

Analysis of Google Play Store Applications



SUBMITTED BY Group - 4

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SCOPE

The outcome of our project is to demonstrates the relevance of app reviews in the market, as they may be one of the determining factors for the number of installs.

PROBLEM DESCRIPTION

- As of the first quarter of 2021, the number of apps on Google Play Store were 3.48 million.
- To stand out in this oversaturated market, App Developers need to figure out what factors have an impact on the consumer's preferences.
- It really takes a lot of time and team work to make a good app, so if a developer is making an application, then his work should be paid off.
- But what kind of applications should be made?

PROPOSED SOLUTION

• EXPLORE

Inquire factors that can influence application installation.

• FOCUS

Focus on app categories with maximum downloads to emphasize for development.

• ANALAYZE

Reflect upon the feedback by improving our applications

DATASETS

Kaggle link -

https://www.kaggle.com/datasets/lava18/goog le-play-storeapps?resource=download&select=googleplays tore.csv

4	А	В	С	D	E	F	G	Н		J	K	L	М
ı	Rating	Арр	Category	Reviews	Size	Installs	Туре	Price	Content Rating	Genres	Last Updated	Current Ver	Android Ver
	4.1	Photo Editor & Candy Camera & Grid & So	ART_AND_DESIGN	159	19M	10,000+	Free		0 Everyone	Art & Design	07-Jan-18	1.0.0	4.0.3 and up
	3.9	Coloring book moana	ART_AND_DESIGN	967	14M	500,000+	Free		0 Everyone	Art & Design;Pre	15-Jan-18	2.0.0	4.0.3 and up
	4.7	7 U Launcher Lite – FREE Live Cool Them	ART_AND_DESIGN	87510	8.7M	5,000,000+	Free		0 Everyone	Art & Design	01-Aug-18	1.2.4	4.0.3 and up
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	3.8	3 Smoke Effect Photo Maker - Smoke Edito	ART_AND_DESIGN	178	19M	50,000+	Free		0 Everyone	Art & Design	26-Apr-18	1.	1 4.0.3 and up
	4.1	I Infinite Painter	ART_AND_DESIGN	36815	29M	1,000,000+	Free		0 Everyone	Art & Design	14-Jun-18	6.1.61.1	4.2 and up
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	4.7	7 Superheroes Wallpapers 4K Background	ART AND DESIGN	7699	4.2M	500,000+	Free		0 Everyone 10+	Art & Design	12-Jul-18	2.2.6.2	4.0.3 and up

SAMPLE DATASETS

1	App Name	Rating	Category	Country	Paid/Free	Downloads in Millions	Size	Revenue (2021)	Age Group	Review
2	Facebook	4.1	Social	United States	Free	1,100	64MB	\$117 billion	25-34 years	Good
3	Flipkart	4.3	Shopping	India	Free	3,521	18MB	\$6 billion	25-34 years	Good
4	Hotstar	4.1	Entertainment	India	Free	2,129	80MB	\$16 billion	15-24 years	Bad
5	Instagram	4.3	Social	United States	Free	4,200	106MB	\$26 billion	25-34 years	Good
6	MX Player Pro	4	Video Players & Editors	South Korea	Paid	120	20MB	\$6 billion	18-34 years	Bad
7	Netflix	4.2	Entertainment	United States	Paid	5,000	17MB	\$120 billion	18-34 years	Good
8	Paytm	4.6	Finance	India	Free	1,500	94MB	\$6 billion	15-24 years	Bad
9	Spotify	4.3	Music & Audio	Sweden	Free	1,212	27MB	\$10 billion	18-34 years	Bad
10	Subway Surfers	4.3	Arcade Game	Denmark	Free	1,233	123MB	\$32 billion	9-18 years	Bad
11	Telegram	4.3	Communication	Germany	Free	499	72MB	Nil	18-34 years	Nil
12	WhatsApp	4.1	Communication	United States	Free	3,965	78MB	\$122 billion	25-34 years	Good
13	Amazon	4.6	Shopping	India	Free	4,000	32MB	\$35 billion	18-34 years	Good
14	Gpay	4.2	Finance	India	Free	2,222	12MB	\$21 billion	25-34 years	Good
15	PUBG	4.3	Arcade Game	India	Free	5,412	220MB	\$232 billion	15-24 years	Good
16	Myntra	3.9	Shopping	United States	Free	1,236	32MB	\$21 billion	15-24 years	Bad
17	Book My Show	4.1	Entertainment	India	Paid	759	29MB	\$26 billion	18-34 years	Good
18	Snapchat	4.3	Social	Australia	Free	2,560	32MB	\$35 billion	15-24 years	Good
19	MS Teams	3.8	Communication	India	Free	1,280	54MB	\$37 billion	9-18 years	Bad

- Our Dataset has 13 Attributes, and consist of both qualitative and quantitative data and there are about 10840 rows
- App name, Category and Genre are **Nominal**, whereas Type and Content Rating are **Ordinal data**.
- Rating, Size, Installs, Price, Reviews are Quantitative data.
- In sample dataset, Reviews are **Ordinal data** and Country is **Nominal data**.

DESIGN & METHODOLOGY



JUSTIFICATION

Stacked Column Chart - Shows number of installs per months with Category Helps in planning

- Launch of applications
- Category to be focused

Line Chart - Shows number of installs per dayHelp in planning launch of Application

Area Chart - Number of installs with category and content rating. Helps to analyse which category is in more demand, by which age group

Word Cloud - Based on Category and reviews

TOOLS USED

POWER BI

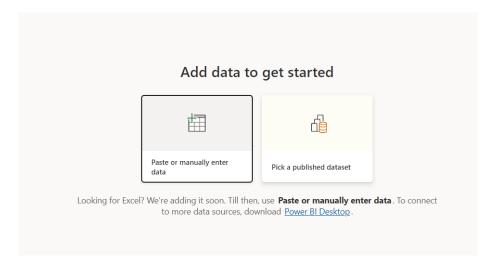
Interactive data visualization software

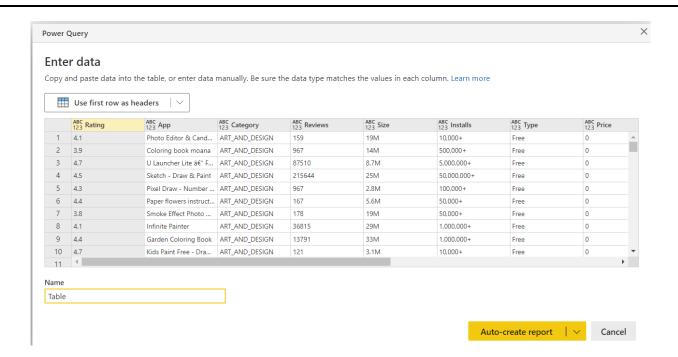
REASON

- Easy implementation
- Variety of visualisations available
- Direct connectivity of database to the software
- Interesting showcase of data analysis

