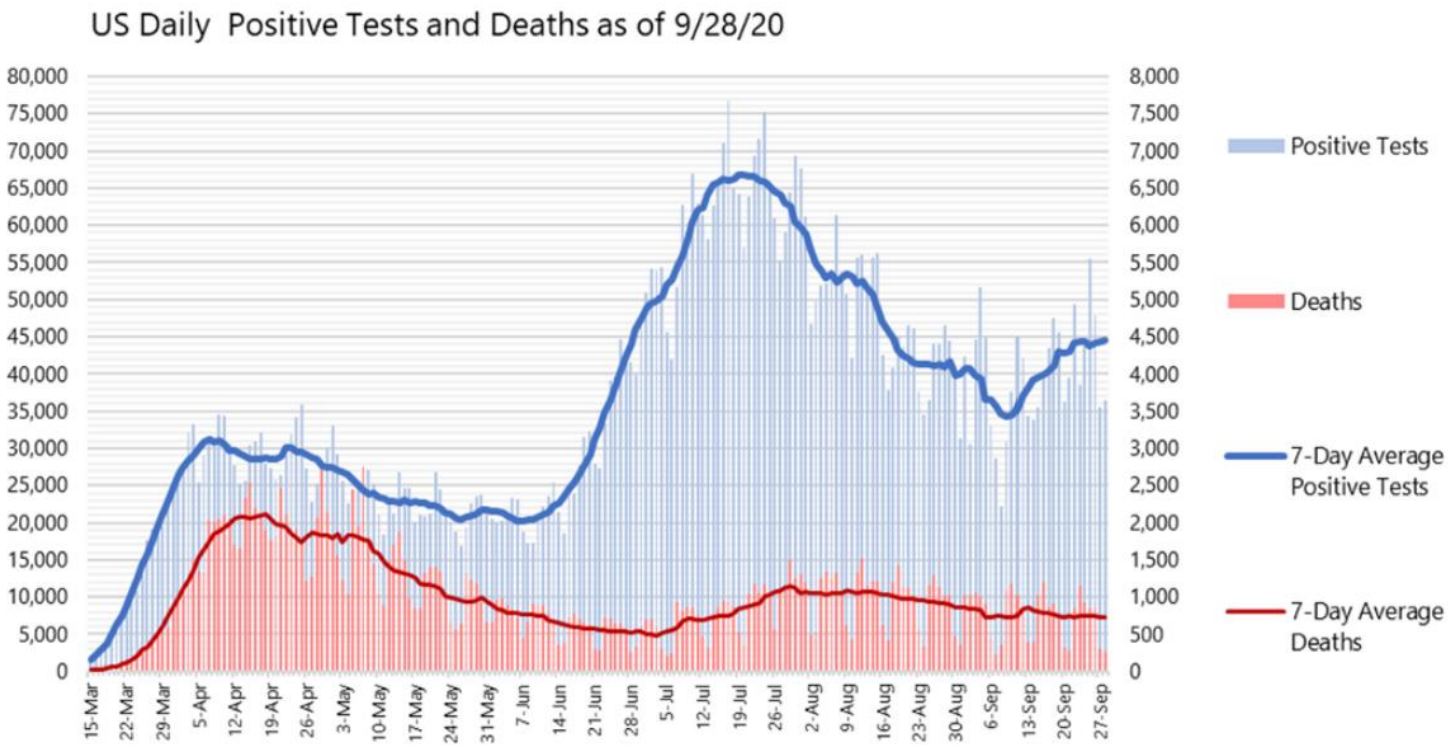
1. Define Your Objectives and Know Your Audience
2. Identify a Compelling Narrative
3. Be Objective and Transparent
4. Choose the Right Data Visualization Method
5. Make Your Data Story Insightful
6. Create Synergies Between Data Storytelling and Content

Identify a Compelling Narrative - Trend



Identify a Compelling Narrative - Comparison

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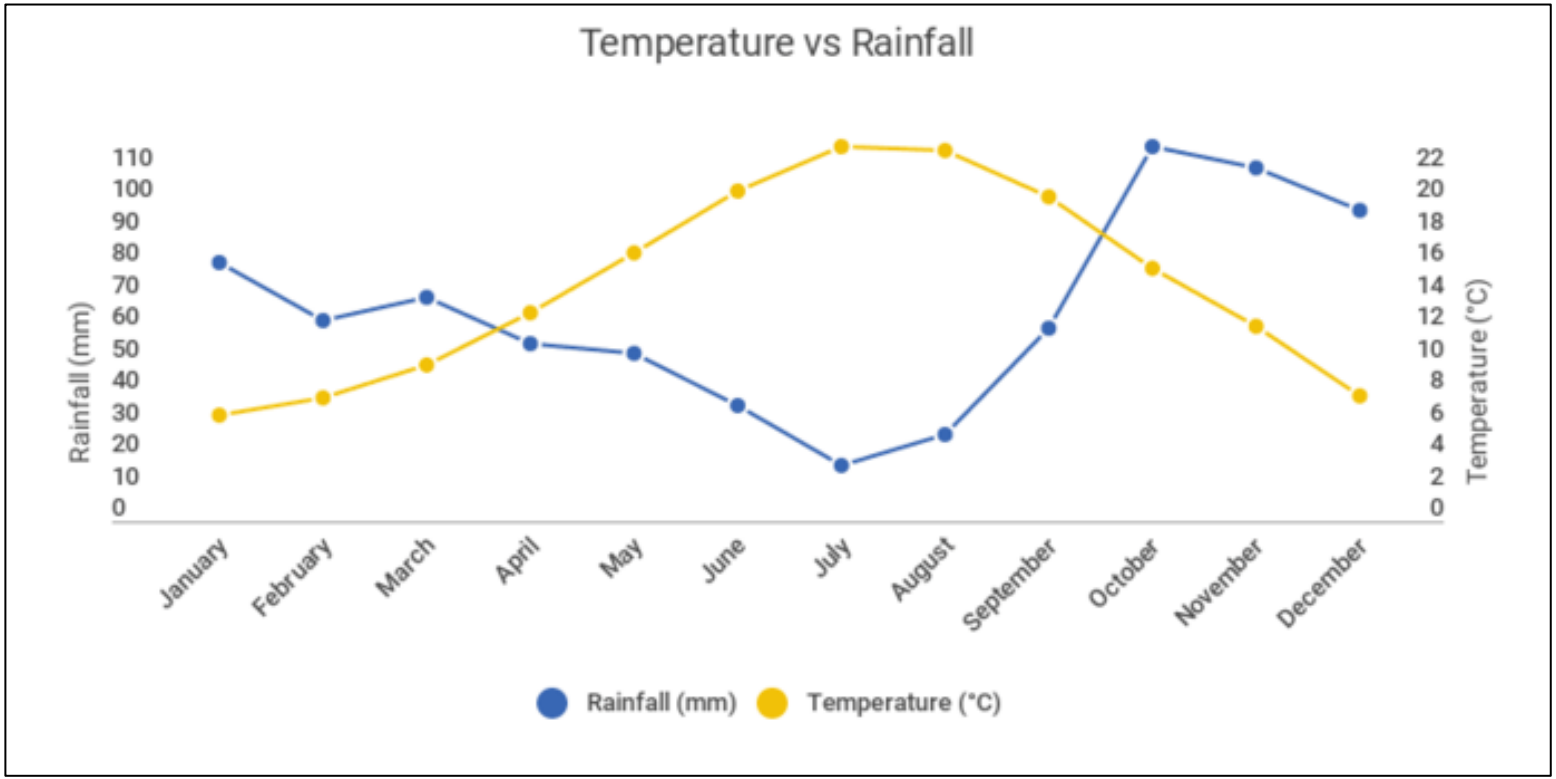

Identify a Compelling Narrative – Rank order

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Decile		Default=1	Default=0
Rank_group	# of Customers	Defaulting customers	Non defaulting customers
1	1000	325	675
2	1000	295	705
3	1000	263	737
4	1000	270	730
5	1000	194	806
6	1000	157	843
7	1000	180	820
8	1000	69	931
9	1000	34	966
10	1000	16	984
Total	**10000**	**1803**	**8197**

