PLAY STORE APP REVIEW ANALYSIS

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ABSTRACT :

- The google play store is one of the largest and most popular Android app stores. It has an enormous amount of data that can be used to make an optimal model.

- We have used a raw data set of Google Play Store from the Kagglewebsite. This data set contains 13 different features that can be used forpredicting whether an app will be successful or not using different features.

- This data set is scraped from the Google Play Store. This journal talks about different classifier models that we used for prediction purposes and finding which one gives the highest accuracy.

- This journal also gives detailed information on feature extraction and the complete data visualization done on this data set.

PROBLEM STATEMENT :

- Google play store is mostly use app store worldwide also top globalmarket share.

- My main objective is to find key factor responsible for app success and engagement of users.

- Thousands of new app regularly update play store of different Category.

- I find distribution of every app based on their size, installs, reviews andmuch more.

DATA SUMMARY:

- The dataset provided was cleaned but we found some of the missing andnull values in the column. By using info () method with "play_store_data_copy.info ()" which shows total 13 data columns. Wefound that –

- The dataset has a shape of (10841, 13) but for proper analysis we've taken 9360 columns and 13 rows.

- We have use the following column from the dataset:
  - App
  - Category
  - Rating
  - Review
  - Size
  - Installs
  - Type
  - Price
  - Content Rating
  - Genres
  - Last Updated
  - Current Ver
  - Android Ver

INTRODUCTION:

Mobile industry growing rapidly, competition for apps also grown significantly so developer need to do enough research to make appsuccess.

The Google Play Store is found to be the largest app market in the world.It has been observed that although it generates more than double the downloads than the Apple App Store but makes only half the money compared to the App Store.

We perform Data Cleaning over the dataset. Further we divided our project in Four main parts i.e. Analysis on Play Store Data and Reviews Data Analysis based on Cancellations, General Analysis,

Data Visualization. After the data set is ready, we try to analyze the dataset using different plots and remove the stuff not needed from the data set.

OBJECTIVE:

- To understand consumer behaviour and demand, how they are reacts to different categories of genre of google play store apps
- Find the most popular and trending apps in recent times
- Find how small changes or update impacts on app performance
- Analyse the reviews, rating sentiments of people towards various apps in play store
- Above all, help developers or clients to recognize the gap, make the app better and meet customer expectations

STEPS INVOLVED

- Understanding The Data

  Before get started with the project we firstly look up at dataset. The datasetwas pretty cleaned. The column doesn't have any string, list and dictionary values. By looking to data we came up with many creative ideas that how we can deal with those column.

- Discusing Problem Statement

  After analyzing the datasets we discussed with every single problem to overcome it. We all decided to divide our task and initialized with our own problem statement. The problem statement were based on target variable we took for analysis.

- Data cleaning

  The next task was data cleaning which was easy with this dataset. As mentioned in above points the data were float64 dtype , int64 dtype, object dtype,datetime64. Some of the column like Android Ver, Current Ver, etc was having null values. So, we decided to keep on hold for further analysis.

- Exploratory Data Analysis

  After data cleaning it was sure to target some important columns for Exploratory Data Analysis. Matching the data with correct suitable problemby python libraries to result some insightful visualization was great task.
  These also gives us a more information from different charts and graphs.

- Visualization of analysis:

  The EDA parts make clearer about data in a picture and graphical form. Mainly we perform matplotlib and seaborn libraries of python for the data analysis. The libraries helps a lot with bar charts, pie charts, dist plot, scatterplot, box plot, line charts and many more.

- Results and Conclusions

The dataset contains possibilities to deliver insights to understand customerdemands better and thus help developers to popularize the product.After analysing the dataset we have got answers to some of the serious and interesting questions which any of the android users would love to know.