Data Connectivity

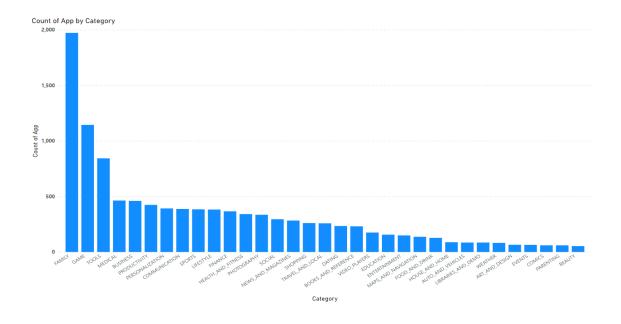
The dataset downloaded from Kaggle is imported to Power Bi software.





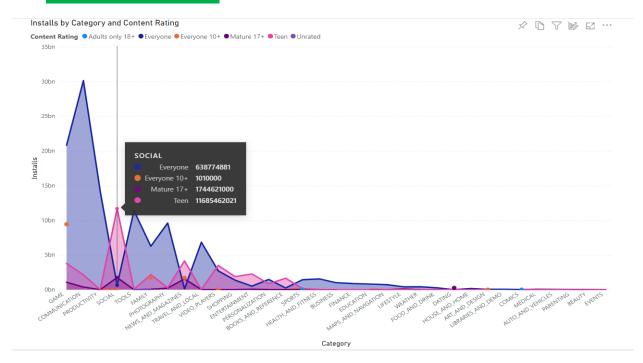
Visual Encoding

1. Bar Chart

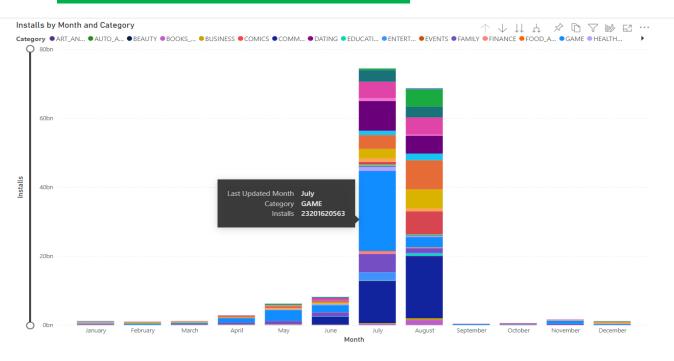


- "This bar chart demonstrates number of applications per Category"
- We can see that Family has highest number of apps, followed by Games, Tools and so on.

2. Area Chart

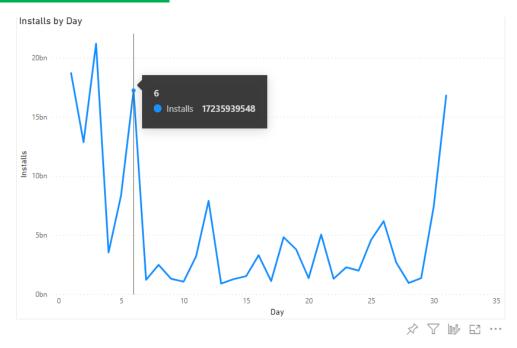


3. Stacked Column Chart



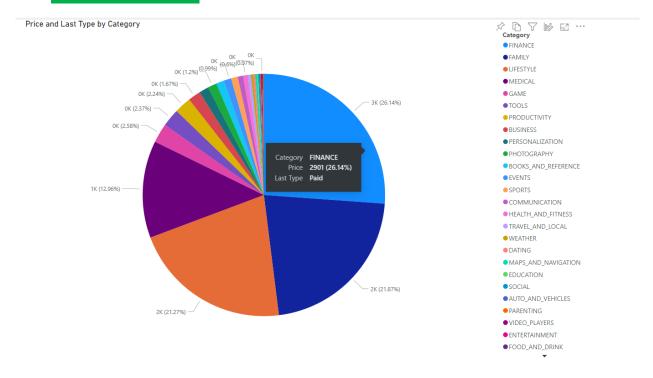
- This Stacked column chart demonstrates total number of installs per months with respect to Category of apps.
- From the above chart we can conclude that July has the highest number of installs around 80 billion, in which Games Category is leading followed by communication.

4. Line Chart



- This Chart shows the variation of installs per day.
- From the above graph we can see that on day 6th there were about 17 billion installs.

5. Pie Chart

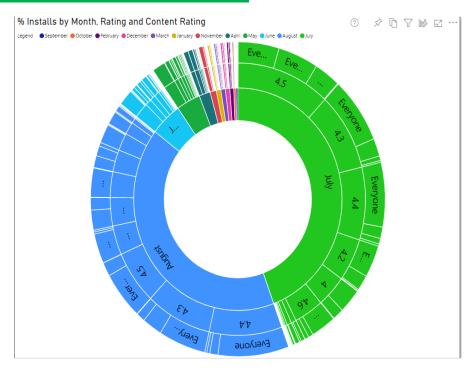


6. Tree Map



This tree map shows us the hierarchy of total number of installs by category and months.

