

INTRODUCTION TO DATA MANAGEMENT PROJECT REPORT

(Project Semester: August-December 2019)



LOVELY
PROFESSIONAL
UNIVERSITY

On

GOOGLE PLAY STORE APPS



Submitted by

Name: **S Sandeep Sagar**

Registration No: **11713044**

Section: KM-065

Course Code: INT-217

Under the Guidance of

Ms. Maneet Kaur

Assistant Professor, U.Id: 15709

Discipline of CSE/IT

Lovely School of Computer Science and Engineering

Lovely Professional University, Phagwara.

CERTIFICATE

This is to certify that **S Sandeep Sagar** bearing Registration no. **11713044** has completed **Data Management (INT-217)** project titled, “**GOOGLE PLAY STORE APPS**” under my guidance and supervision. To the best of my knowledge, the present work is the result of his original development, effort and study.

Signature and Name of the Supervisor

Designation of the Supervisor

School of Computer Science and Engineering

Lovely Professional University

Phagwara, Punjab.

Date:

DECLARATION

I **S Sandeep Sagar** student of Computer Science Engineering under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date:

Signature:

Registration NO.

Name of the Student:

ACKNOWLEDGEMENT

I take this opportunity to present our votes of thanks to all those guideposts who really acted as lightening pillars to enlighten my way throughout this Project that has led to successful and satisfactory completion of this Project. I am grateful to **Lovely Professional University** for providing us with an opportunity to undertake this Project and providing us with all the facilities. I am highly thankful to all for their active support, valuable time and advice, whole-hearted guidance, sincere cooperation and painstaking involvement during the project and in completing the assignment of preparing the said project within the time stipulated. Lastly, I am thankful to all those, particularly the various friends, who have been instrumental in creating proper, healthy and conductive environment and including new and fresh innovative ideas for me during the project, without their help, it would have been extremely difficult for me to complete the project in a time bound framework.

Table of Contents

1. Introduction:.....	1
2. Objectives/Scope of the Analysis:	2
3. Source of Dataset:	3
4. ETL process:	4
5. Analysis on Dataset:	10
5.1 Top Trending apps in Google play store Apps with people reviews.	10
5.2 Percentage of Apps by Age-Category wise.	11
5.3 Top app-categories with the count of total apps in it.	12
5.4 Paid apps vs. Free apps	13
5.5 Finding top apps in category wise in google play store	14
5.6 Most un-used apps-categories in the google play store	15
5.7 Up-to-date apps in the google play store	16
6. List of Analysis with results:	17
7. References:.....	18
8. Bibliography:	18

1. Introduction:

Data analysis is a process of inspecting, cleansing, transforming, and modelling data with the goal of discovering useful information, informing conclusions, and supporting decision-making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, while being used in different business, science, and social science domains.

This project is all about getting the google play store data and studying what type of data it is like: To seeing which category apps are installed more, which app is getting more reviews, how many apps are freely available in the play store, how many apps are there for kids and how many are there for adults and many more. Visualization of data set is done by creating the bar graphs, using slicers, using the pivot table to do some filtration on the dataset to get exact output that we needed.

Using Tableau Prep for splitting the merged columns in the data set and cleaning the data set to remove unwanted data in the dataset.

The Play Store apps data has enormous potential to drive app-making businesses to success. Actionable insights can be drawn for developers to work on and capture the Android market. The dataset is chosen from Kaggle. It is the web scraped data of 10k Play Store apps for analysing the Android market. It consists of in total of 10841 rows and 13 columns.

The following database keeps track of the following data fields:

- App Name: Gives the name of the all apps
- Category: Tells about which category that the app belongs to.
- Rating: This tells the rating of the app given by the people.
- Reviews: Gives the count of reviews of the people to the app.
- Size: Can be determined the size of the app.
- Installs: Tells the totals number of people installed that app.
- Type: Whether the app is Free/Paid.
- Price: Cost of particular app.
- Content Rating: Tells the age limit of the people to download.
- Last updated: App updated lastly.
- Current version: Version of the app currently.
- Android version: Supported android version.

2. Objectives/Scope of the Analysis:

The theme of a Google play store Apps is to design a representative dashboard to analyse the apps based on various app categories and other factors, which have a very important role to analyse the data.

According to that, I have done the some of the necessary analysis to analyse the data of the Google play store apps and the main Objectives are:

- ✓ Top Trending apps in Google play store Apps with people reviews.
- ✓ Percentage of Apps by Age-Category wise.
- ✓ Top app-categories with the count of total apps in it.
- ✓ Paid apps vs. Free apps
- ✓ Finding top apps in category wise in google play store
- ✓ Most un-used apps-categories in the google play store
- ✓ Up-to-date apps in the google play store

Aim of this project is to answer the above objectives in the form of visualization by creating a dashboard to convey the answers effectively.

3. Source of Dataset:

The Play Store apps data has enormous potential to drive app-making businesses to success. Actionable insights can be drawn for developers to work on and capture the Android market. The dataset is chosen from Kaggle. It is the web scraped data of 10k Play Store apps for analysing the Android market. It consists of in total of 10841 rows and 13 columns.

Android is the dominant mobile operating system today with about 85% of all mobile devices running Google's OS. The Google Play Store is the largest and most popular Android app store.

The purpose of our project was to gather and analyse detailed information on apps in the Google Play Store in order to provide insights on app features and the current state of the Android app market.

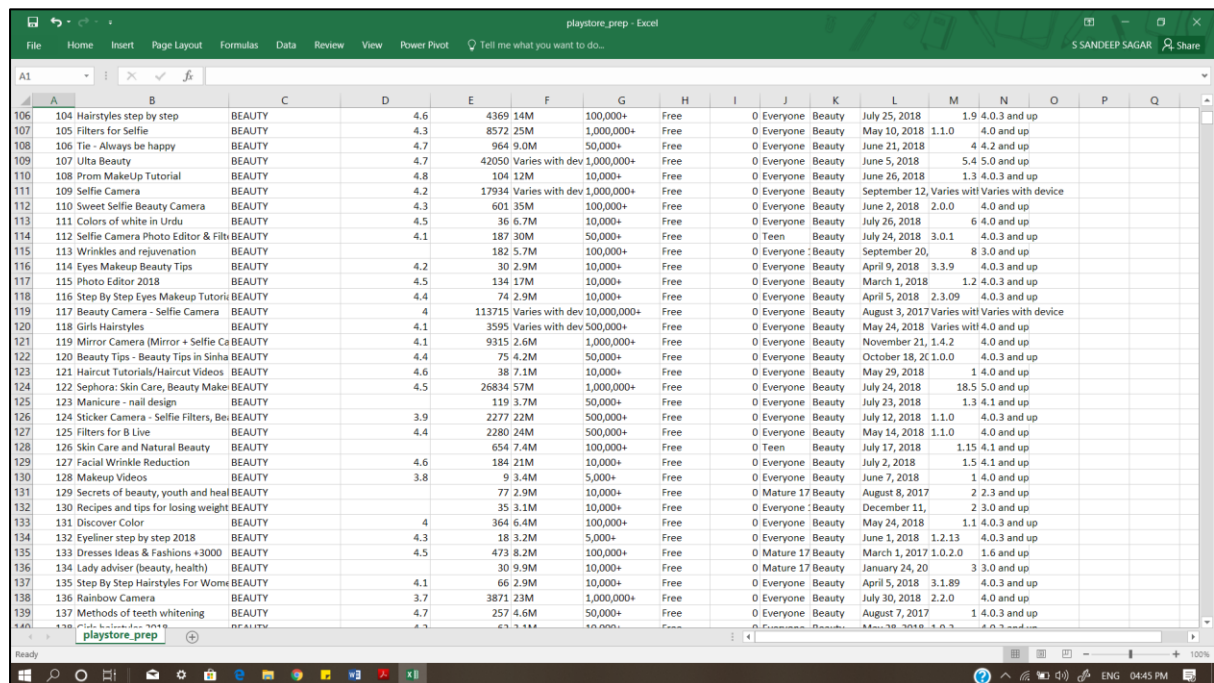
We collected descriptive information on over 3,100 apps across 11 different categories in the Google App Store. We focused on the following 11 categories: Business, Food & Drink, Books & Reference, Travel & Local, Health & Fitness, News & Magazines, Education, Social, Finance, Medical, and Entertainment.

4. ETL process:

ETL is defined as a process that extracts the data from different RDBMS source systems, then transforms the data (like applying calculations, concatenations, etc.) and finally loads the data into the Data Warehouse system. ETL full-form is Extract, Transform and Load.

As I taken dataset from the Kaggle, the data contained lot of duplicate values, Null values, and some repeated data along the dataset.