Default Rate
32.5%
29.5%
26.3%
27.0%
19.4%
15.7%
18.0%
6.9%
3.4%
1.6%
18.0%

Identify a Compelling Narrative – Statistical Relationship

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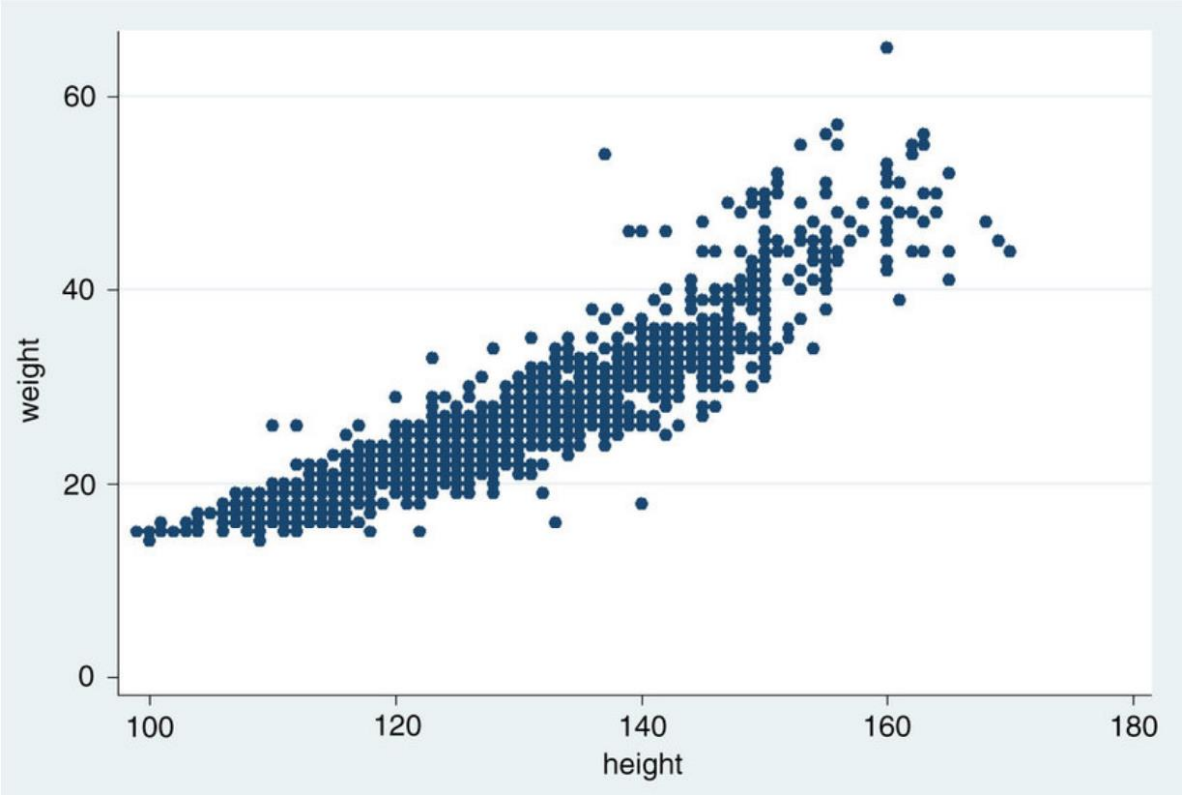

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Choose the Right Data Visualization Method

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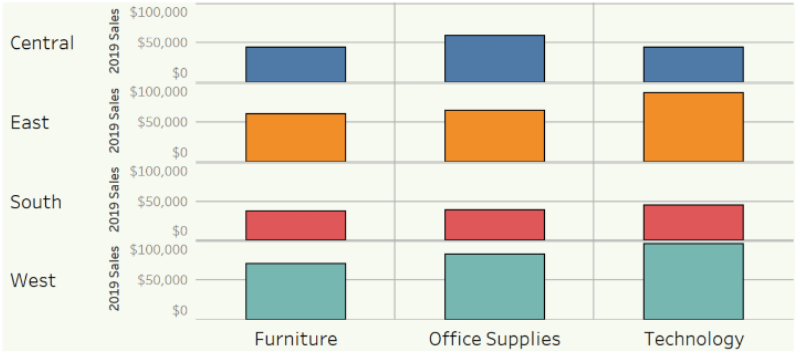
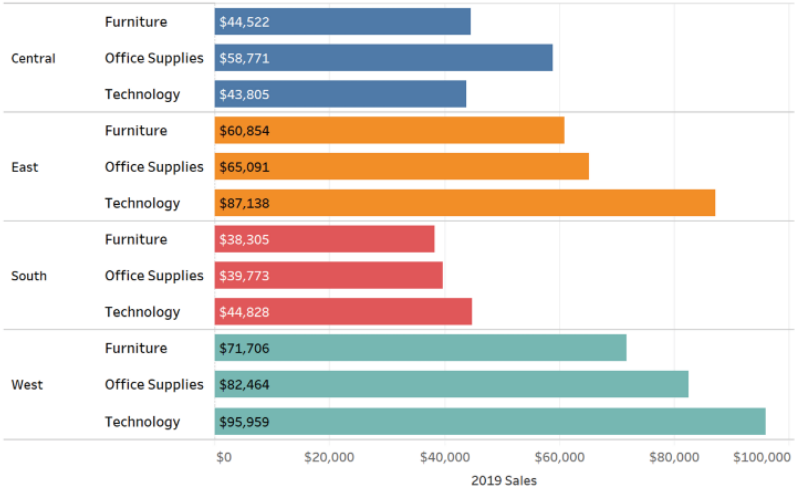
sales by region and category



	Central	East	South	West
Furniture	$44,522	$60,854	$38,305	$71,706
Office Supplies	$58,771	$65,091	$39,773	$82,464
Technology	$43,805	$87,138	$44,828	$95,959

ineffective

sales by region and category



effective

Choose the Right Data Visualization Method

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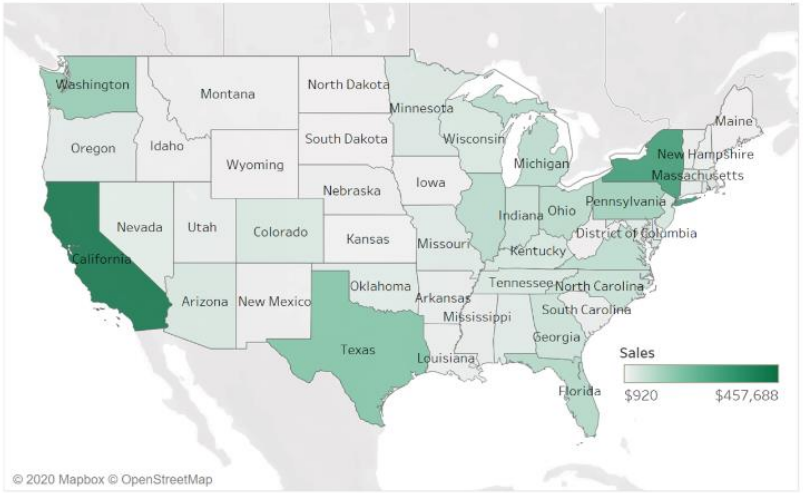
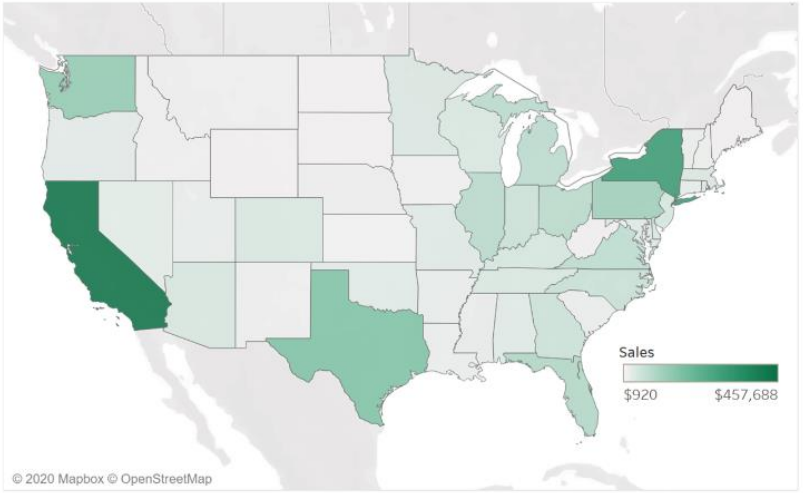
total sales map



! ineffective

total sales map



effective

Flow of Storytelling

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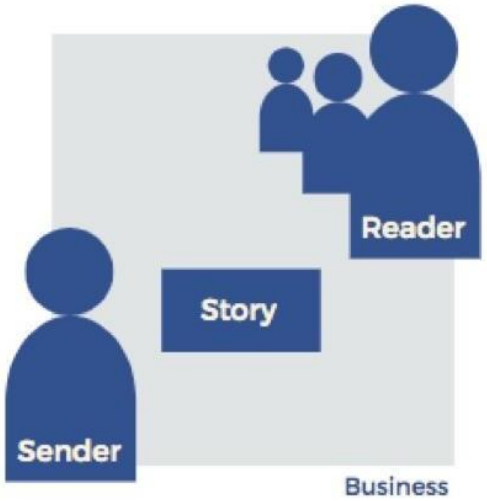
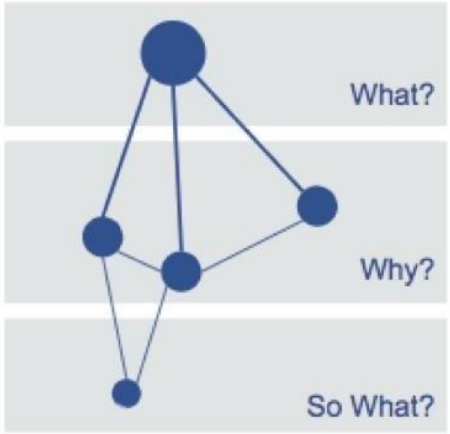
Context



Narrative



Effective Visuals

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1.Begin with Pen-Paper Approach

- Scripting down your ideas and flow before you start
  structuring your story is very essential

Aristotle's classic five-point plan that helps deliver strong impacts is:

- Deliver a story or statement that arouses the audience's interest.
- Pose a problem or question that has to be solved or answered.
- Offer a solution to the problem you raised.
- Describe specific benefits for adopting the course of action set forth in your solution.
- State a call to action.

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2. Dig deeper to identify the Ultimate purpose of your story

- Identify closely, what the idea of your story is.
- Ask yourself, “What am I really giving with this story?”
- What you’re displaying is the idea of a better decision making.