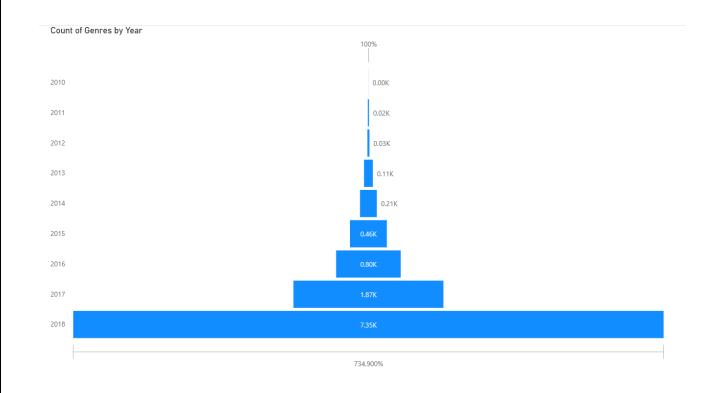
7. Sunburst Diagram



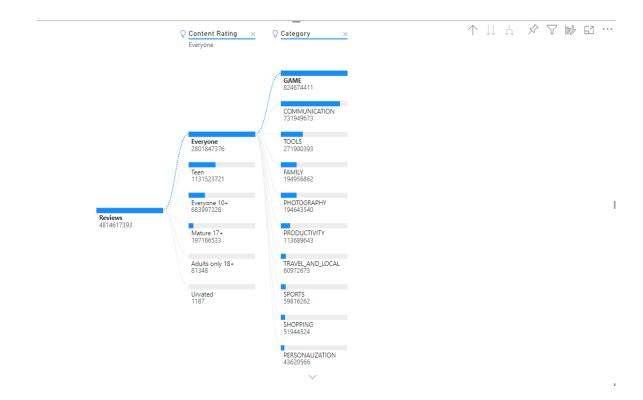
8. Word Cloud



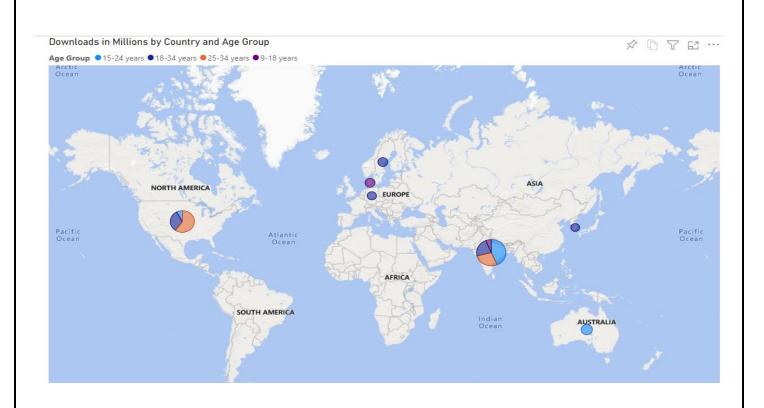
9. Funnel Chart

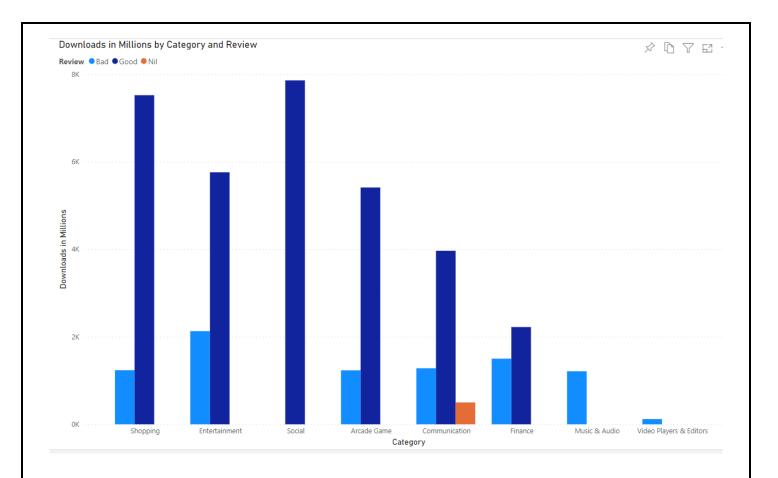


10. Decomposition Tree

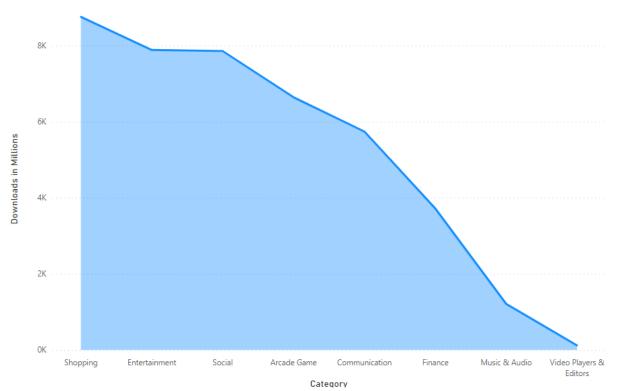


Sample Visualization

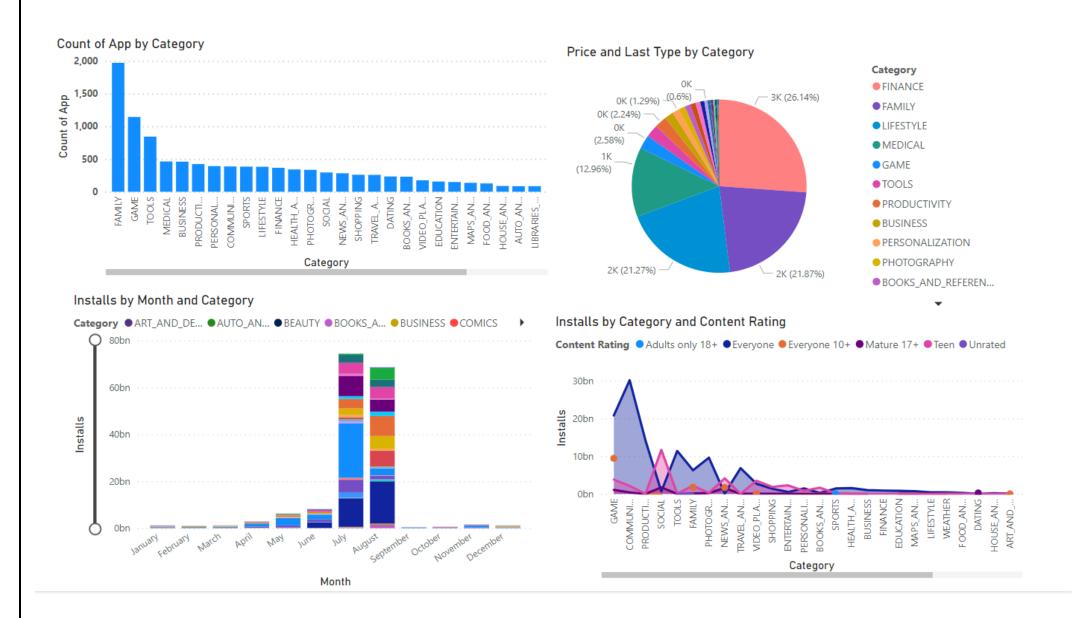


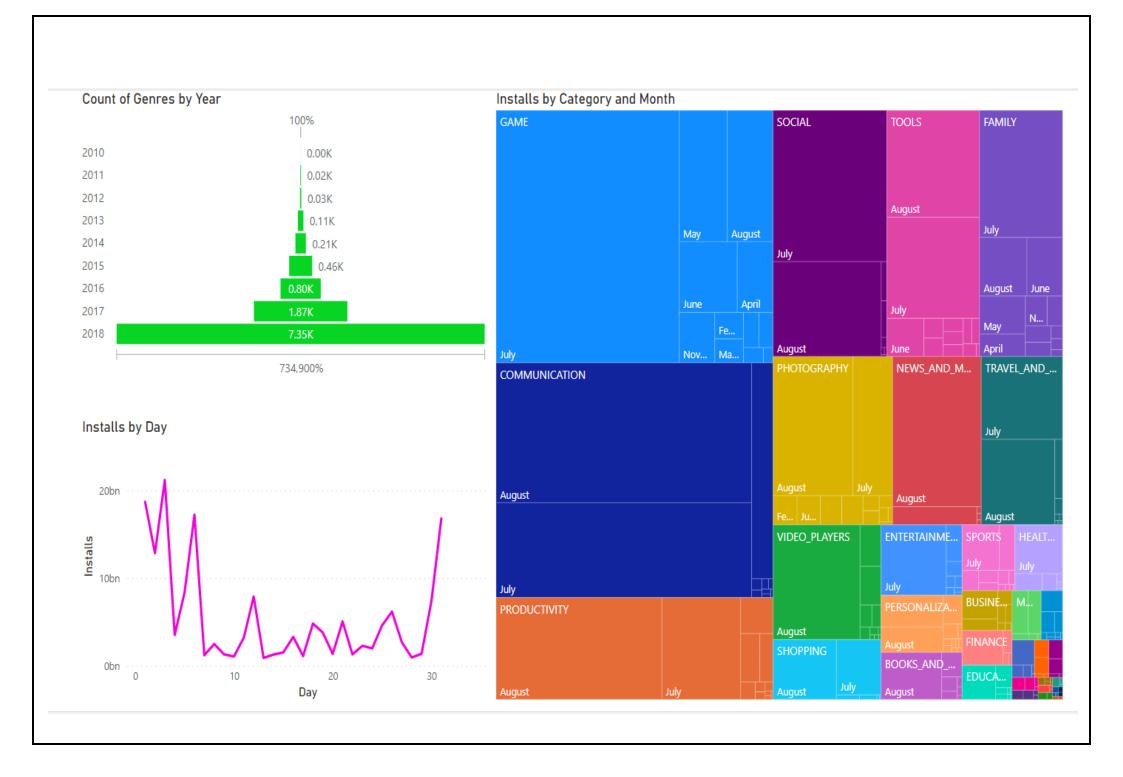


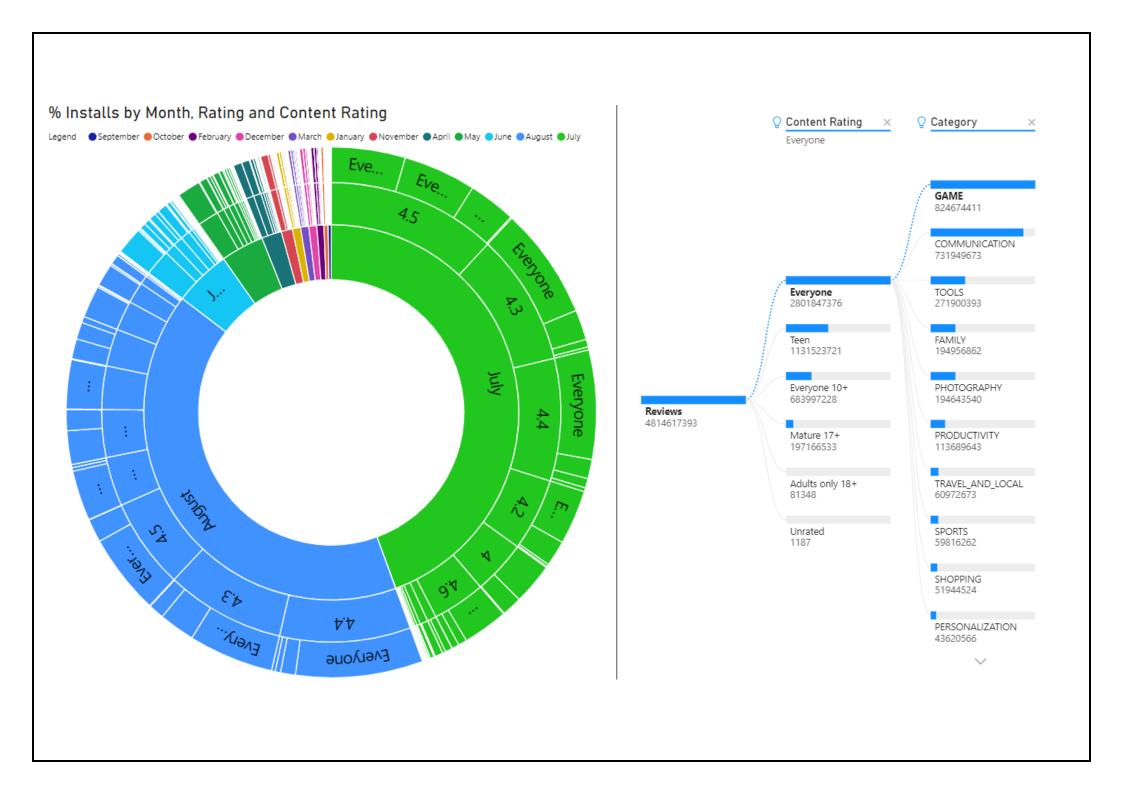
Downloads in Millions by Category

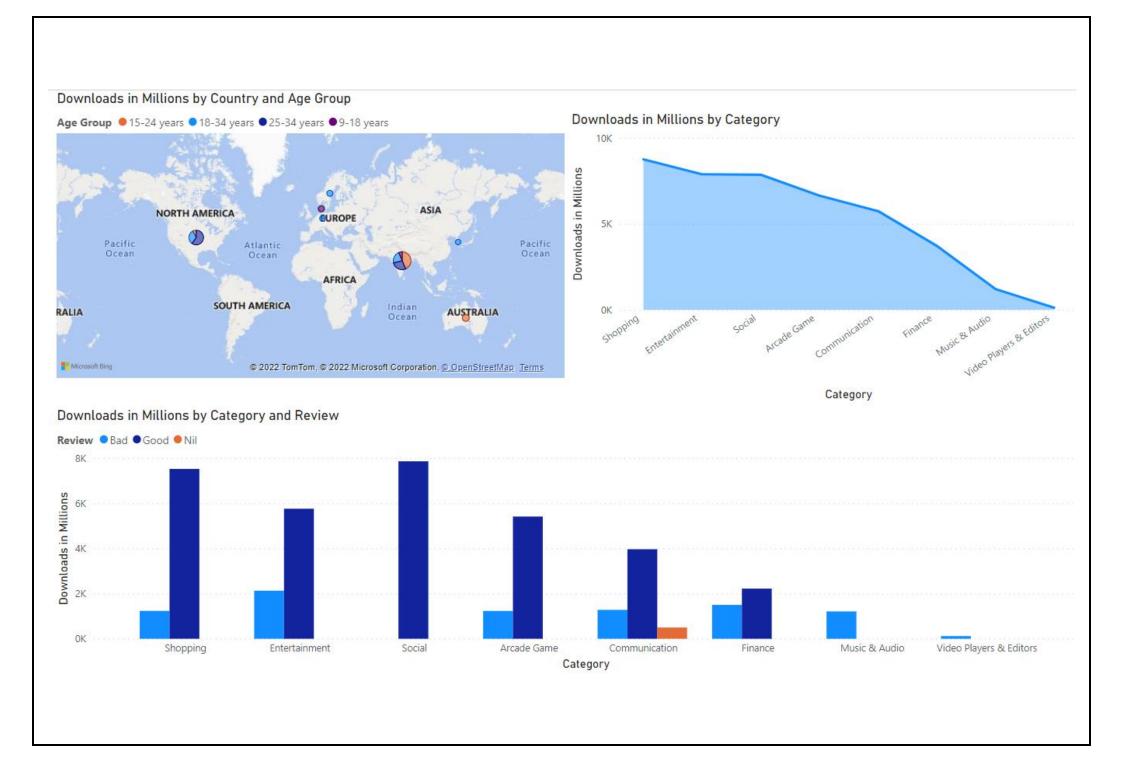


DASHBOARD









REFERENCES

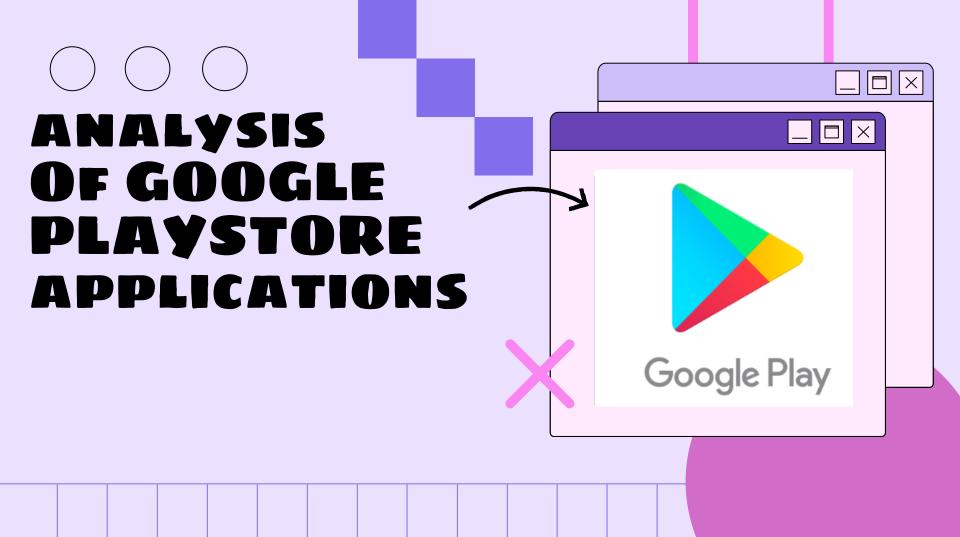
LINKS:

- <u>Dataset taken from https://www.kaggle.com/datasets/lava18/google-play-store-apps?resource=download&select=googleplaystore.csv</u>
- Visualisations done on https://powerbi.microsoft.com
- <u>https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-types-for-reports-and-q-and-a</u>

BOOK:

Interactive Data Visualization Foundations, Techniques, and Applications