Therefore, by using **Tableau Prep** made my data clean and bring to proper data format and so, which is ready to analysis, the objectives of my dataset.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
106	104	Hairstyles step by step	BEAUTY	4.6	4369	14M	100,000+	Free	0	Everyone	Beauty	July 25, 2018	1.9	4.0.3 and up			
107	105	Filters for Selfie	BEAUTY	4.3	8572	25M	1,000,000+	Free	0	Everyone	Beauty	May 10, 2018	1.1.0	4.0 and up			
108	106	Tie - Always be happy	BEAUTY	4.7	964	9.0M	50,000+	Free	0	Everyone	Beauty	June 21, 2018		4.2 and up			
109	107	Ultia Beauty	BEAUTY	4.7	42050	Varies with dev	1,000,000+	Free	0	Everyone	Beauty	June 5, 2018		5.4 5.0 and up			
110	108	Prom MakeUp Tutorial	BEAUTY	4.8	104	12M	10,000+	Free	0	Everyone	Beauty	June 26, 2018		1.3 4.0.3 and up			
111	109	Selfie Camera	BEAUTY	4.2	17934	Varies with dev	1,000,000+	Free	0	Everyone	Beauty	September 12, 2017		Varies with device			
112	110	Sweet Selfie Beauty Camera	BEAUTY	4.3	601	35M	100,000+	Free	0	Everyone	Beauty	June 2, 2018	2.0.0	4.0 and up			
113	111	Colors of white in Urdu	BEAUTY	4.5	36	6.7M	10,000+	Free	0	Everyone	Beauty	July 26, 2018		6 4.0 and up			
114	112	Selfie Camera Photo Editor & Filtr	BEAUTY	4.1	187	30M	50,000+	Free	0	Teen	Beauty	July 24, 2018	3.0.1	4.0.3 and up			
115	113	Wrinkles and rejuvenation	BEAUTY		182	5.7M	100,000+	Free	0	Everyone	Beauty	September 20,		8 3.0 and up			
116	114	Eyes Makeup Beauty Tips	BEAUTY	4.2	30	2.9M	10,000+	Free	0	Everyone	Beauty	April 9, 2018	3.3.9	4.0.3 and up			
117	115	Photo Editor 2018	BEAUTY	4.5	134	17M	10,000+	Free	0	Everyone	Beauty	March 1, 2018		1.2 4.0.3 and up			
118	116	Step By Step Eyes Makeup Tutori	BEAUTY	4.4	74	2.9M	10,000+	Free	0	Everyone	Beauty	April 5, 2018	2.3.09	4.0.3 and up			
119	117	Beauty Camera - Selfie Camera	BEAUTY	4	113715	Varies with dev	10,000,000+	Free	0	Everyone	Beauty	August 3, 2017		Varies with device			
120	118	Girls Hairstyles	BEAUTY	4.1	3595	Varies with dev	500,000+	Free	0	Everyone	Beauty	May 24, 2018		Varies with device			
121	119	Mirror Camera (Mirror + Selfie Ca	BEAUTY	4.1	9315	2.6M	1,000,000+	Free	0	Everyone	Beauty	November 21, 1.4.2		4.0 and up			
122	120	Beauty Tips - Beauty Tips in Sinha	BEAUTY	4.4	75	4.2M	50,000+	Free	0	Everyone	Beauty	October 18, 2018	1.0.0	4.0.3 and up			
123	121	Haircut Tutorials/Haircut Videos	BEAUTY	4.6	38	7.1M	10,000+	Free	0	Everyone	Beauty	May 29, 2018		1 4.0 and up			
124	122	Sephora: Skin Care, Beauty Make	BEAUTY	4.5	26834	57M	1,000,000+	Free	0	Everyone	Beauty	July 24, 2018		18.5 5.0 and up			
125	123	Manicure - nail design	BEAUTY		119	3.7M	50,000+	Free	0	Everyone	Beauty	July 23, 2018		1.3 4.1 and up			
126	124	Sticker Camera - Selfie Filters, Be	BEAUTY	3.9	2277	22M	500,000+	Free	0	Everyone	Beauty	July 12, 2018	1.1.0	4.0.3 and up			
127	125	Filters for B Live	BEAUTY	4.4	2280	24M	500,000+	Free	0	Everyone	Beauty	May 14, 2018	1.1.0	4.0 and up			
128	126	Skin Care and Natural Beauty	BEAUTY		654	7.4M	100,000+	Free	0	Teen	Beauty	July 17, 2018		1.15 4.1 and up			
129	127	Facial Wrinkle Reduction	BEAUTY	4.6	184	21M	10,000+	Free	0	Everyone	Beauty	July 2, 2018		1.5 4.1 and up			
130	128	Makeup Videos	BEAUTY	3.8	9	3.4M	5,000+	Free	0	Everyone	Beauty	June 7, 2018		1 4.0 and up			
131	129	Secrets of beauty, youth and heal	BEAUTY		77	2.9M	10,000+	Free	0	Mature 17	Beauty	August 8, 2017		2 2.3 and up			
132	130	Recipes and tips for losing weight	BEAUTY		35	3.1M	10,000+	Free	0	Everyone	Beauty	December 11,		2 3.0 and up			
133	131	Discover Color	BEAUTY	4	364	6.4M	100,000+	Free	0	Everyone	Beauty	May 24, 2018		1.1 4.0.3 and up			
134	132	Eyeliner step by step 2018	BEAUTY	4.3	18	3.2M	5,000+	Free	0	Everyone	Beauty	June 1, 2018	1.2.13	4.0.3 and up			
135	133	Dresses Ideas & Fashions +3000	BEAUTY	4.5	473	8.2M	100,000+	Free	0	Mature 17	Beauty	March 1, 2017	1.0.2.0	1.6 and up			
136	134	Lady adviser (beauty, health)	BEAUTY		30	9.9M	10,000+	Free	0	Mature 17	Beauty	January 24, 20		3 3.0 and up			
137	135	Step By Step Hairstyles For Wome	BEAUTY	4.1	66	2.9M	10,000+	Free	0	Everyone	Beauty	April 5, 2018	3.1.89	4.0.3 and up			
138	136	Rainbow Camera	BEAUTY	3.7	3871	23M	1,000,000+	Free	0	Everyone	Beauty	July 30, 2018	2.2.0	4.0 and up			
139	137	Methods of teeth whitening	BEAUTY	4.7	257	4.6M	50,000+	Free	0	Everyone	Beauty	August 7, 2017		1 4.0.3 and up			

Through the process of ETL, we are going to clean the dataset and bring all the entities to their proper data format.