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3.Design a Road Map

- Create a list of all the key points you want your audience to know about your story, visual, or analysis.
- Categorize the list until you are left with only three major message points. This group of three will provide the verbal road map for your story.
- Under each of your three key messages, add supporting evidence to enhance the narrative. These could include some or all of the following: personal stories, facts, examples, analogies etc.

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1. Textual Data

One of the best-suited visualizations for textual data is the WordCloud. The wordcloud brings the more frequent ones to the center and enlarges them, giving us a clear picture of what the general idea of the text depicts.

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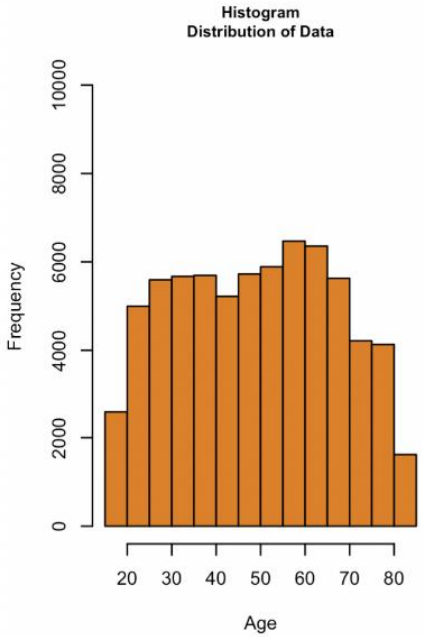
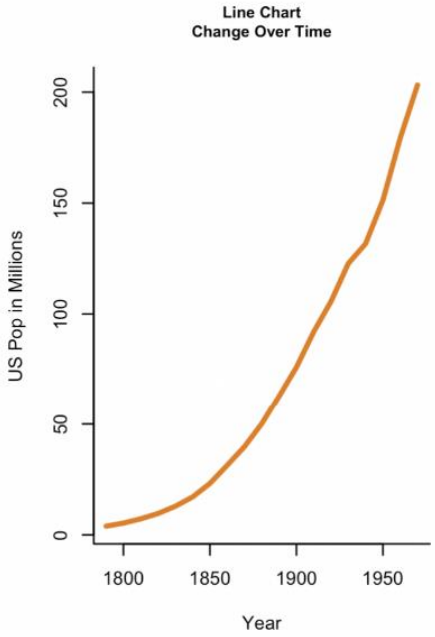
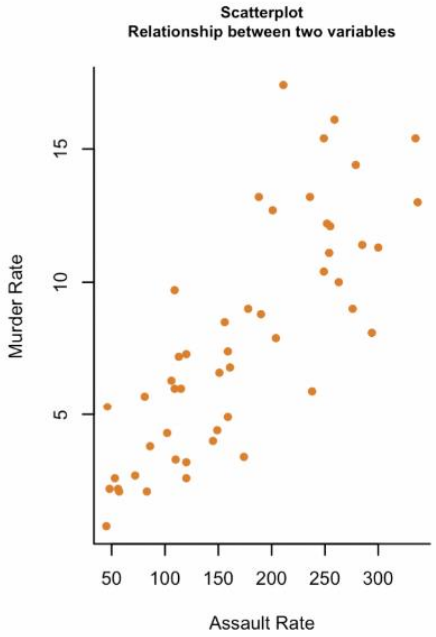
Graphs for Continuous Data







Types of Data and Suitable Charts

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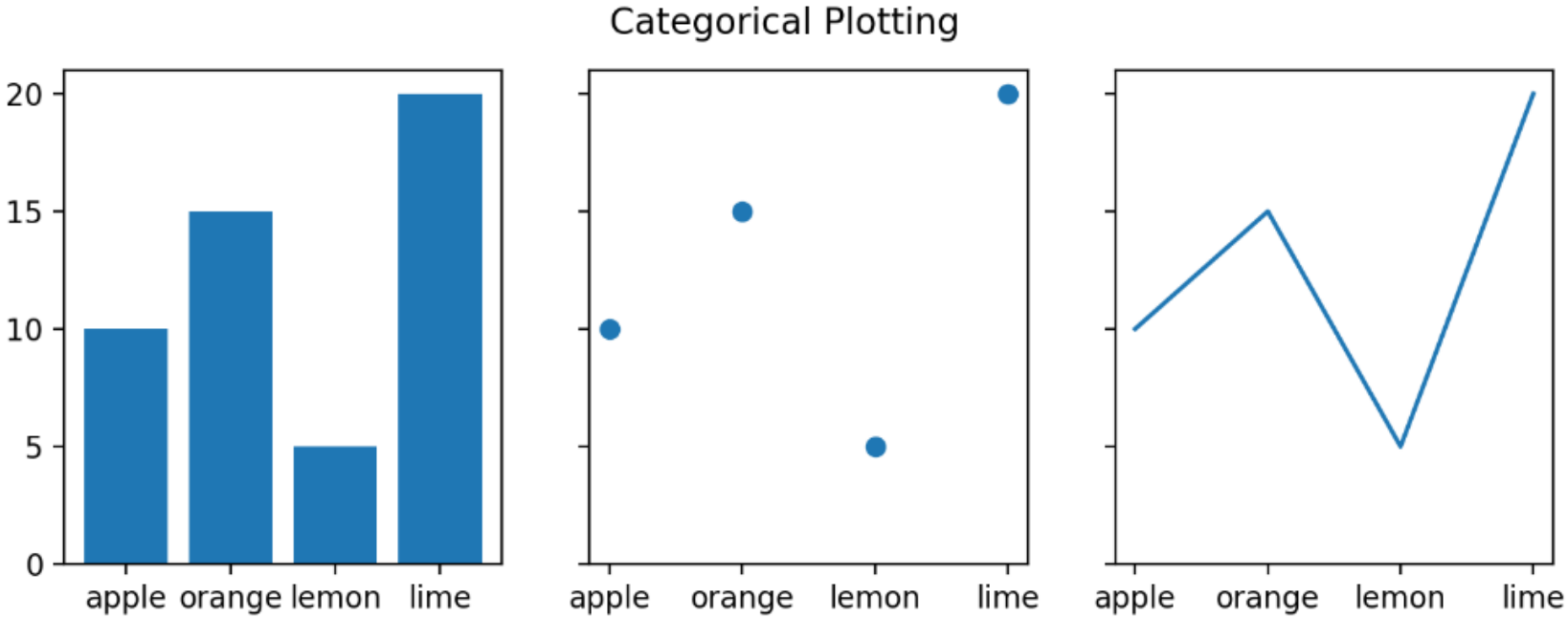

Types of Data and Suitable Charts

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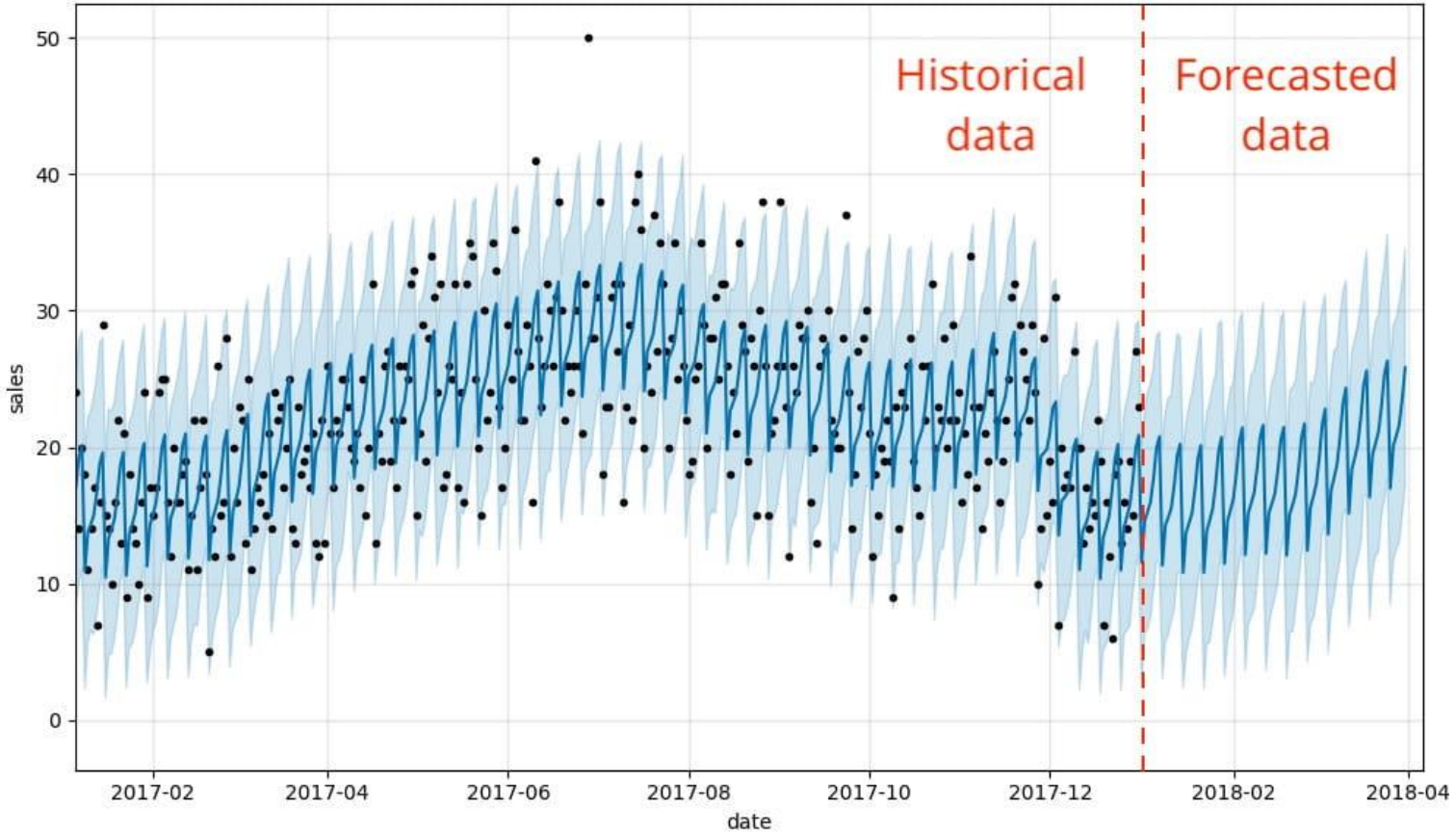