By Matthew Ward, Georges Grinstein & Daniel Keim.





GROUP 4



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> YASH AJAY SARAF 20BCE0680

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O PROBLEM DESCRIPTION



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But what kind of applications should be made?





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PROPOSED SOLUTION





EXPLORE

Inquire factors that can influence application installation.



FOCUS

Focus on app categories with maximum downloads to emphasize for development.





ANALAYZE

Reflect upon the feedback by improving our applications

DATASETS









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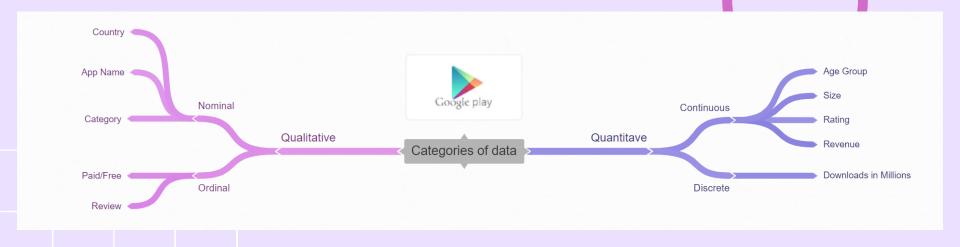
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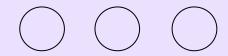
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DESIGN & METHODOLOGY





JUSTIFICATION

STACKED COLUMN CHART

Is used to show number of installs per months with Category - Help in planning launch of Application, and which category should be focused

LINE CHART

For Number of installs per day – Help in planning launch of Application

WORD CLOUD

Based on Category and reviews

AREA CHART

Number of installs with category and content rating, Helps to analyse which category is in more demand by which age group

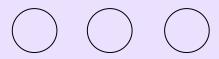
TOOLS USED

POWER BI

Interactive data visualization software

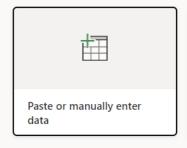
REASON

- Easy implementation
- Variety of visualisations available
- Direct connectivity of database to the software
- Interesting showcase of data analysis



DATA CONNECTIVITY

Add data to get started





Looking for Excel? We're adding it soon. Till then, use **Paste or manually enter data**. To connect to more data sources, download <u>Power BI Desktop</u>.