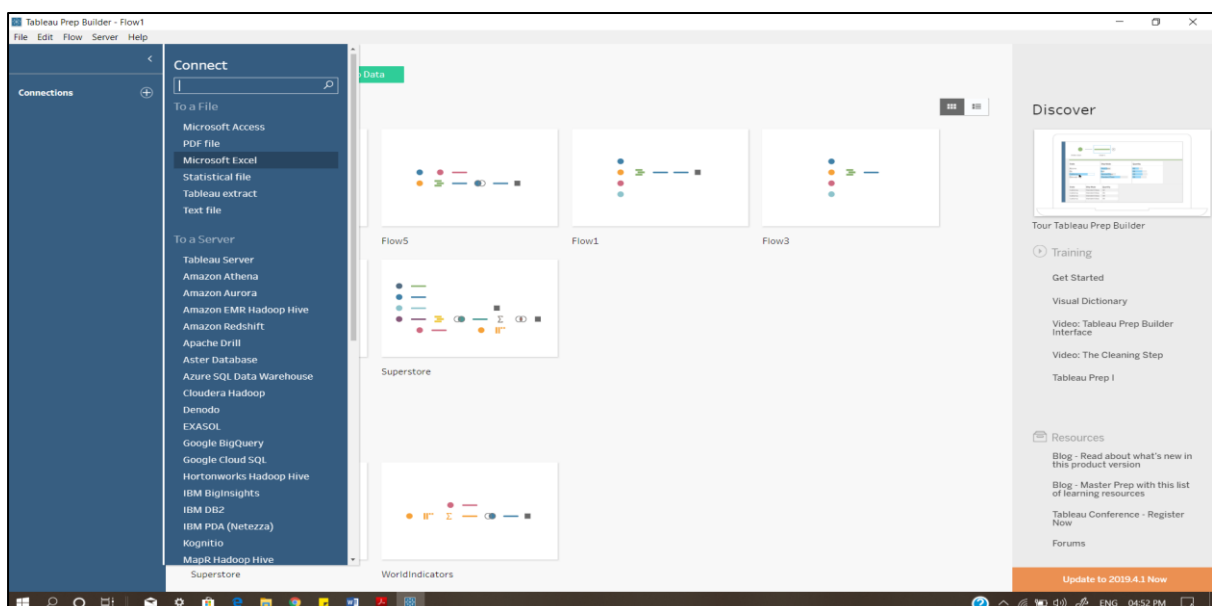
Firstly, remove the blank cells from the dataset.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
106	104	Hairstyles step by step	BEAUTY	4.6	4369	14M	100,000+	Free	0	Everyone	Beauty	July 25, 2018	1.9	4.0.3 and up			
107	105	Filters for Selfie	BEAUTY	4.3	8572	25M	1,000,000+	Free	0	Everyone	Beauty	May 10, 2018	1.1.0	4.0 and up			
108	106	Tie - Always be happy	BEAUTY	4.7	964	9.0M	50,000+	Free	0	Everyone	Beauty	June 21, 2018	4	4.2 and up			
109	107	Ultra Beauty	BEAUTY	4.7	42050	Varies with dev	1,000,000+	Free	0	Everyone	Beauty	June 5, 2018	5.4	5.0 and up			
110	108	Prom MakeUp Tutorial	BEAUTY	4.8	104	12M	10,000+	Free	0	Everyone	Beauty	June 26, 2018	1.3	4.0.3 and up			
111	109	Selfie Camera	BEAUTY	4.2	17934	Varies with dev	1,000,000+	Free	0	Everyone	Beauty	September 12, 2018	Varies with dev	Varies with device			
112	110	Sweet Selfie Beauty Camera	BEAUTY	4.3	601	35M	100,000+	Free	0	Everyone	Beauty	June 2, 2018	2.0.0	4.0 and up			
113	111	Colors of white in Urdu	BEAUTY	4.5	36	6.7M	10,000+	Free	0	Everyone	Beauty	July 26, 2018	6	4.0 and up			
114	112	Selfie Camera Photo Editor & Filter	BEAUTY	4.1	187	30M	50,000+	Free	0	Teen	Beauty	July 24, 2018	3.0.1	4.0.3 and up			
115	113	Wrinkles and rejuvenation	BEAUTY	0	182	5.7M	100,000+	Free	0	Everyone	Beauty	September 20, 2018	8	3.0 and up			
116	114	Eyes Makeup Beauty Tips	BEAUTY	4.2	30	2.9M	10,000+	Free	0	Everyone	Beauty	April 9, 2018	3.3.9	4.0.3 and up			
117	115	Photo Editor 2018	BEAUTY	4.5	134	17M	10,000+	Free	0	Everyone	Beauty	March 1, 2018	1.2	4.0.3 and up			
118	116	Step By Step Eyes Makeup Tutorial	BEAUTY	4.4	74	2.9M	10,000+	Free	0	Everyone	Beauty	April 5, 2018	2.3.09	4.0.3 and up			
119	117	Beauty Camera - Selfie Camera	BEAUTY	4	113715	Varies with dev	10,000,000+	Free	0	Everyone	Beauty	August 3, 2017	Varies with dev	Varies with device			
120	118	Girls Hairstyles	BEAUTY	4.1	3595	Varies with dev	500,000+	Free	0	Everyone	Beauty	May 24, 2018	Varies with dev	4.0 and up			
121	119	Mirror Camera (Mirror + Selfie Camera)	BEAUTY	4.1	9315	2.6M	1,000,000+	Free	0	Everyone	Beauty	November 21, 2017	1.4.2	4.0 and up			
122	120	Beauty Tips - Beauty Tips in Sinhala	BEAUTY	4.4	75	4.2M	50,000+	Free	0	Everyone	Beauty	October 18, 2017	2.0.0	4.0.3 and up			
123	121	Haircut Tutorial/Haircut Videos	BEAUTY	4.6	38	7.1M	10,000+	Free	0	Everyone	Beauty	May 29, 2018	1	4.0 and up			
124	122	Sephora: Skin Care, Beauty Make	BEAUTY	4.5	26834	57M	1,000,000+	Free	0	Everyone	Beauty	July 24, 2018	18.5	5.0 and up			
125	123	Manicure - nail design	BEAUTY	0	119	3.7M	50,000+	Free	0	Everyone	Beauty	July 23, 2018	1.3	4.1 and up			
126	124	Sticker Camera - Selfie Filters, Beauty	BEAUTY	3.9	2277	22M	500,000+	Free	0	Everyone	Beauty	July 12, 2018	1.1.0	4.0.3 and up			
127	125	Filters for B Live	BEAUTY	4.4	2280	24M	500,000+	Free	0	Everyone	Beauty	May 14, 2018	1.1.0	4.0 and up			
128	126	Skin Care and Natural Beauty	BEAUTY	0	654	7.4M	100,000+	Free	0	Teen	Beauty	July 17, 2018	1.15	4.1 and up			
129	127	Facial Wrinkle Reduction	BEAUTY	4.6	184	21M	10,000+	Free	0	Everyone	Beauty	July 2, 2018	1.5	4.1 and up			
130	128	Makeup Videos	BEAUTY	3.8	9	3.4M	5,000+	Free	0	Everyone	Beauty	June 7, 2018	1	4.0 and up			
131	129	Secrets of beauty, youth and health	BEAUTY	0	77	2.9M	10,000+	Free	0	Mature 17	Beauty	August 8, 2017	2	2.3 and up			
132	130	Recipes and Tips for losing weight	BEAUTY	0	35	3.1M	10,000+	Free	0	Everyone	Beauty	December 11, 2017	2	3.0 and up			
133	131	Discover Color	BEAUTY	4	364	6.4M	100,000+	Free	0	Everyone	Beauty	May 24, 2018	1.1	4.0.3 and up			
134	132	Eyeliner step by step 2018	BEAUTY	4.3	18	3.2M	5,000+	Free	0	Everyone	Beauty	June 1, 2018	1.2.13	4.0.3 and up			
135	133	Dresses Ideas & Fashions +3000	BEAUTY	4.5	473	8.2M	100,000+	Free	0	Mature 17	Beauty	March 1, 2017	1.0.2.0	1.6 and up			
136	134	Lady adviser (beauty, health)	BEAUTY	0	30	9.9M	10,000+	Free	0	Mature 17	Beauty	January 24, 2018	3	3.0 and up			
137	135	Step By Step Hairstyles For Women	BEAUTY	4.1	66	2.9M	10,000+	Free	0	Everyone	Beauty	April 5, 2018	3.1.89	4.0.3 and up			
138	136	Rainbow Camera	BEAUTY	3.7	3871	23M	1,000,000+	Free	0	Everyone	Beauty	July 30, 2018	2.2.0	4.0 and up			
139	137	Methods of teeth whitening	BEAUTY	4.7	257	4.6M	50,000+	Free	0	Everyone	Beauty	August 7, 2017	1	4.0.3 and up			
140	138	Beauty Camera - Selfie Camera	BEAUTY	4.3	63	3.1M	10,000+	Free	0	Everyone	Beauty	May 30, 2018	1.0.3	4.0.3 and up			

For this, select the whole dataset. Go to Find and Select in the Home tab of excel. Select Go to Special from the drop down menu and then tick the blank option. All the blank cells will be selected. Then go to Delete option in the home tab again and select Delete Rows from the drop down menu. This will remove any rows with blank cells.

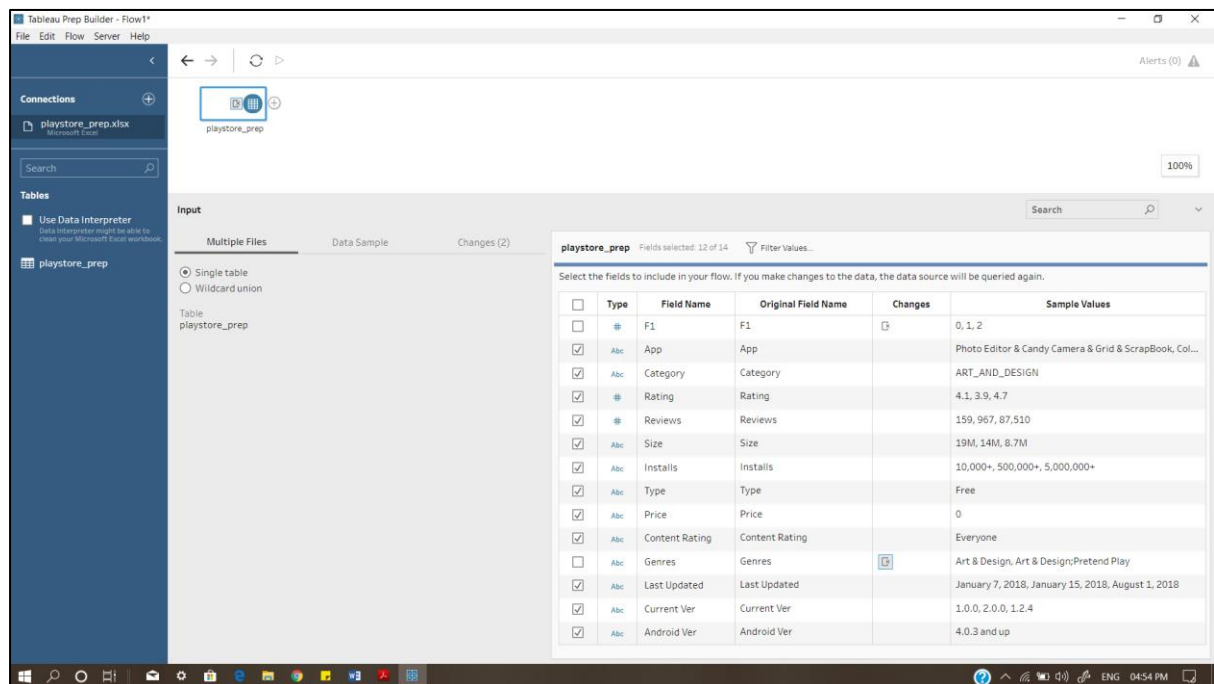
Further steps to be done in Tableau.