DATA ANALYSIS :

Analysis Based On Play Store Data

General Analysis

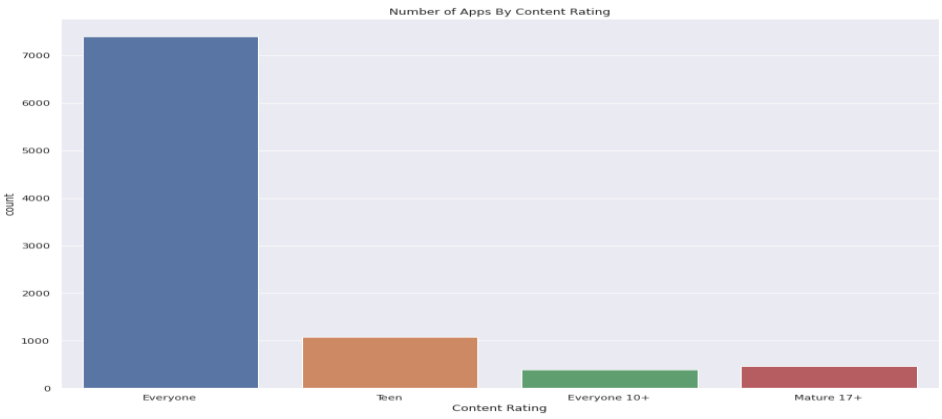
Data Description

- By using head() method we explore the top rows.
- By using info() method we find out the data type of all columns.
- By using shape function we find out number of rows and columns.
- By using describe() method compute and display summarystatistic for a python dataframe.

Sanity Checks

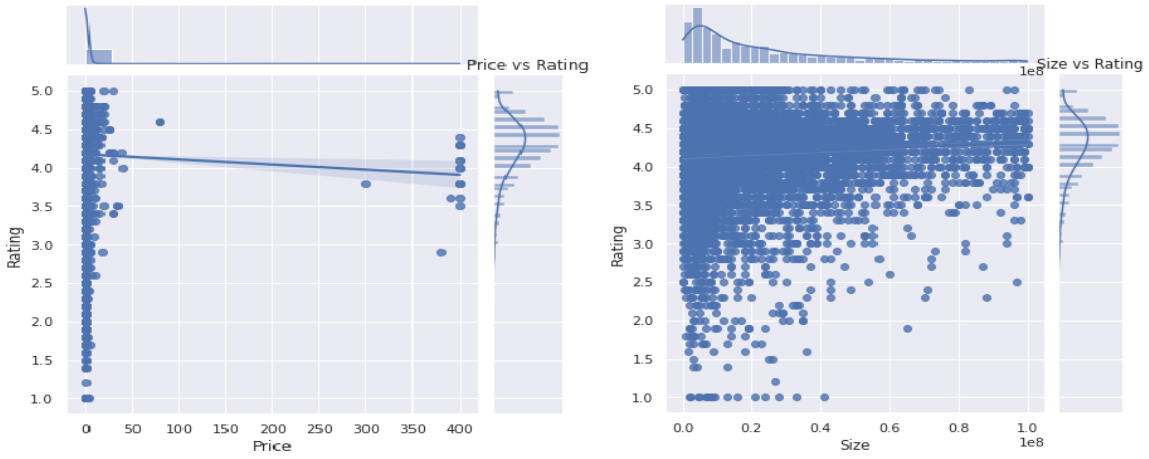
- Check for the following and handle accordingly.

Top Content Rating



In the following plot of top content rating here adult only 18+ and unrated apps have very few record so drop dose as they won't help inthe analysis here everyone , teen , everyone 10+ , mature 17+ those are top content rating values .

Effect Of Price And Size Vs Rating



Joint plot to understand the effect of size on rating.The apps of lower size are rated distributely

They also contribute to the lowest rated apps of greater size are rated better as compare to the app of small sizes the frequency of the small app is also weight to apps higher then the app with large sizes .The maximum number of apps is around twenty thousand in size the regression line shows on upward trend as the size of the app increases which shows that the apps with greater size provide a better experience to the user and price goes up but there are very few apps with higher but they are very good.