MISSION

The dataset downloaded from Kaggle is imported to Power Bi software.

DATA CONNECTIVITY

Power Query

×

Enter data

Copy and paste data into the table, or enter data manually. Be sure the data type matches the values in each column. Learn more

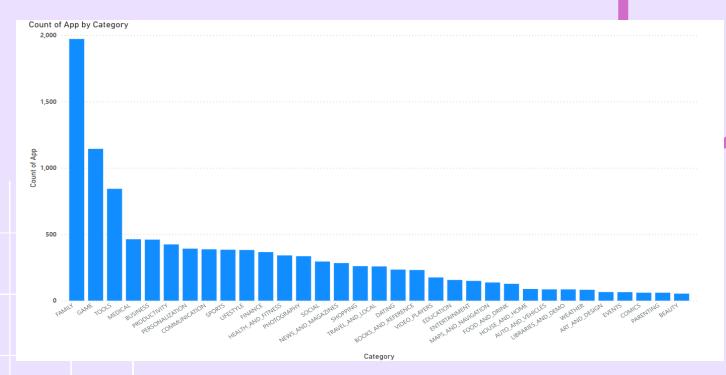
■ Use first row as headers ✓

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8	4.1	Infinite Painter	ART_AND_DESIGN	36815	29M	1,000,000+	Free	0
9	4.4	Garden Coloring Book	ART_AND_DESIGN	13791	33M	1,000,000+	Free	0
10	4.7	Kids Paint Free - Dra	ART_AND_DESIGN	121	3.1M	10,000+	Free	0
11	4							•

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1.4	а		C

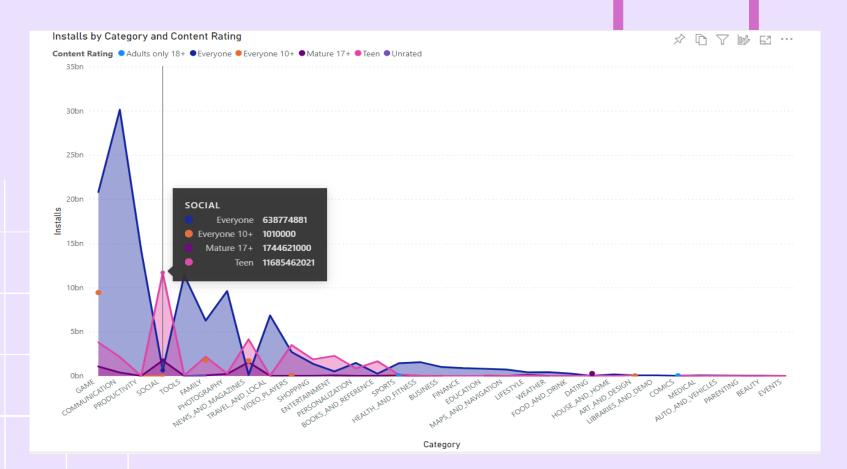
Table

VISUAL ENCODING - BAR CHART

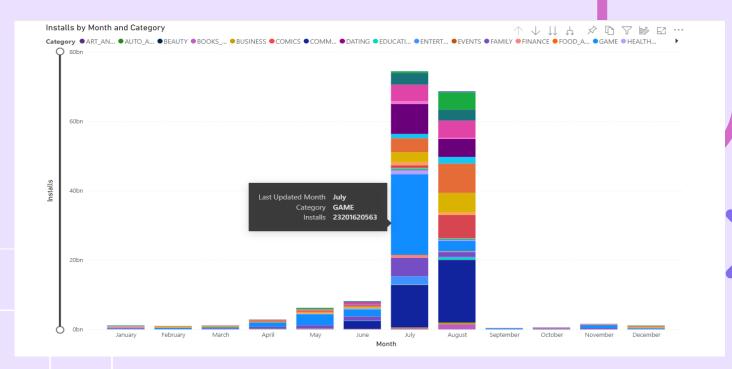


- "This bar chart demonstrates number of applications per Category"
- We can see that Family has highest number of apps, followed by Games, Tools and so on.

AREA CHART



STACKED COLUMN CHART

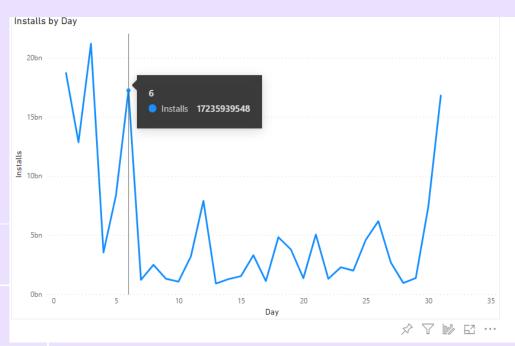


- This Stacked column chart demonstrates total number of installs per months with respect to Category of apps.
- From the above chart we can conclude that July has the highest number of installs around 80 Billion, in which Games Category is leading followed by communication.





LINE CHART



- This Chart shows the variation of installs per day.
- From the above graph we can see that on day 6th there were about 17 billion installs.