Step 1: Open the Tableau Prep and adding connection to our Dataset.



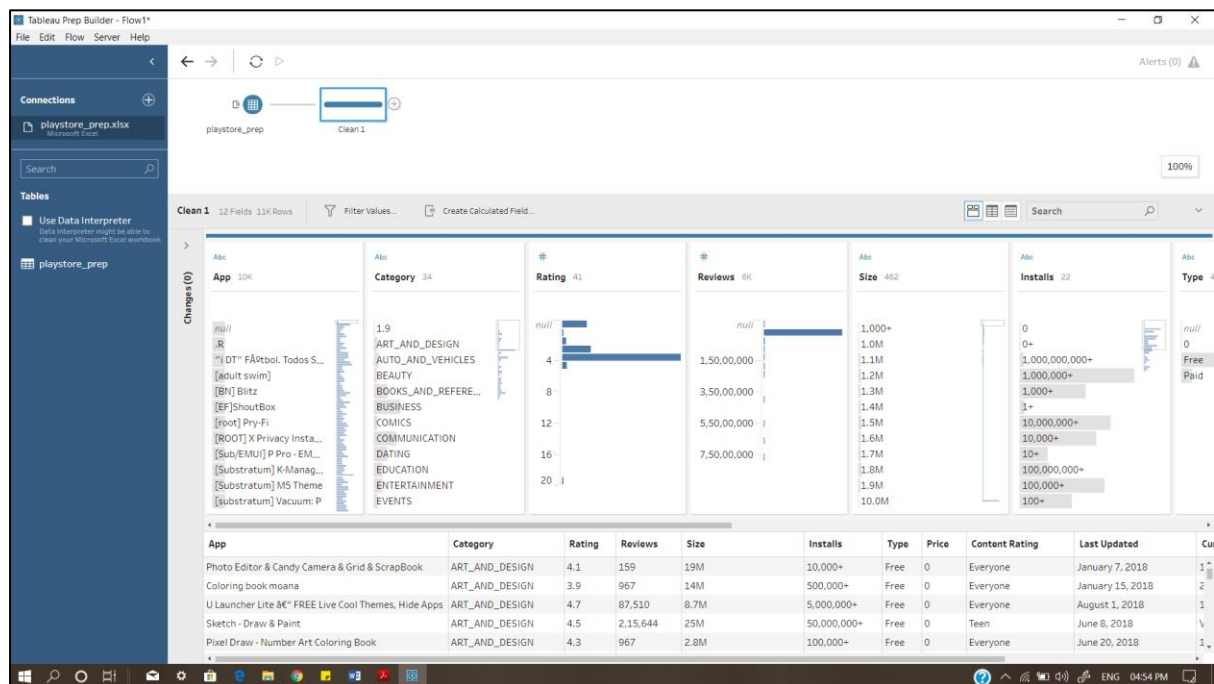
This is very simple, just click the add button on the connections and go to the Microsoft excel and there go to the file path and select it and add it

Step 2: Removing columns that are not necessary.



Doing this you just uncheck the column name as above seen in the diagram and this makes to remove all the data in that column.

Step 3: Adding clean step to the following dataset.



On clicking, add step in the above data the cleaning step is applied

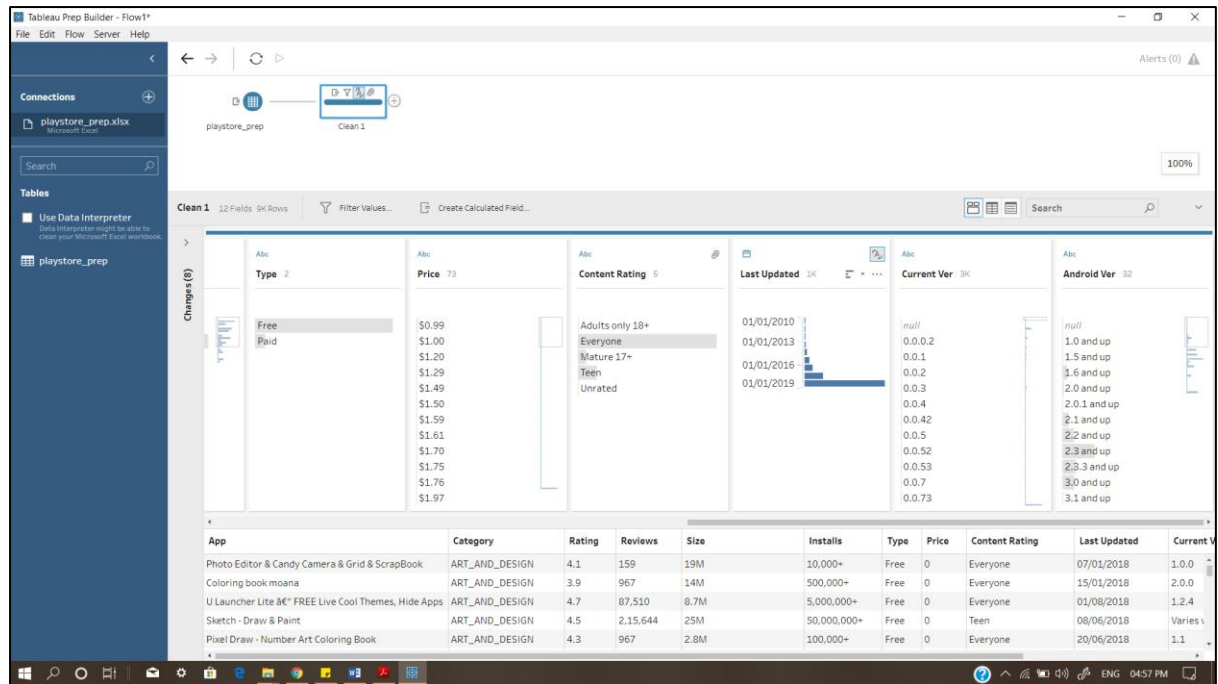
Step 4: Cleaning all the data column wise.

The screenshot shows the Tableau Prep Builder interface. In the 'Clean 1' step, a context menu is open over the 'App' column. The 'Trim Spaces' option is selected. The data preview shows columns: App, Category, Rating, Reviews, Size, Installs, Type, Price, Content Rating, Last Updated, and Current Ver. The 'App' column contains various app names, and the 'Category' column contains 'ART_AND_DESIGN'.

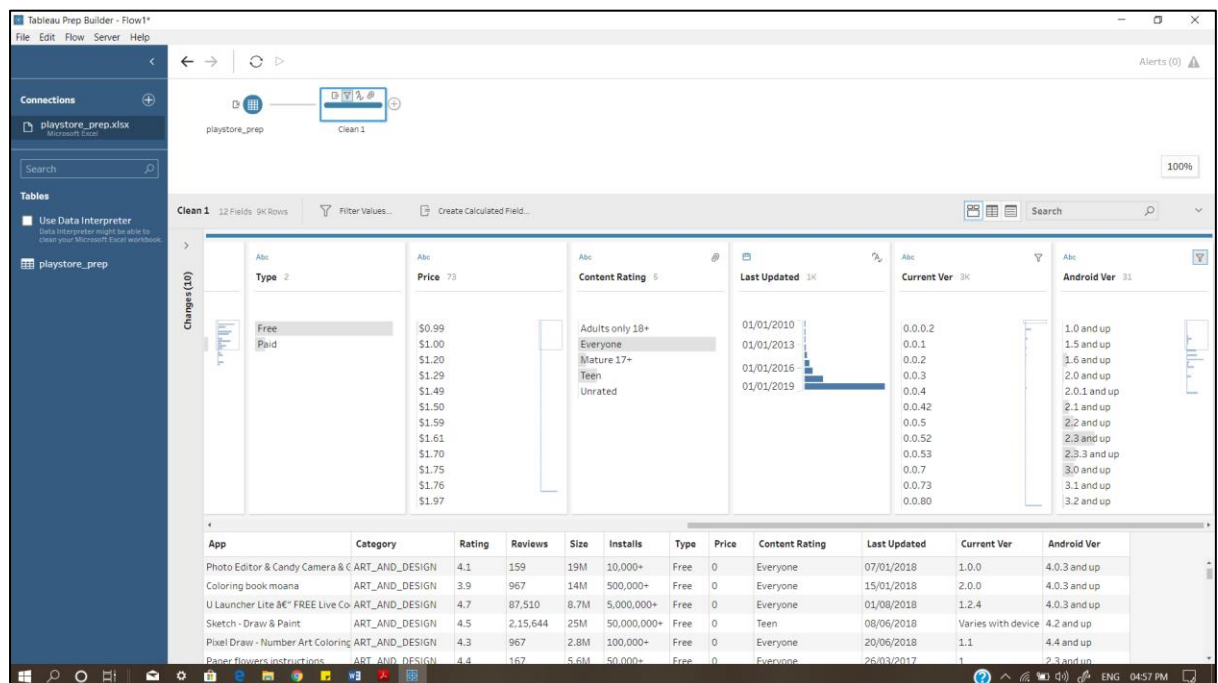
Firstly, remove all the white spaces in the app name column using trim spaces and continue by checking all the columns are there in proper format if not change their datatype.