Storytelling during Predictive Model building

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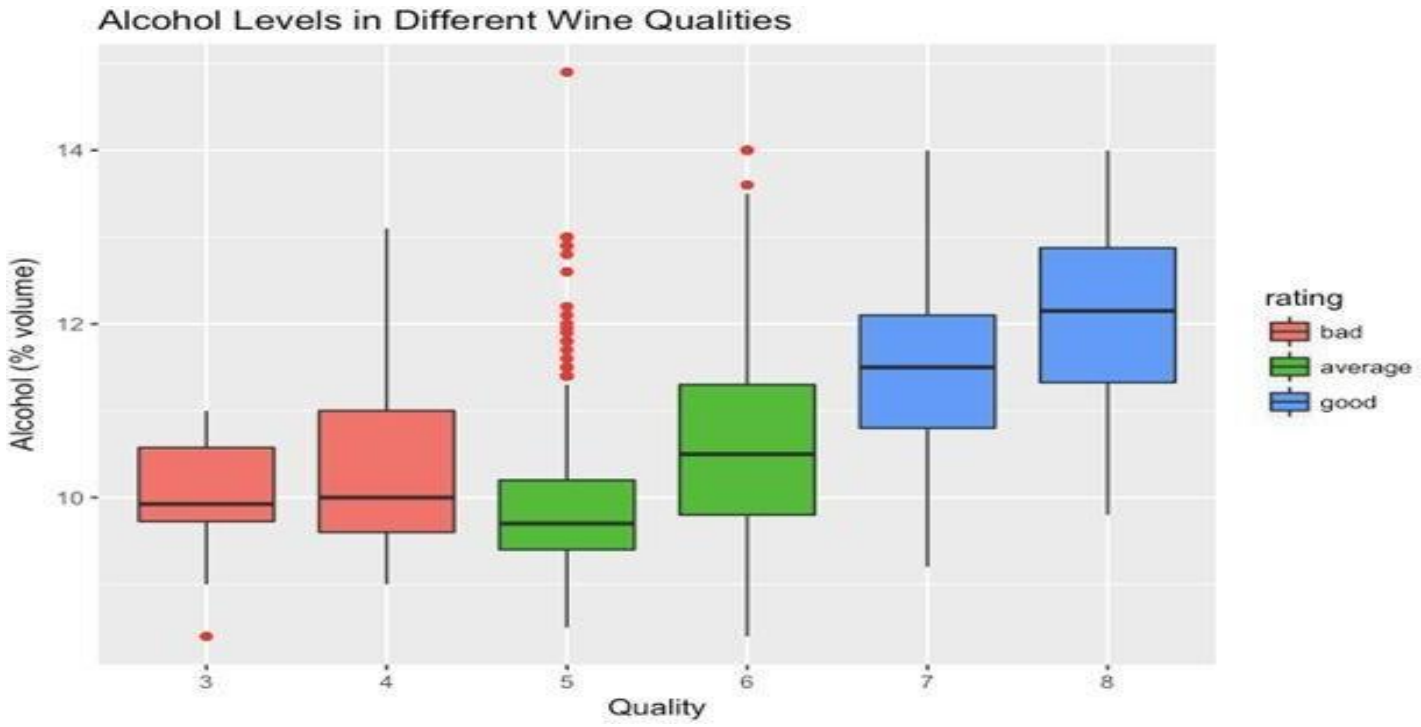

Demo

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Netflix Timeline

1997 — Netflix was founded.

1998 — Netflix.com launches.

1999 — Netflix begins offering a subscription-based DVD-by-email services.

2005 — Netflix has more than 5 Million subscribers.

2007 — Netflix streaming launches.

2010 — Netflix goes international by launching in Canada.

2011 — Netflix becomes available in Latin America and the Caribbean.

2013 — Netflix launches it's first three original series, House of Cards, Hemlock Grove, and Orange is the New Black.

2016 — Netflix goes worldwide.

2017 — Netflix surpasses 100 Million subscribers.

2019 — Netflix currently has just under 150 Million subscribers.

2021 — Netflix has more than 200 Million subscribers in over 190 countries.

Demo

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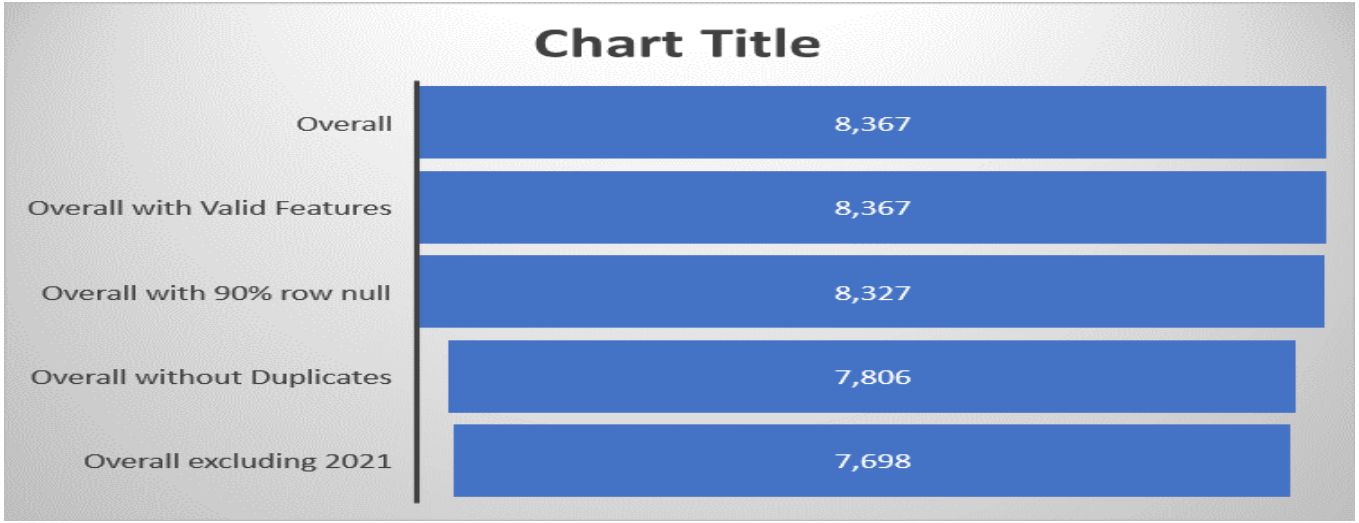
Waterfall	#Records	#Features
Overall	8,367	13
Overall with Valid Features	8,367	12
Overall without 90% row null	8,327	12
Overall without Duplicates	7,806	12
Overall excluding 2021	7,698	12



Demo

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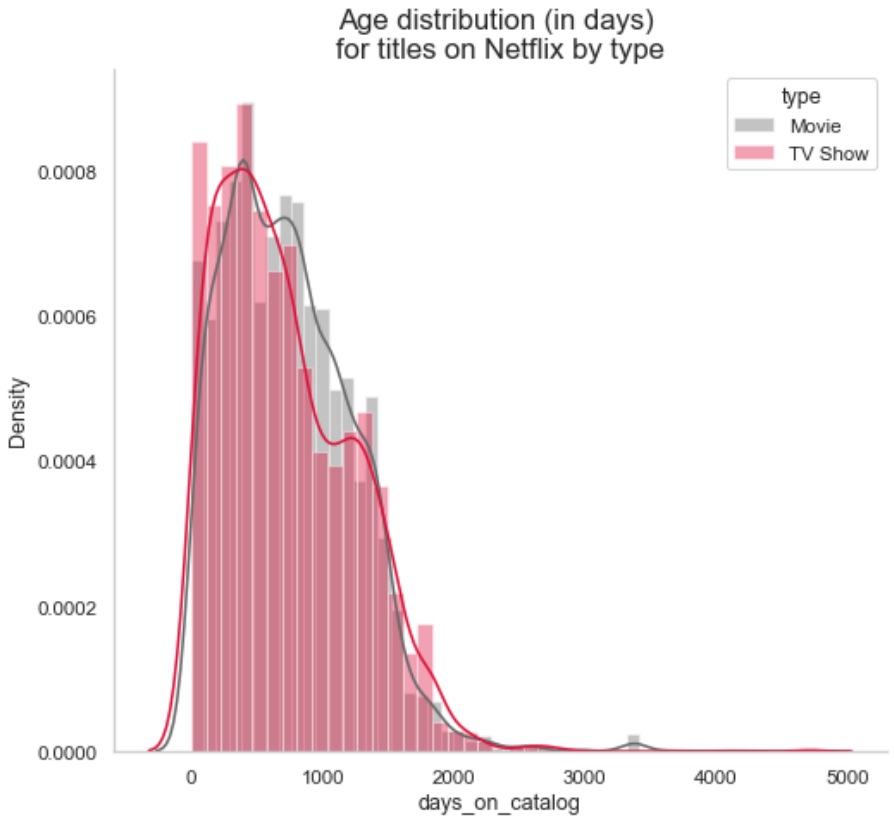