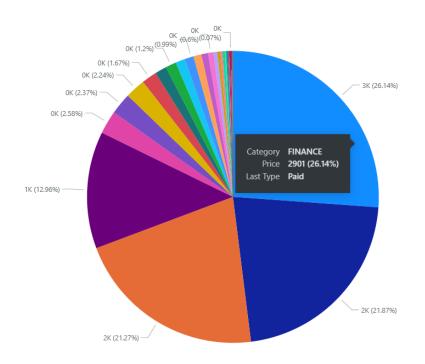






PIE CHART

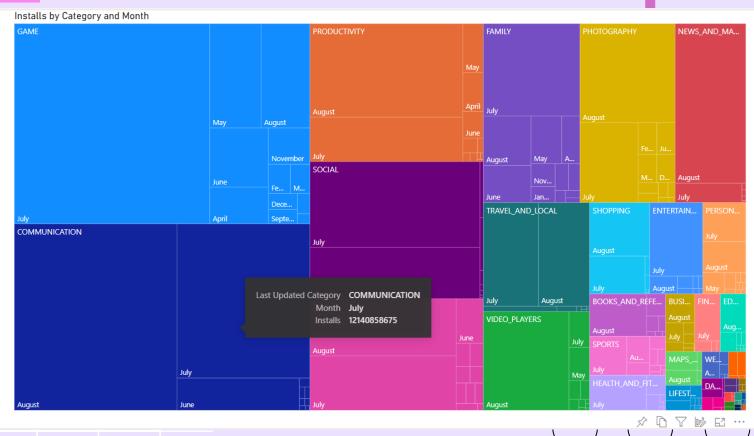
Price and Last Type by Category





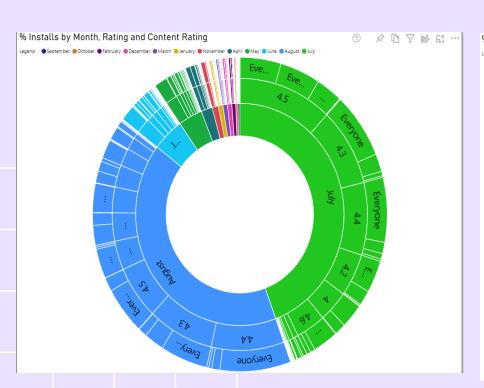
VIDEO_PLAYERSENTERTAINMENTFOOD AND DRINK

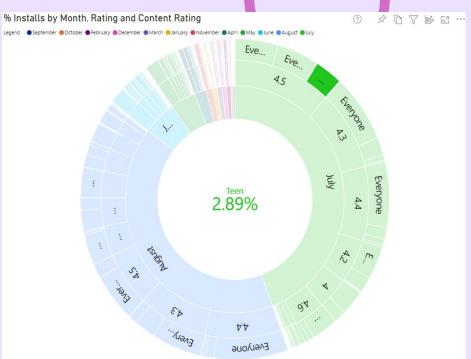
TREE MAP



This tree map shows us the hierarchy of total number of installs by category and months.