The screenshot shows the Tableau Prep Builder interface. In the 'Clean 1' step, the 'App' column is highlighted, and the 'Trim Spaces' option is selected. The data preview shows columns: App, Category, Rating, Reviews, Size, Installs, Current Ver, Content Rating, and Last Updated. The 'App' column contains various app names, and the 'Category' column contains 'ART_AND_DESIGN'.

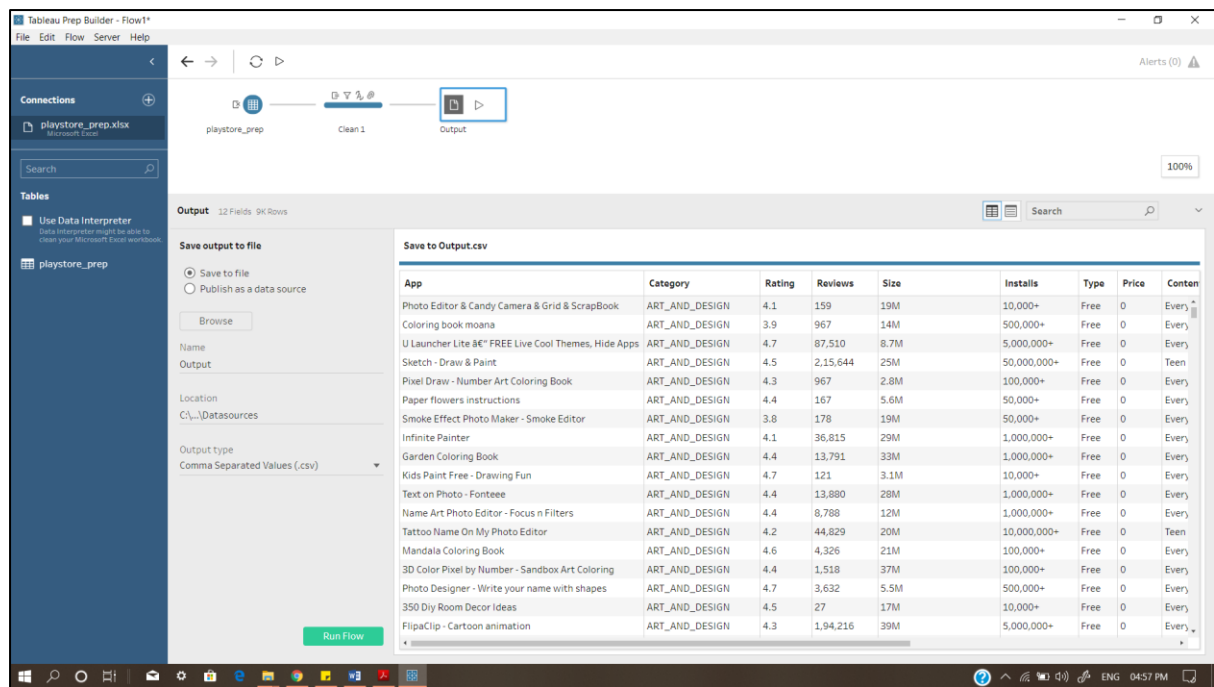
Here, the two names are similar in the column content rating so we have to group it to anyone.



And now change the datatype of the last updated column from string to date.



Therefore, check all the columns whether the null values present or not if present remove the null values by excluding them.



Now after cleaning all the data add the output step to the clean step. Moreover, select the path to save it and choose the csv format below the option. In addition, click Run Flow to execute the process and so the file is created with the proper format.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	App Name	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Last Updated	Current Ver	Android Ver		
1	Photo Editor & Candy Camera & Grid & ScrapBook	ART_AND_DESIGN	4.1	159	19M	10,000+	Free	0.00	Everyone	07-01-2018	1.0.0	4.0.3 and up		
2	Coloring book moana	ART_AND_DESIGN	3.9	967	14M	500,000+	Free	0.00	Everyone	15-01-2018	2.0.0	4.0.3 and up		
3	U Launcher Lite & FREE Live Cool Themes, Hide Apps	ART_AND_DESIGN	4.7	87,510	8.7M	5,000,000+	Free	0.00	Everyone	01-08-2018	1.2.4	4.0.3 and up		
4	Sketch - Draw & Paint	ART_AND_DESIGN	4.5	215,644	25M	50,000,000+	Free	0.00	Teen	08-06-2018	Varies with device	4.2 and up		
5	Pixel Draw - Number Art Coloring Book	ART_AND_DESIGN	4.3	967	2.8M	100,000+	Free	0.00	Everyone	20-06-2018	1.1	4.4 and up		
6	Paper flowers instructions	ART_AND_DESIGN	4.4	167	5.6M	50,000+	Free	0.00	Everyone	26-03-2017	1	2.3 and up		
7	Smoke Effect Photo Maker - Smoke Editor	ART_AND_DESIGN	3.8	178	19M	50,000+	Free	0.00	Everyone	26-04-2018	1.1	4.0.3 and up		
8	Infinite Painter	ART_AND_DESIGN	4.1	36,815	29M	1,000,000+	Free	0.00	Everyone	14-06-2018	6.1.61.1	4.2 and up		
9	Garden Coloring Book	ART_AND_DESIGN	4.4	13,791	33M	1,000,000+	Free	0.00	Everyone	20-09-2017	2.9.2	3.0 and up		
10	Kids Paint Free - Drawing Fun	ART_AND_DESIGN	4.7	121	3.1M	10,000+	Free	0.00	Everyone	03-07-2018	2.8	4.0.3 and up		
11	Text on Photo - Fonteez	ART_AND_DESIGN	4.4	13,880	28M	1,000,000+	Free	0.00	Everyone	27-10-2017	1.0.4	4.1 and up		
12	Name Art Photo Editor - Focus n Filters	ART_AND_DESIGN	4.4	8,788	12M	1,000,000+	Free	0.00	Everyone	31-07-2018	1.0.15	4.0 and up		
13	Tattoo Name On My Photo Editor	ART_AND_DESIGN	4.2	44,829	20M	10,000,000+	Free	0.00	Teen	02-04-2018	3.8	4.1 and up		
14	Mandala Coloring Book	ART_AND_DESIGN	4.6	4,326	21M	100,000+	Free	0.00	Everyone	26-06-2018	1.0.4	4.4 and up		
15	3D Color Pixel by Number - Sandbox Art Coloring	ART_AND_DESIGN	4.4	1,518	37M	100,000+	Free	0.00	Everyone	03-08-2018	1.2.3	2.3 and up		
16	Photo Designer - Write your name with shapes	ART_AND_DESIGN	4.7	3,632	5.5M	500,000+	Free	0.00	Everyone	31-07-2018	3.1	4.1 and up		
17	350 Diy Room Decor Ideas	ART_AND_DESIGN	4.5	27	17M	10,000+	Free	0.00	Everyone	07-11-2017	1	2.3 and up		
18	FlipaClip - Cartoon animation	ART_AND_DESIGN	4.3	194,216	39M	5,000,000+	Free	0.00	Everyone	03-08-2018	2.2.5	4.0.3 and up		
19	ibis Paint X	ART_AND_DESIGN	4.6	224,399	31M	10,000,000+	Free	0.00	Everyone	30-07-2018	5.5.4	4.1 and up		
20	Logo Maker - Small Business	ART_AND_DESIGN	4	450	14M	100,000+	Free	0.00	Everyone	20-04-2018	4	4.1 and up		
21	Boys Photo Editor - Six Pack & Men's Suit	ART_AND_DESIGN	4.1	654	12M	100,000+	Free	0.00	Everyone	20-03-2018	1.1	4.0.3 and up		
22	Superheroes Wallpapers 4K Backgrounds	ART_AND_DESIGN	4.7	7699	4.2M	500,000+	Free	0.00	Everyone	12-07-2018	2.2.6.2	4.0.3 and up		
23	Mcqueen Coloring pages	ART_AND_DESIGN	0	61	7.0M	100,000+	Free	0.00	Everyone	07-03-2018	1.0.0	4.1 and up		
24	HD Mickey Minnie Wallpapers	ART_AND_DESIGN	4.7	118	23M	50,000+	Free	0.00	Everyone	07-07-2018	1.1.3	4.1 and up		
25	Harley Quinn wallpapers HD	ART_AND_DESIGN	4.8	192	6.0M	10,000+	Free	0.00	Everyone	25-04-2018	1.5	3.0 and up		
26	Colorfit - Drawing & Coloring	ART_AND_DESIGN	4.7	20,260	25M	500,000+	Free	0.00	Everyone	11-10-2017	1.0.8	4.0.3 and up		
27	Animated Photo Editor	ART_AND_DESIGN	4.1	203	6.1M	100,000+	Free	0.00	Everyone	21-03-2018	1.03	4.0.3 and up		
28	Pencil Sketch Drawing	ART_AND_DESIGN	3.9	136	4.6M	10,000+	Free	0.00	Everyone	12-07-2018	6	2.3 and up		
29	Easy Realistic Drawing Tutorial	ART_AND_DESIGN	4.1	223	4.2M	100,000+	Free	0.00	Everyone	22-08-2017	1	2.3 and up		
30	Pink Silver Bow Keyboard Theme	ART_AND_DESIGN	4.2	1120	9.2M	100,000+	Free	0.00	Everyone	12-07-2018	6.7.12.2018	4.0.3 and up		
31	Art Drawing Ideas	ART_AND_DESIGN	4.1	227	5.2M	50,000+	Free	0.00	Everyone	31-05-2018	1.2	2.3 and up		
32	Anime Manga Coloring Book	ART_AND_DESIGN	4.5	5035	11M	100,000+	Free	0.00	Everyone	19-07-2018	2.2	4.0 and up		
33	Easy Origami Ideas	ART_AND_DESIGN	4.2	1015	11M	100,000+	Free	0.00	Everyone	06-01-2018	1.1.0	4.1 and up		
34	Coloring Ideas	ART_AND_DESIGN	4.3	363	4.3M	10,000+	Free	0.00	Teen	33-04-2018	1.6	4.1 and up		