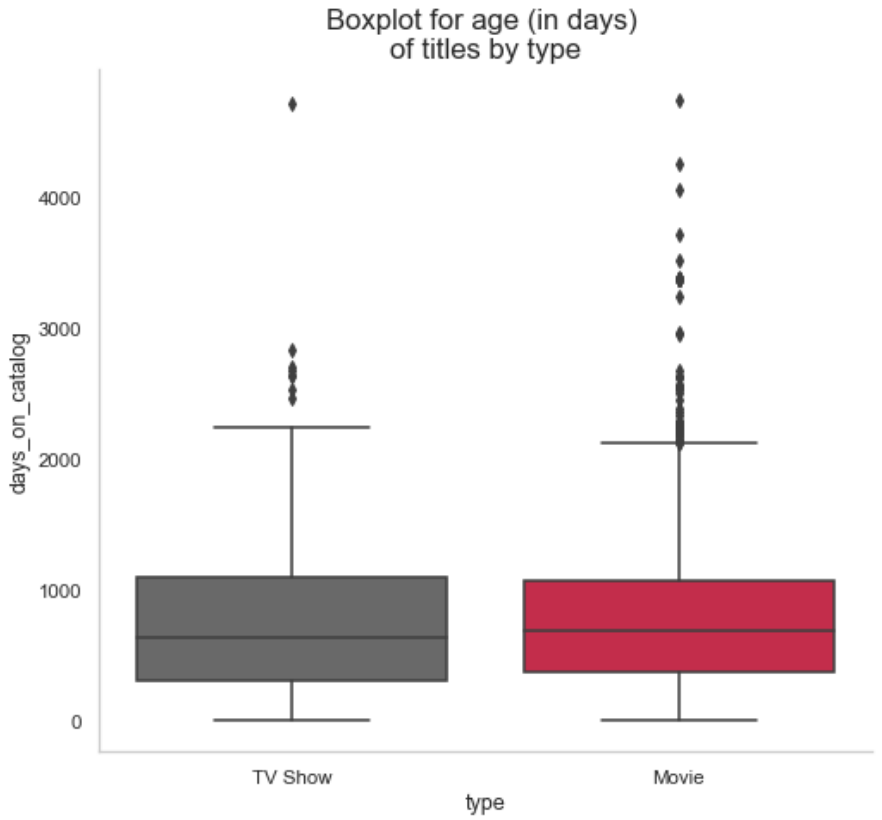

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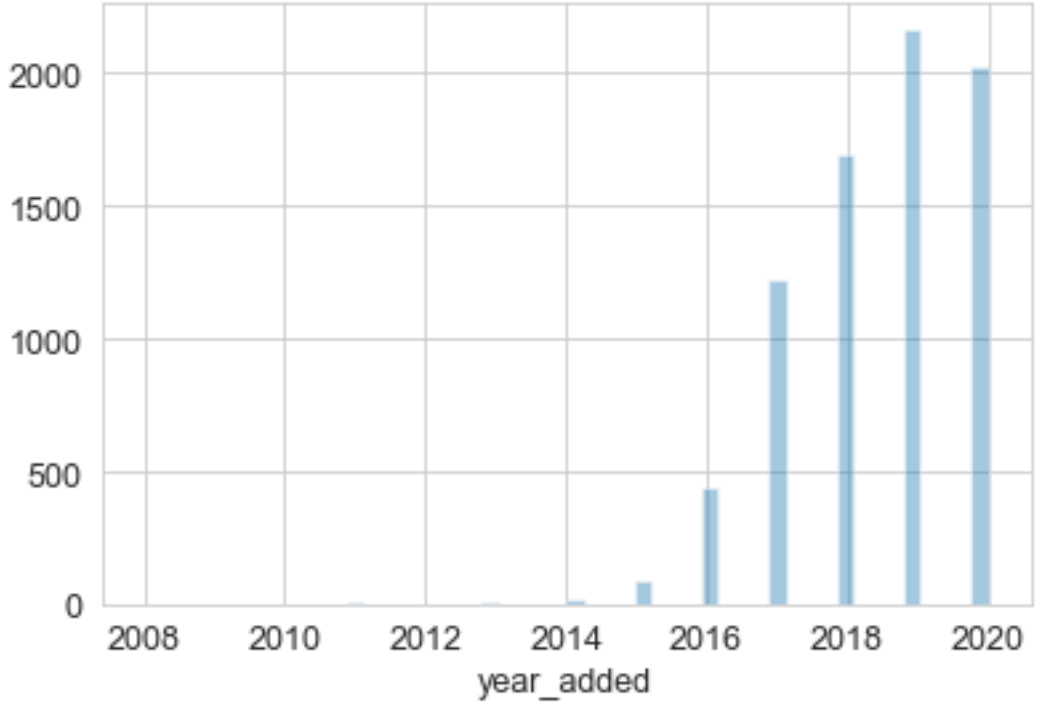
Year Wise Data Distribution



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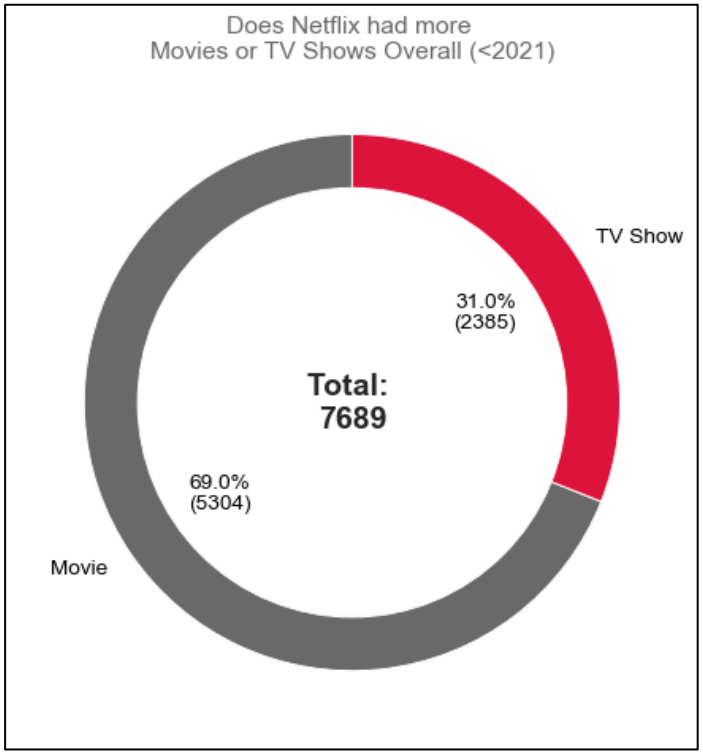
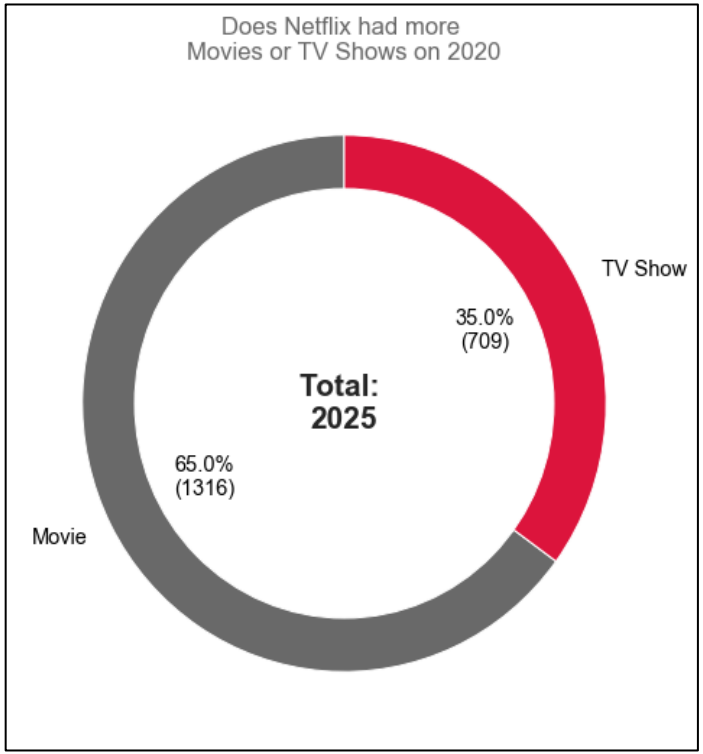
Movies vs TV Show / Overall vs 2020