SUNBURST DIAGRAM

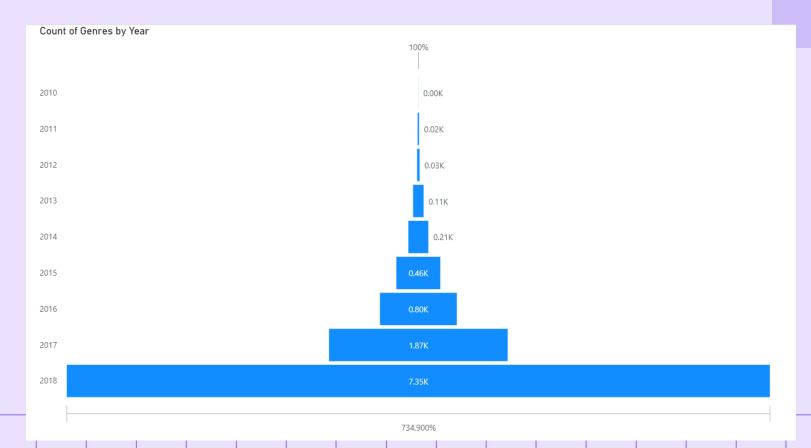




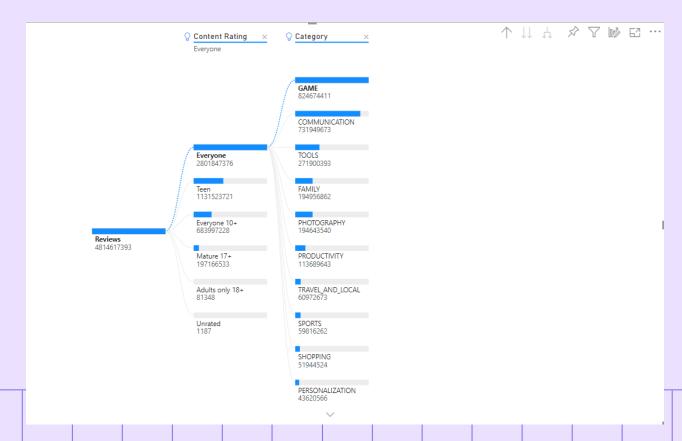
WORD CLOUD



FUNNEL CHART



DECOMPOSITION TREE

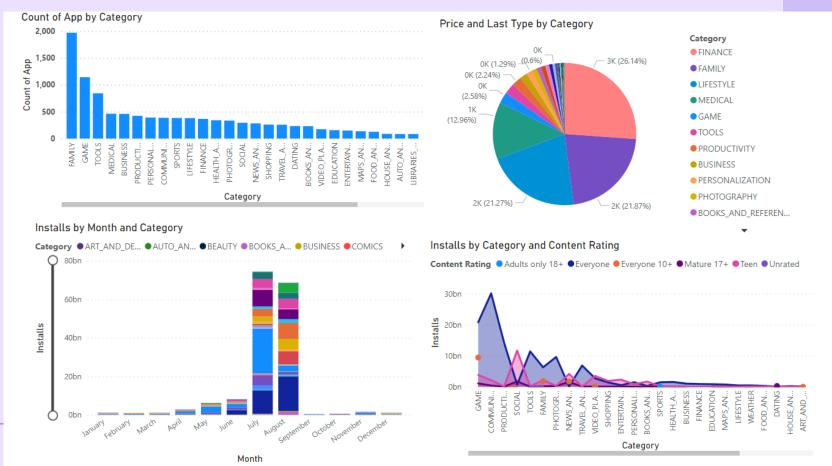








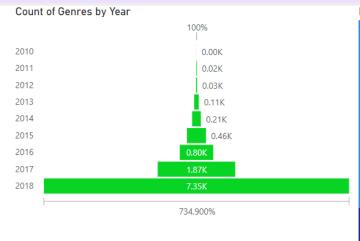
DASHBOARD - U I



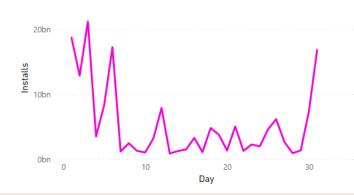


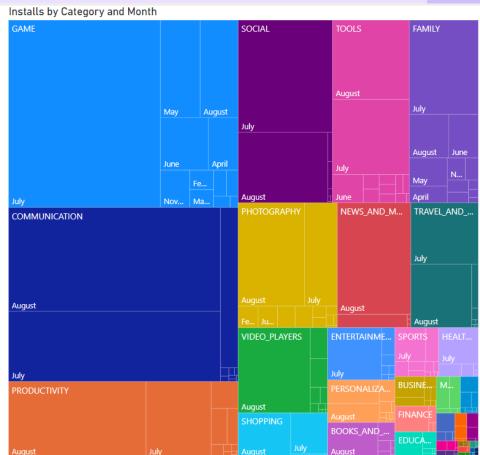


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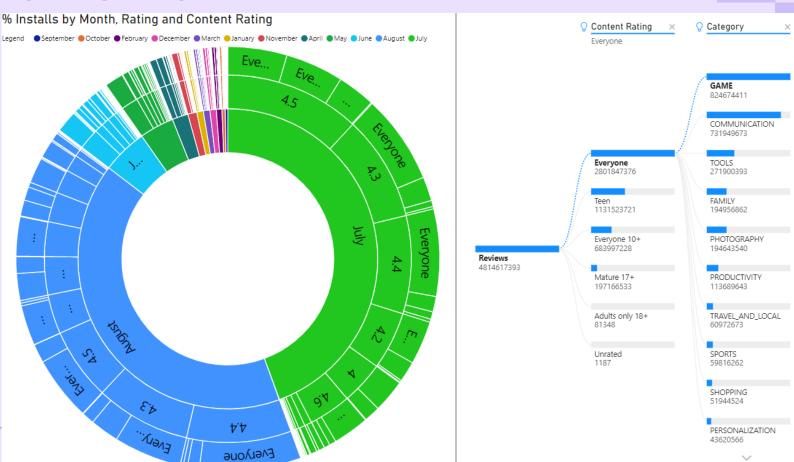






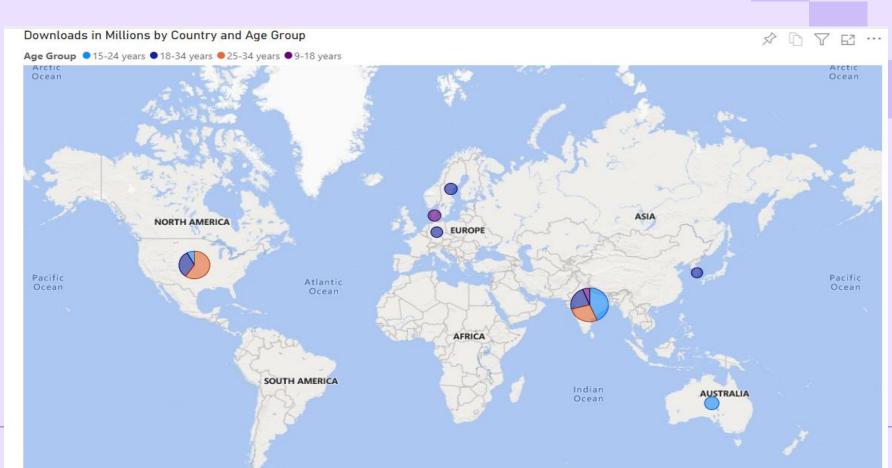


O O DASHBOARD - U I

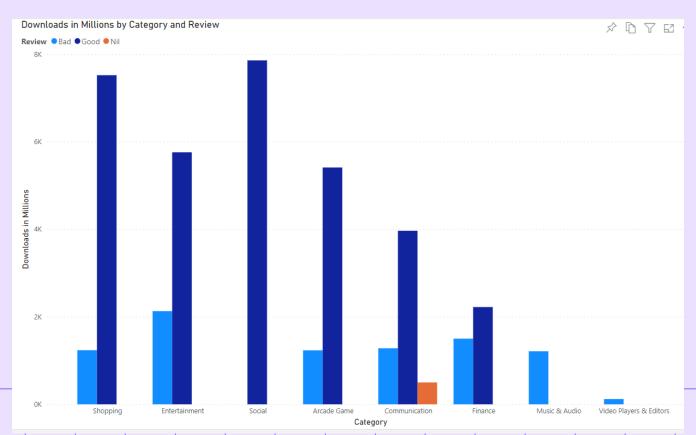




SAMPLE VISUALIZATION



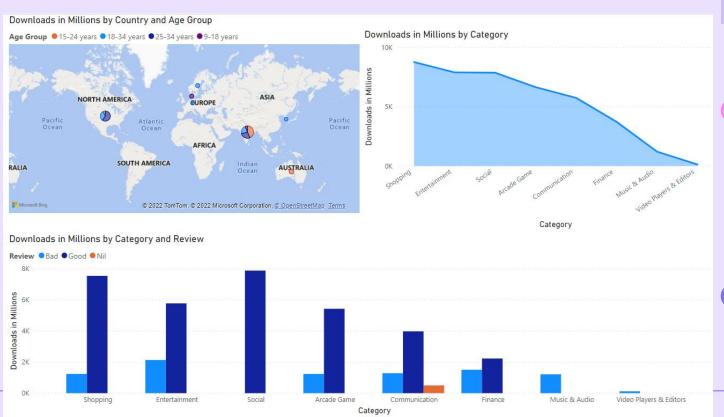
SAMPLE VISUALIZATION



SAMPLE VISUALIZATION



SAMPLE DASHBOARD



REFERENCES

X

LINKS:

- Dataset taken from <u>https://www.kaggle.com/datasets/lava</u> <u>18/google-play-store-</u> <u>apps?resource=download&select=googleplaystore.csv</u>
- Visualisations done on https://powerbi.microsoft.com
- https://docs.microsoft.com/enus/power-bi/visuals/power-bivisualization-types-for-reports-and-qand-a

BOOK:

 Interactive Data Visualization Foundations, Techniques, and Applications

By Matthew Ward, Georges Grinstein & Daniel Keim.