Finally, the dataset looks like.

5. Analysis on Dataset:

5.1 Top Trending apps in Google play store Apps with people reviews.

Introduction:

In this Analysis, we are going to find the top trending apps in the google play store with the help of people ratings to the apps that they like more.

General description:

By analysing the data showing the details of only Top rated apps.

Specific Requirements:

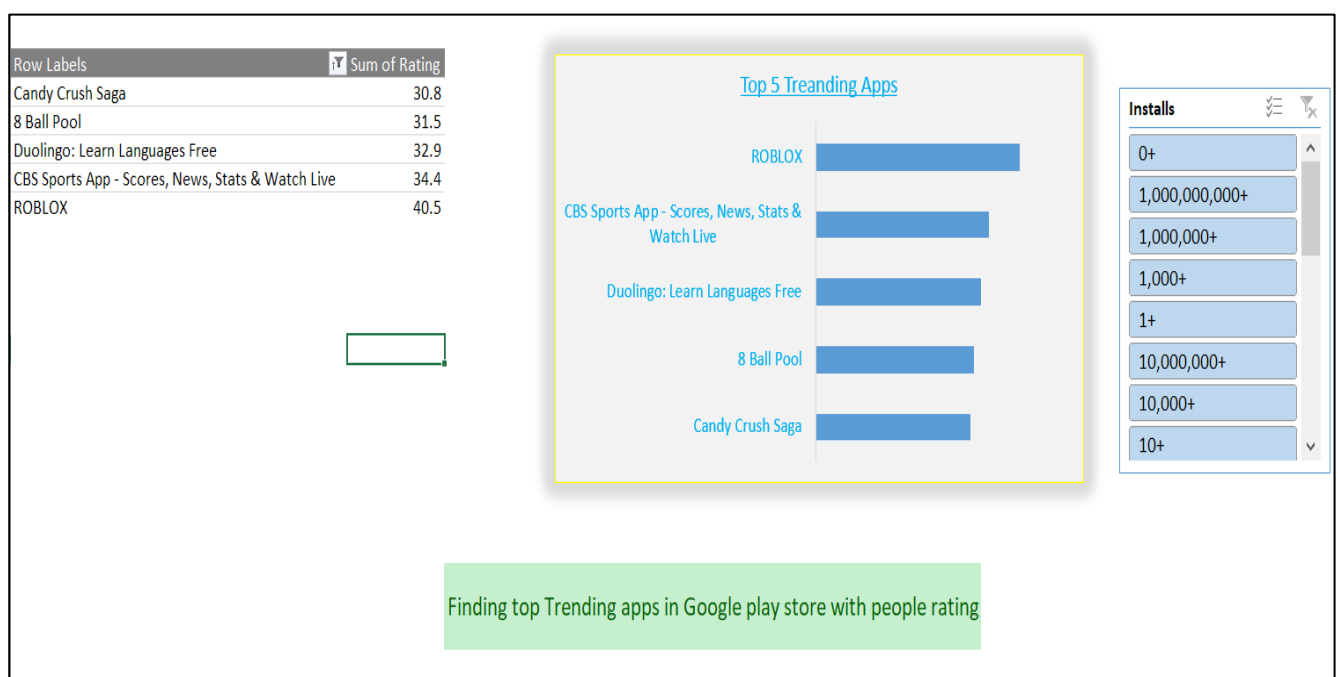
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place apps in the rows and place Rating in the values and extract only highest Rating app that is the app, which is most liked by the users and also add the Installs as slicer to analyse with the number of installs.

Analysis results:

By these analysis Top Trending apps, details are extracted.

Visualization:

Showing the output with the help of pivot chart.



5.2 Percentage of Apps by Age-Category wise.

Introduction:

This tells the apps that are divided with the age limit and their percentage

General description:

Showing the details of how many apps are there in respective age limit.

Specific Requirements:

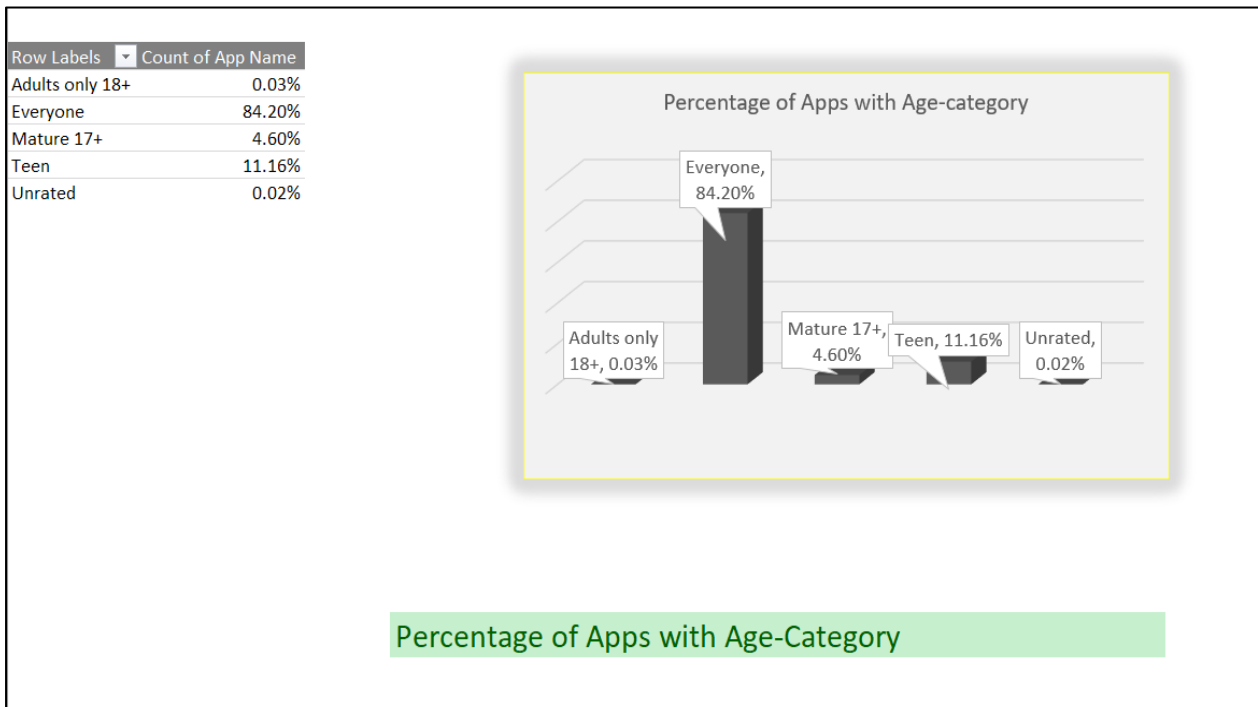
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place content rating in the rows and place apps in the values and converted into their actual percentage.