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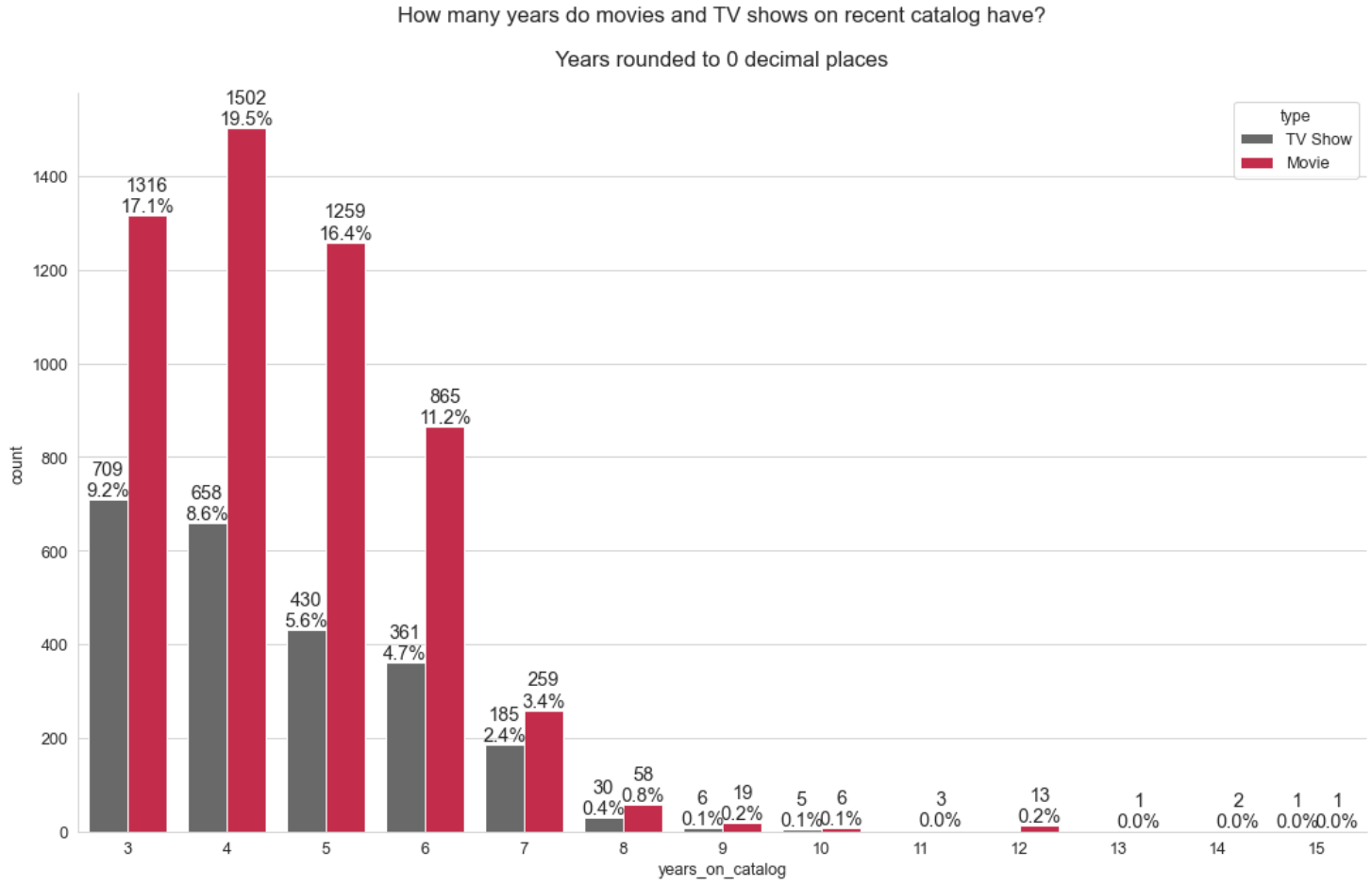

Note: Data set as of 2021Jan. Years calculated as of 2023

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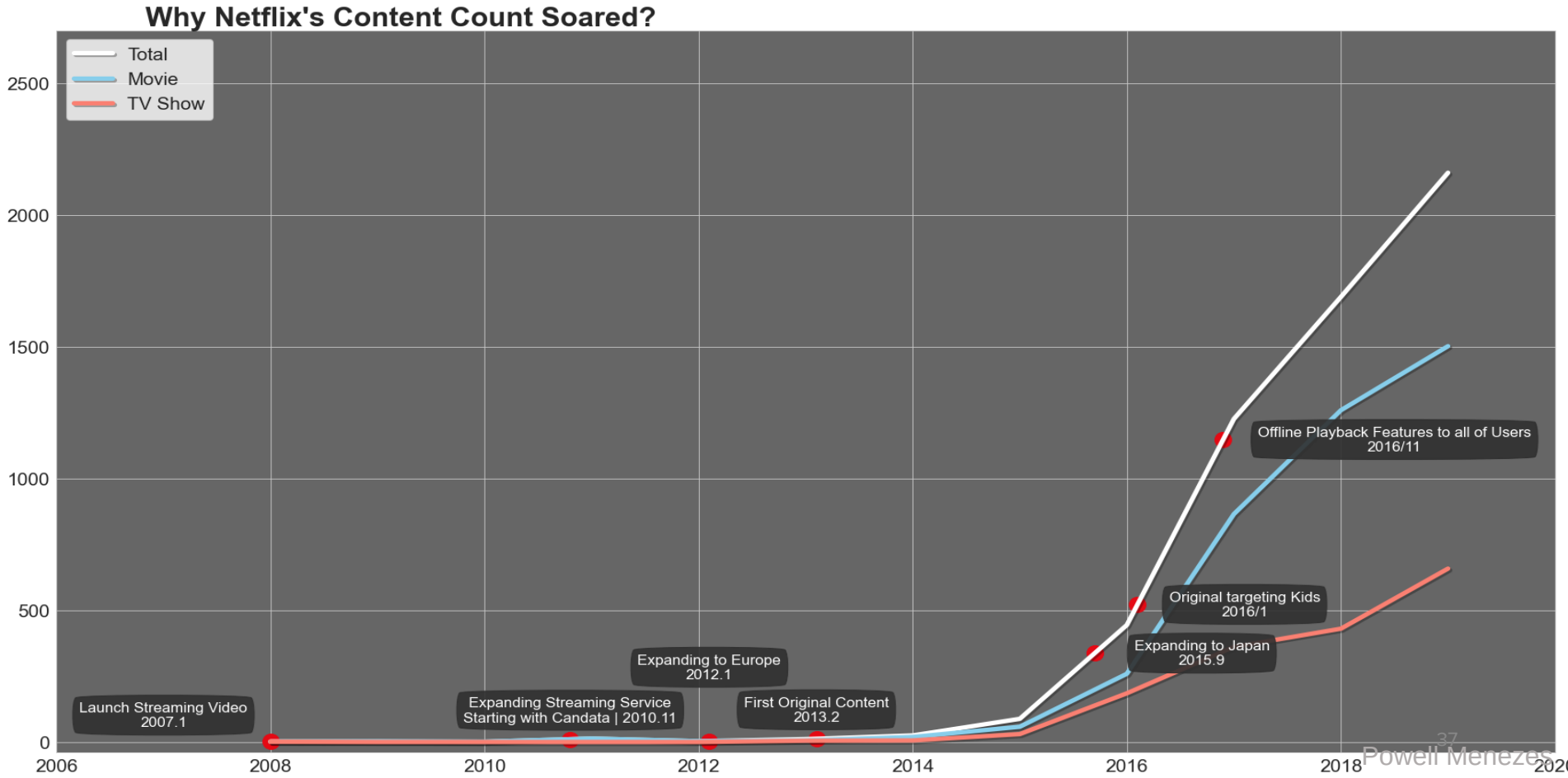