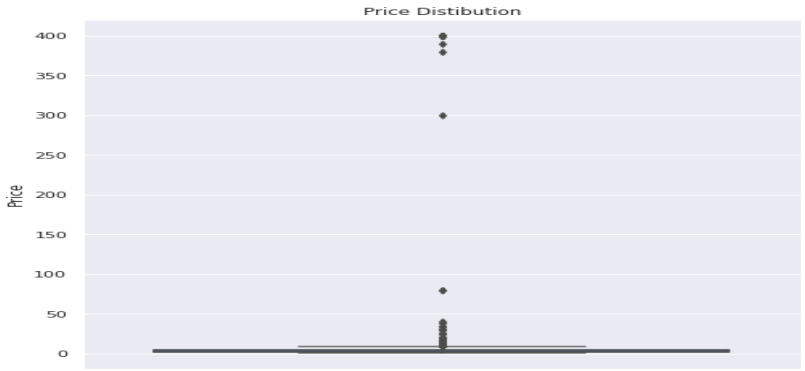
Analysis On Play Store Data

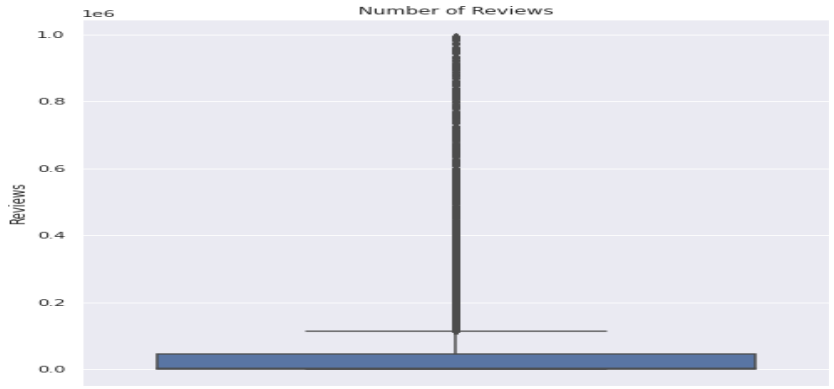
Analysis Based on Cancelation

Drop the missing values

- By using dropna() method drop the missing values in dataframe

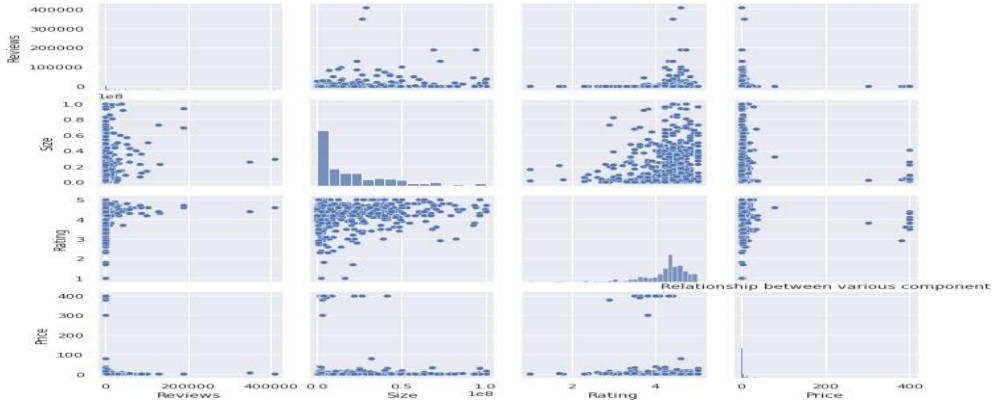
Cancellation of outliers





- Price distribution suitable graph to indentify outlierin price
- Number of Reviews here we can find out the maximum outliers in reviews and minimum outliersin reviews .

Make a pair plot with the column



- Further pair plot read with the column reviews size ,rating , price .