Analysis results:

By this analysis showing, the how many apps are there for particular age limit?

Visualization:

Showing the output with the help of pivot chart.



5.3 Top app-categories with the count of total apps in it.

Introduction:

This is to analyse that which app-categories more apps are came in the google play store, by counting the number of apps in each categories.

General description:

By analysing the data showing the details of count of apps in app categories.

Specific Requirements:

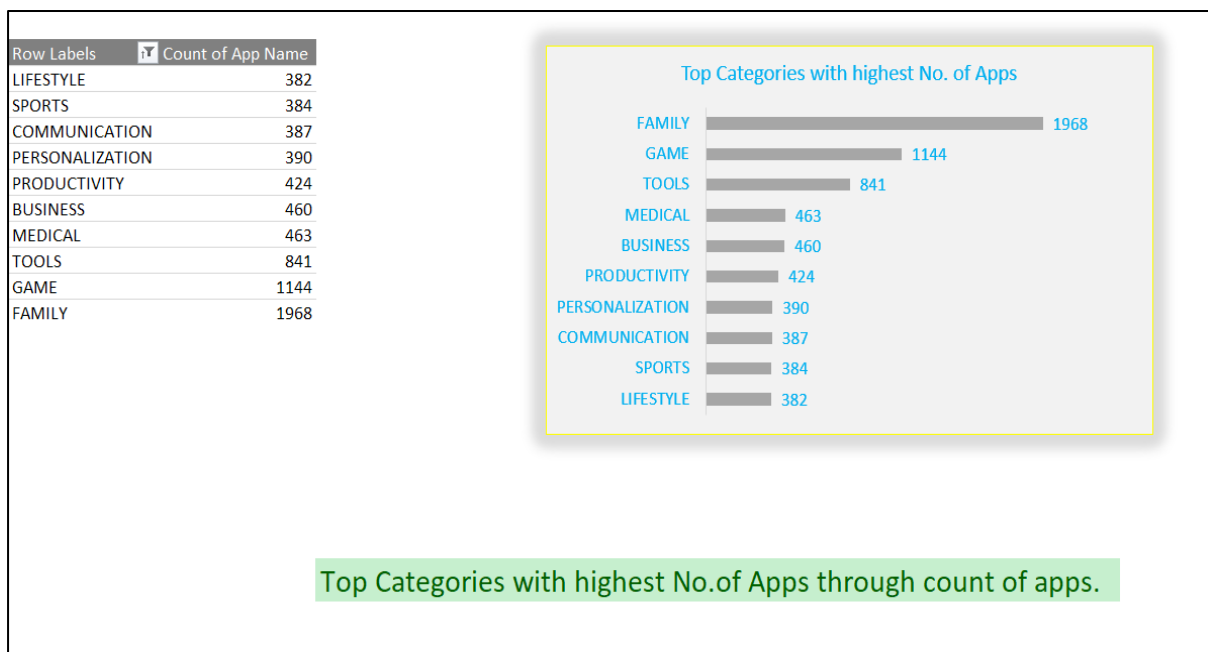
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place apps in the rows and place Rating in the values and extract only highest Rating app that is the app, which is most liked by the users .

Analysis results:

By these analysis Top app categories with highest number of apps.

Visualization:

Showing the output with the help of pivot chart.



5.4 Paid apps vs. Free apps

Introduction:

This is to analyse that apps that are available for free and some are for money.

General description:

By analysing the data showing the details of count of apps in each categories.

Specific Requirements:

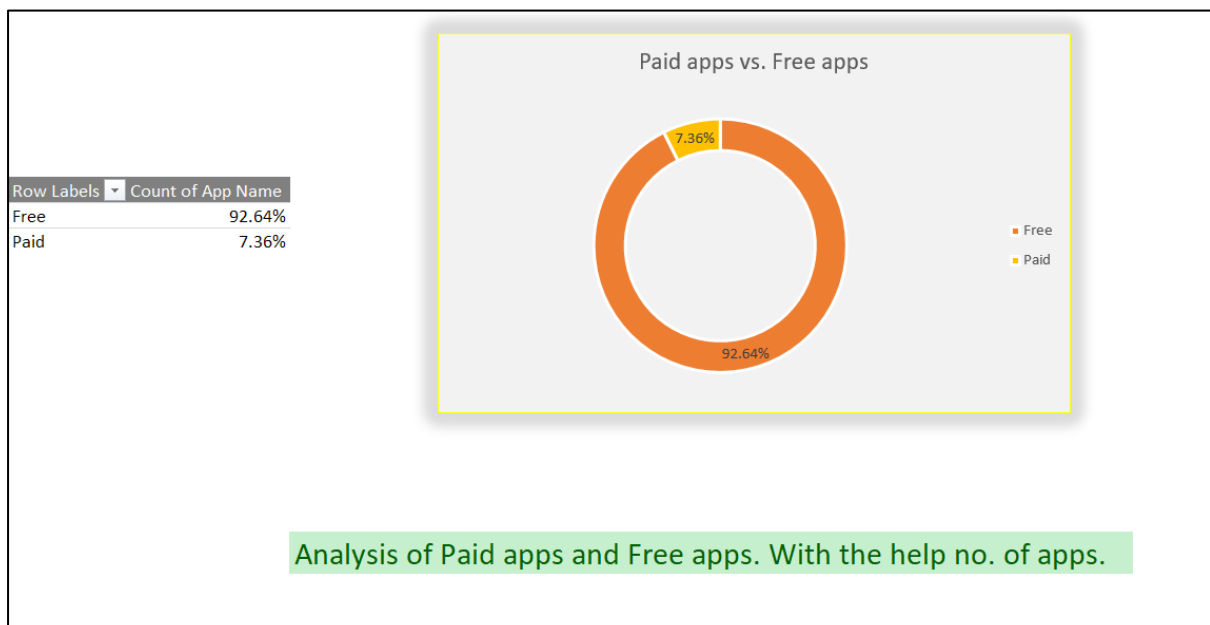
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place type in the rows and place apps in the values and extract only highest Rating app that is the app, which is most liked by the users .

Analysis results:

By these analysis total number of apps in the respective categories.

Visualization:

Showing the output with the help of pivot chart.



5.5 Finding top apps in category wise in google play store

Introduction:

This is to analyse that top apps that are present in each category with the help of their people ratings.

General description:

By analysing the data showing the details of count of apps in app categories.

Specific Requirements:

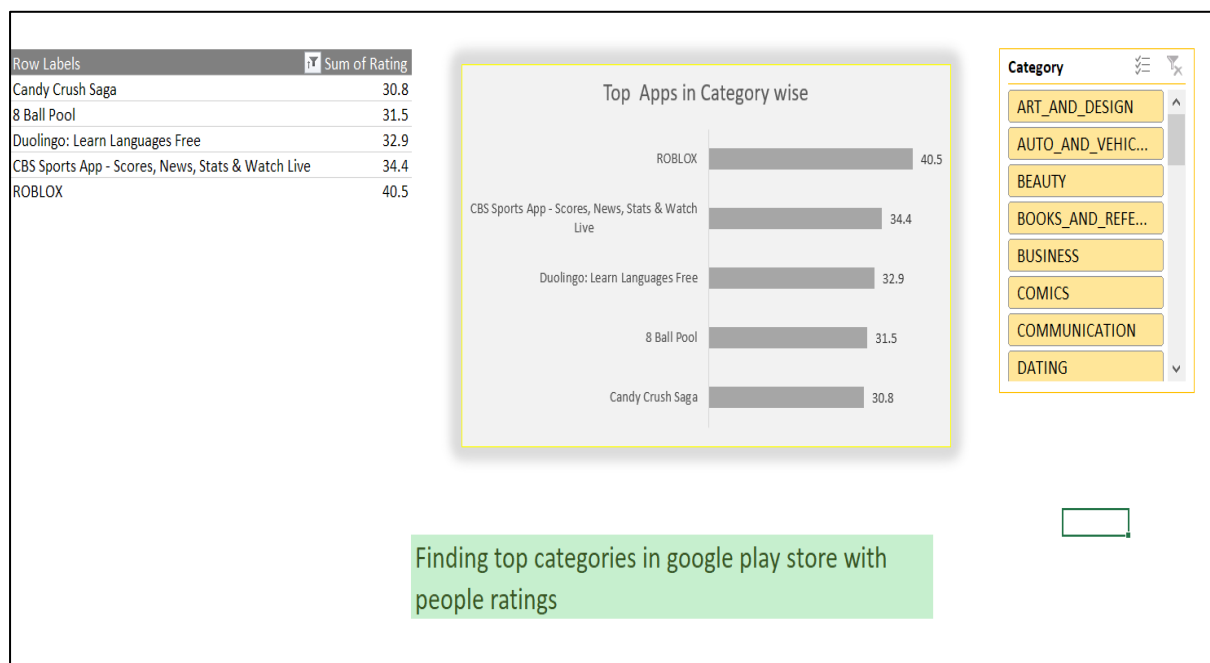
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place apps in the rows and place Rating in the values and extract only highest Rating app that is the app, which is most liked by the users .