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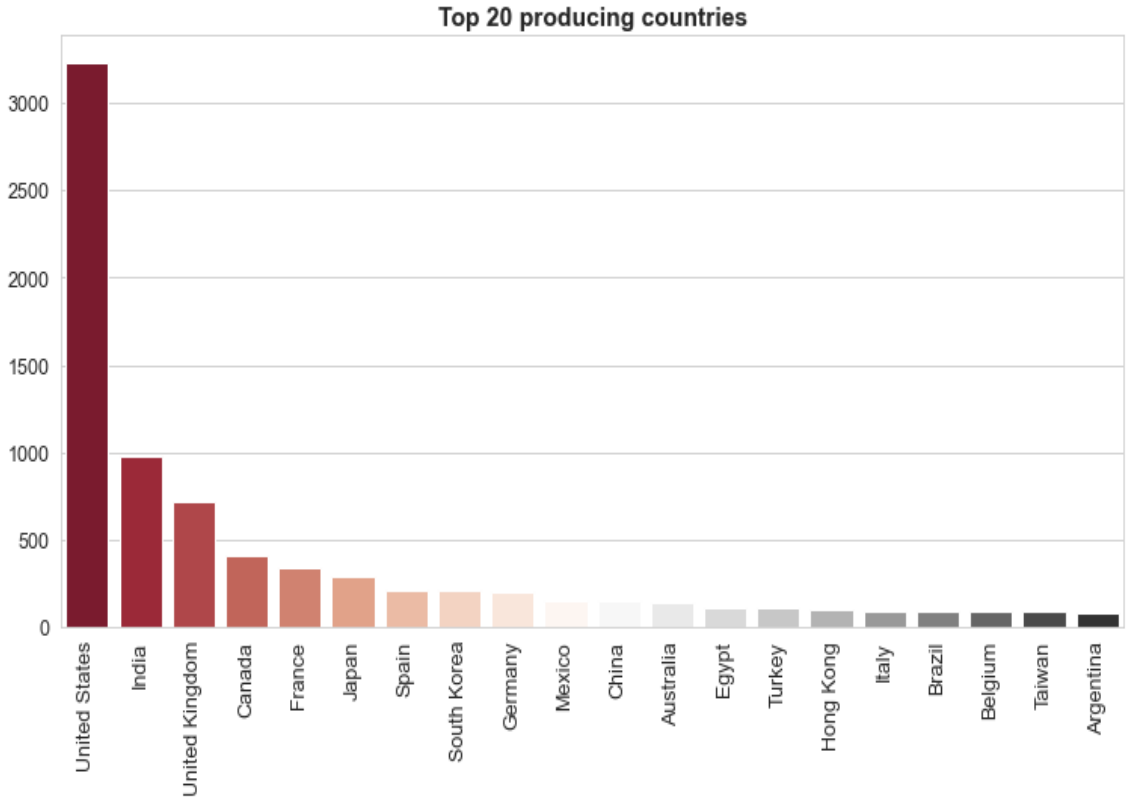
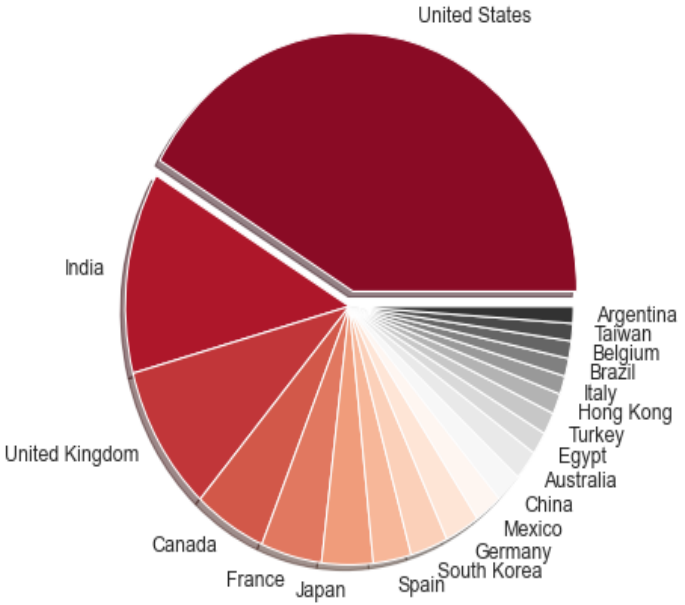

Top 20 producing countries
3000
2500
2000
1500
1000
500
0
United States
India
United Kingdom
Canada
France
Japan
Spain
South Korea
Germany
Mexico
China
Australia
Egypt
Turkey
Hong Kong
Italy
Brazil
Belgium
Taiwan
Argentina


United States
India
United Kingdom
Canada
France
Japan
Spain
South Korea
Germany
Mexico
China
Australia
Egypt
Turkey
Hong Kong
Italy
Brazil
Belgium
Taiwan
Argentina

Demo

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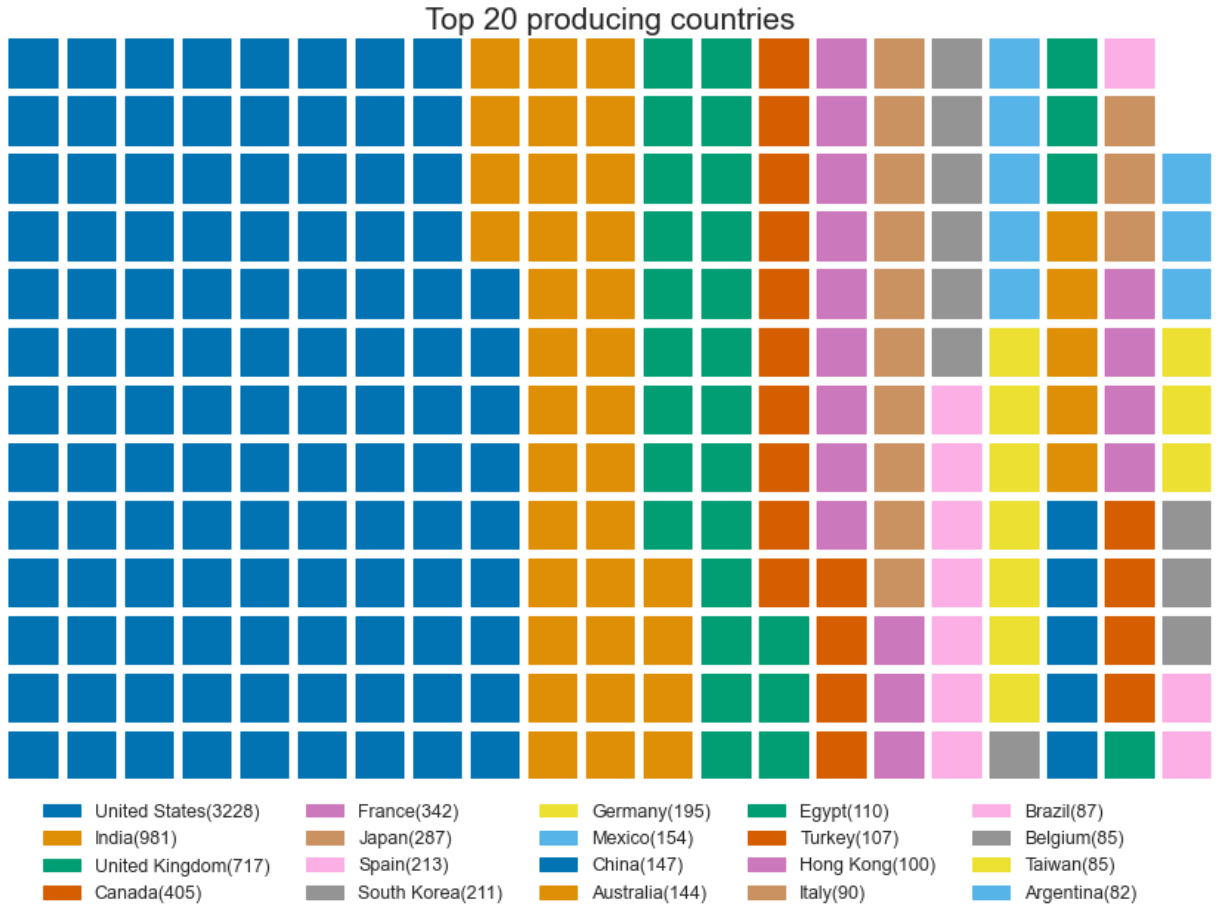
Top 20 producing countries
United States(3228)
India(981)
United Kingdom(717)
Canada(405)
France(342)
Japan(287)
Spain(213)
South Korea(211)
Germany(195)
Mexico(154)
China(147)
Australia(144)
Egypt(110)
Turkey(107)
Hong Kong(100)
Italy(90)
Brazil(87)
Belgium(85)
Taiwan(85)
Argentina(82)

Demo

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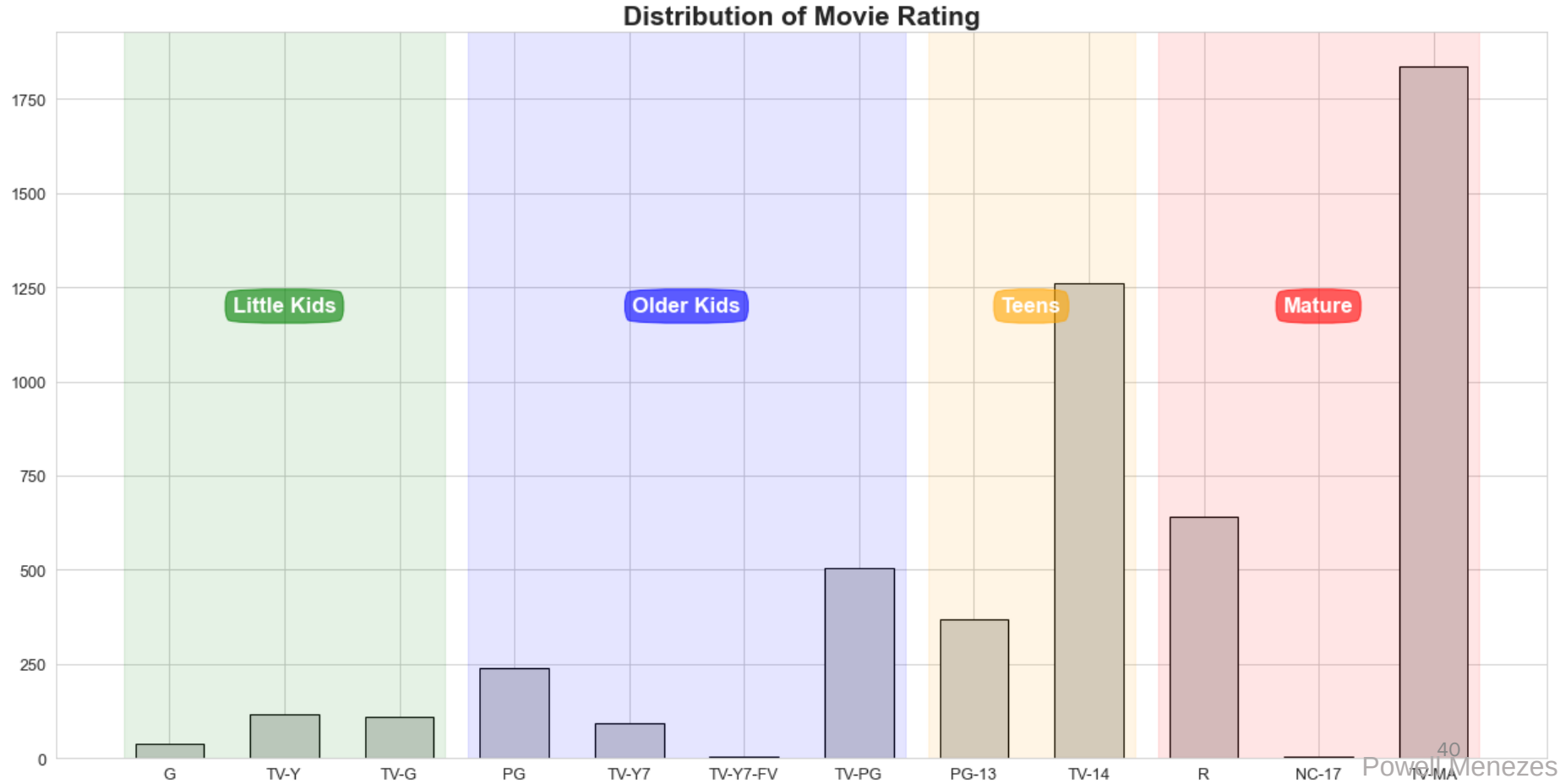