Create five bucket based on size

Analysis On Play Store Data Reviews:

Google play store review sentiment analysis it shows sentiment polarity on xaxis an sentiment subjectivity on y axis

In this scatered plot shows :

- Positive sentiment as red colour
- Negative sentiment as blue colour
- Natural sentiment as white colour

From the above scatered plot it can be concluded that sentiment subjectivity is not always proportional to sentiment polarity but in maximum number of cases, it show a proportional behaviour when variance is to high or low .

Inside From Data

- World cloud

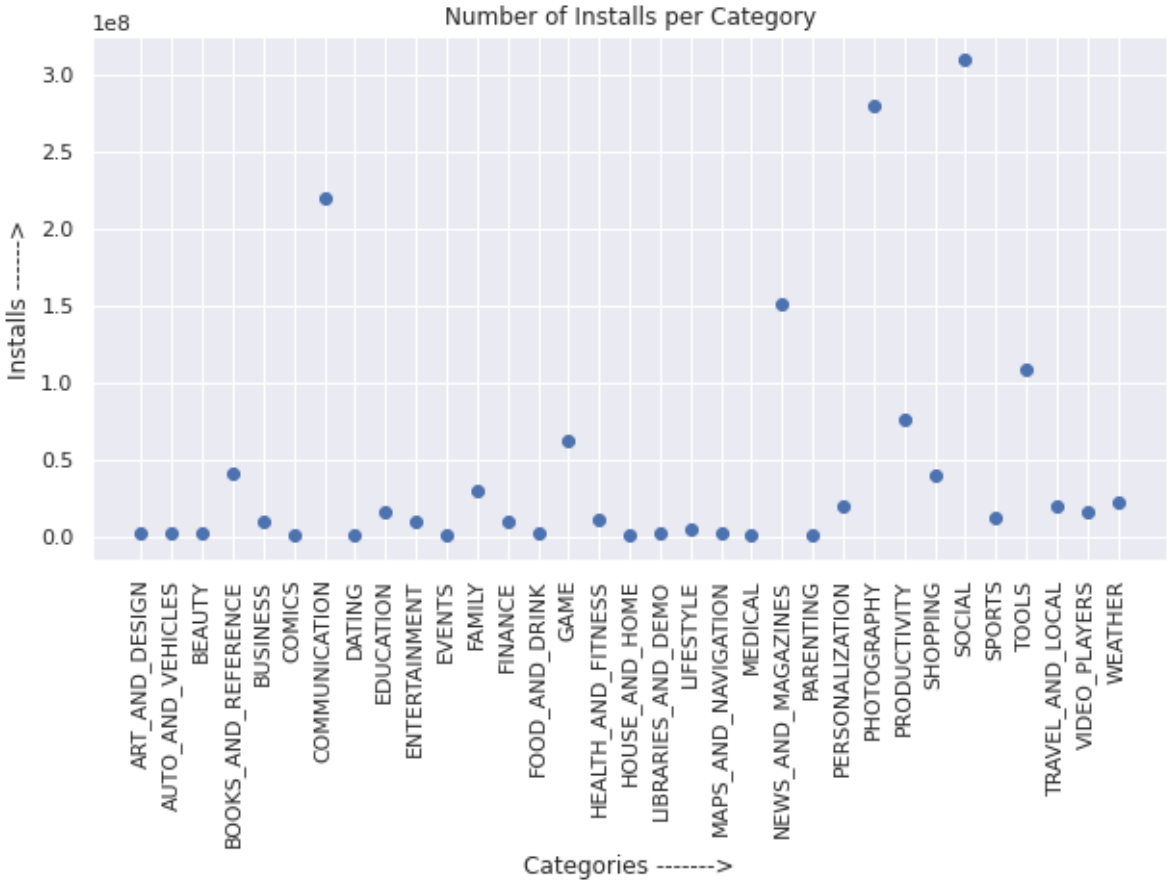
  World cloud is a data visuilization technique use for representing textdata in which the size of each word indicate its frequency importance.

- Senitment Polarity

  The polarity of a sentiment measure how negative or positive the content is in the data that we have , the polarity ranges from -1 (mostnegative) to +1(most positive).