Analysis results:

By these analysis Top app with highest number of ratings in each category.

Visualization:

Showing the output with the help of pivot chart.



5.6 Most un-used apps-categories in the google play store

Introduction:

This is to analyse that which app-categories are not used most by the people with the help of the people reviews and their downloads.

General description:

By analysing the data showing the details of count of apps in app categories.

Specific Requirements:

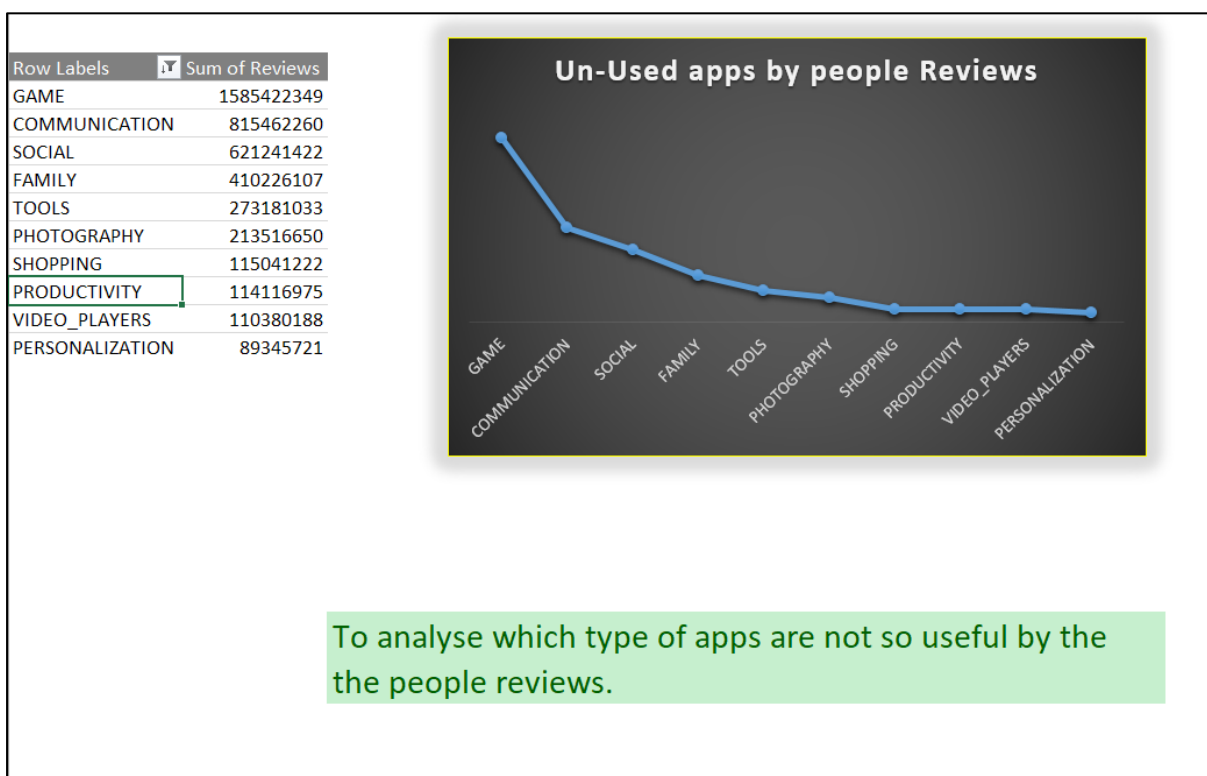
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place apps in the rows and place Rating in the values and extract only highest Rating app that is the app, which is most liked by the users .

Analysis results:

By these analysis most un-used apps by the people by their ratings.

Visualization:

Showing the output with the help of pivot chart.



5.7 Up-to-date apps in the google play store

Introduction:

This is to analyse that which app-categories are most up-to-date with the current scenario and the help of last updated date in the dataset.

General description:

By analysing the data showing the details of count of apps in app categories whether they up to date are not.

Specific Requirements:

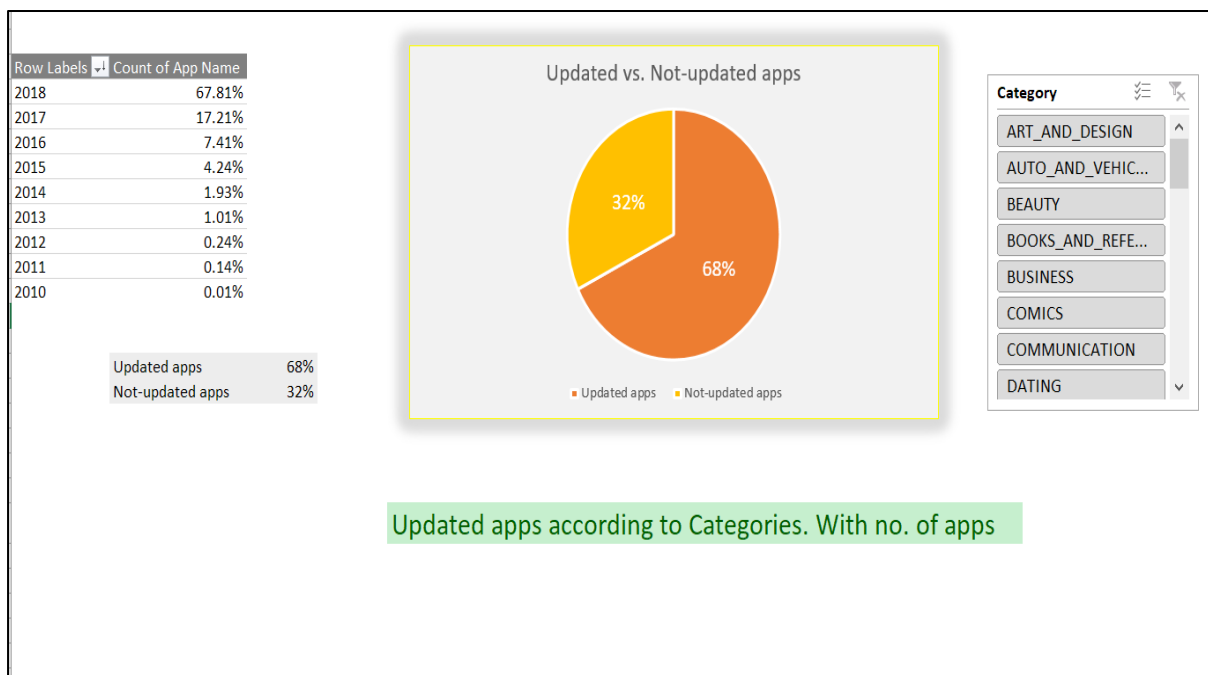
Creating the pivot table and extracting only the apps data and its installs data from the google play store dataset, place years in the rows and place apps in the values and convert all the count of apps into their percentage with their grand totals.

Analysis results:

By these analysis that the total number of apps that are up to date.

Visualization:

Showing the output with the help of pivot chart.



6. List of Analysis with results:

For all the analysis, I have created a Dashboard, which we can see all the analysis in one place.

By using slicers, we can automatically see the analysis of the results in visually.



From this Dashboard, we can tell:

- ✓ Top Trending apps in Google play store Apps with people reviews.
- ✓ Percentage of Apps by Age-Category wise.
- ✓ Top app-categories with the count of total apps in it.
- ✓ Paid apps vs. Free apps
- ✓ Finding top apps in category wise in google play store
- ✓ Most un-used apps-categories in the google play store
- ✓ Up-to-date apps in the google play store

7. References:

- ✓ Visited <https://community.tableau.com/> to know how the operations done on tableau.
- ✓ Referred MICROSOFT EXCEL 2016 BIBLE: THE COMPREHENSIVE TUTORIAL RESOURCE book regarding to how to do pivoting and how to do visualization for the particular dataset.

8. Bibliography:

- ✓ Downloaded the Google play store dataset from www.kaggle.com.
- ✓ I have downloaded tableau from [www.tableau prep for students.com](http://www.tableau.com/learn/paths/prepare/) for cleaning of the data set.
- ✓ <https://medium.com/the-research-nest/data-science-tutorial-analysis-of-the-google-play-store-dataset-c720330d4903>
- ✓ <https://nycdatascience.com/blog/student-works/web-scraping/analysis-of-apps-in-the-google-play-store/>
- ✓ <https://www.pewinternet.org/2015/11/10/an-analysis-of-apps-in-the-google-play-store>