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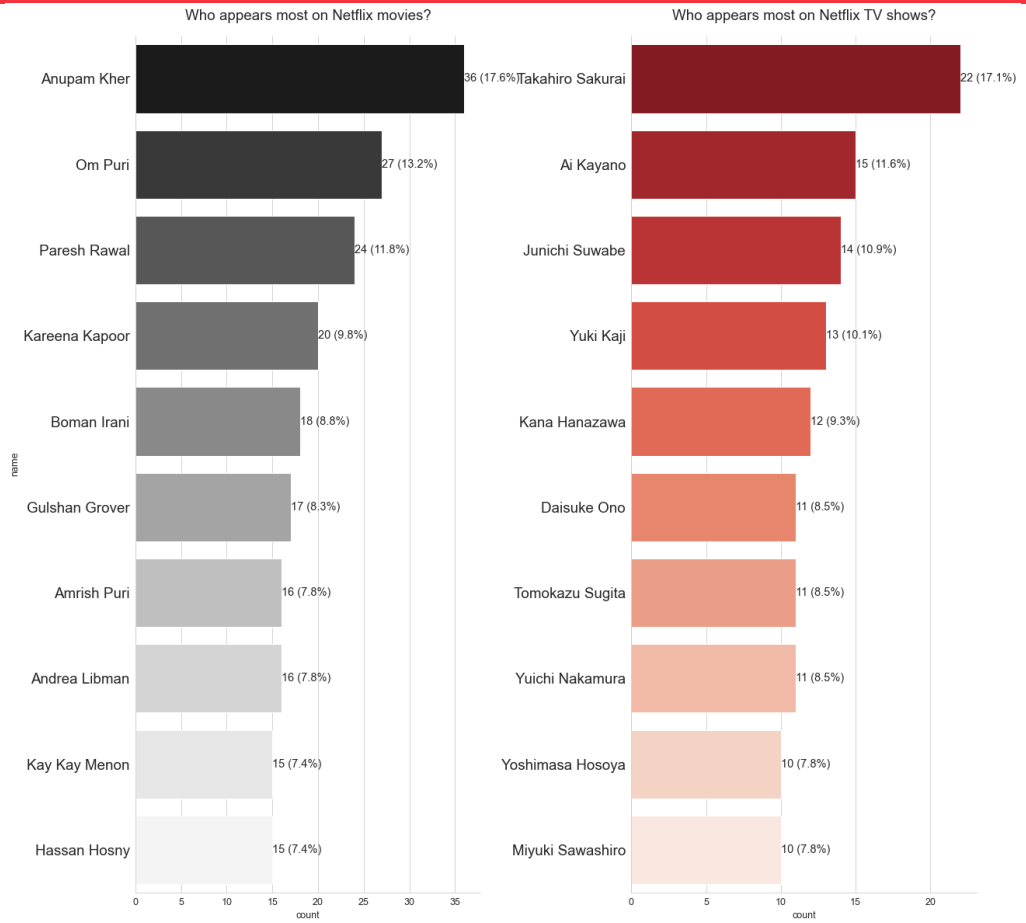
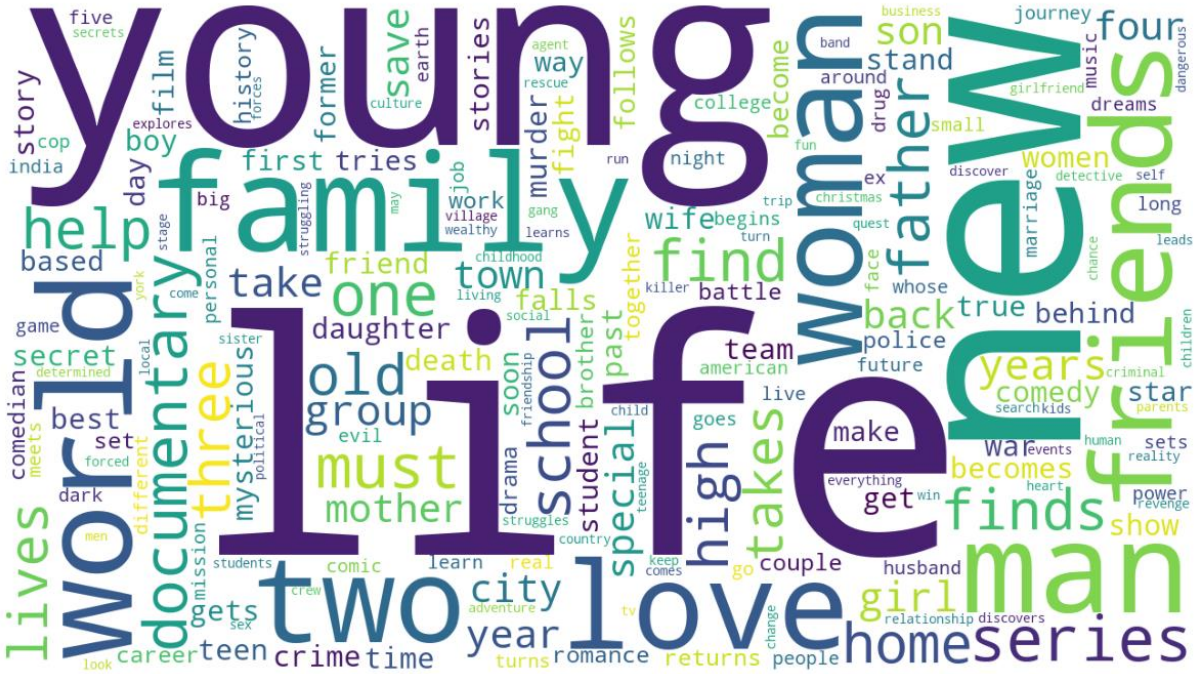

Who appears most on Netflix movies?
Anupam Kher
Om Puri
Paresh Rawal
Kareena Kapoor
Boman Irani
Gulshan Grover
Amrish Puri
Andrea Libman
Kay Kay Menon
Hassan Hosny
36 (17.6%)
27 (13.2%)
24 (11.8%)
20 (9.8%)
18 (8.8%)
17 (8.3%)
16 (7.8%)
16 (7.8%)
15 (7.4%)
15 (7.4%)
name
0
5
10
15
20
25
30
35
count
Who appears most on Netflix TV shows?
Takahiro Sakurai
Ai Kayano
Junichi Suwabe
Yuki Kaji
Kana Hanazawa
Daisuke Ono
Tomokazu Sugita
Yuichi Nakamura
Yoshimasa Hosoya
Miyuki Sawashiro
22 (17.1%)
15 (11.6%)
14 (10.9%)
13 (10.1%)
12 (9.3%)
11 (8.5%)
11 (8.5%)
11 (8.5%)
10 (7.8%)
10 (7.8%)
0
5
10
15
20
count

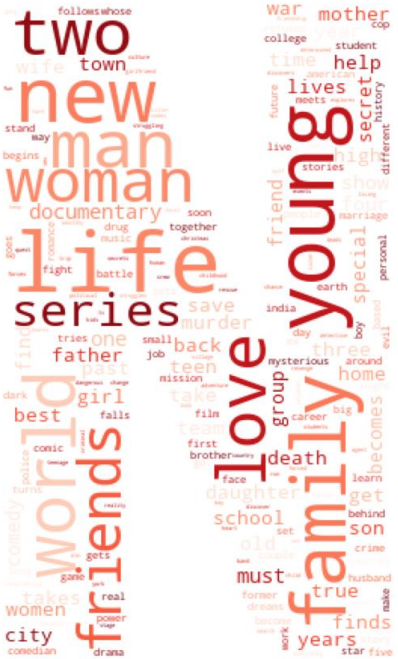
Demo

upGrad

WordCloud Plot



Custom WordCloud Plot



upGrad

#LifeKoKaroLift

Thank You!