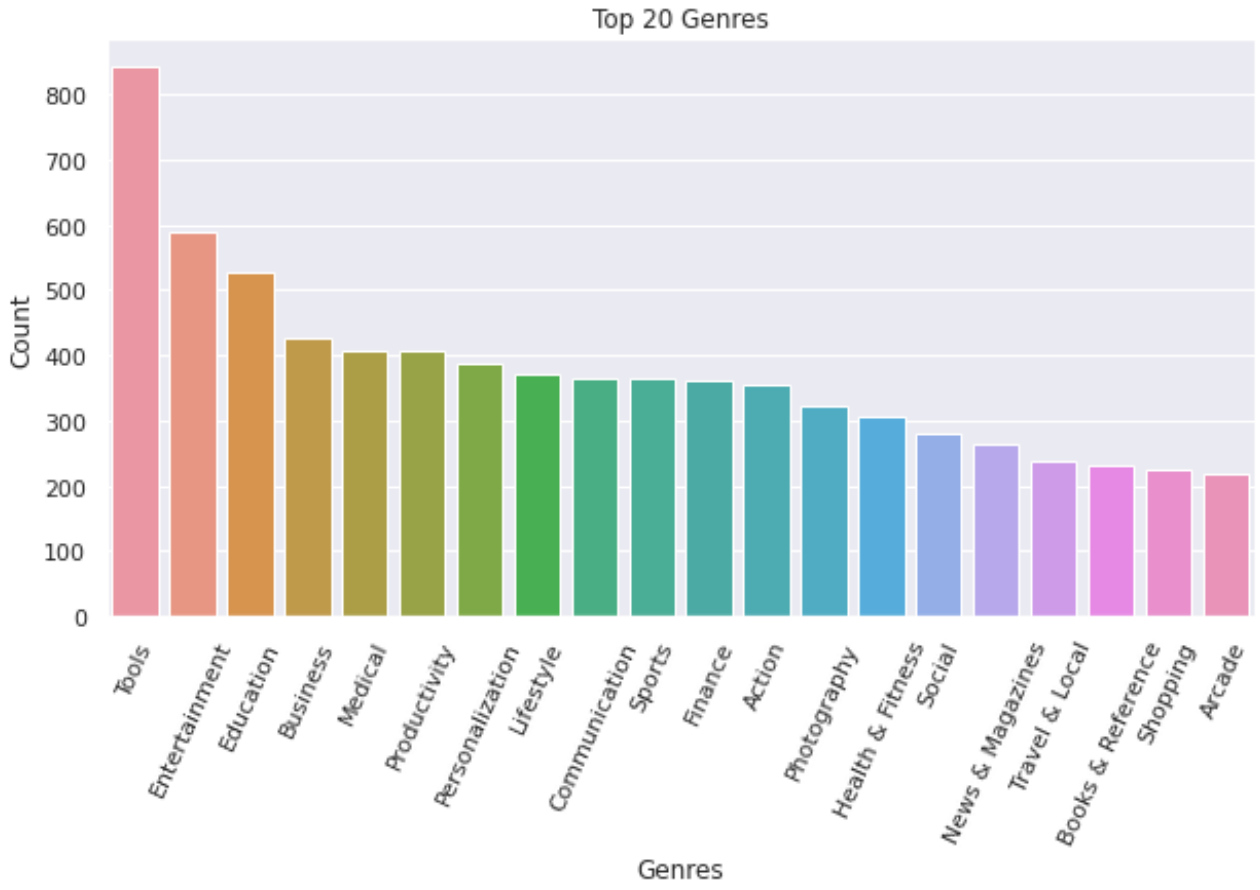
Number of Installs per Category:

As we can see from the above plots: Maximum number of apps present in google play store comes under Tools, social, and tools Genres but as per the installation and requirement in the market plot, scenario is not the same. Maximum installed apps come under social and Pathography Genres. And also maximum number of reviews comes underpin social genres



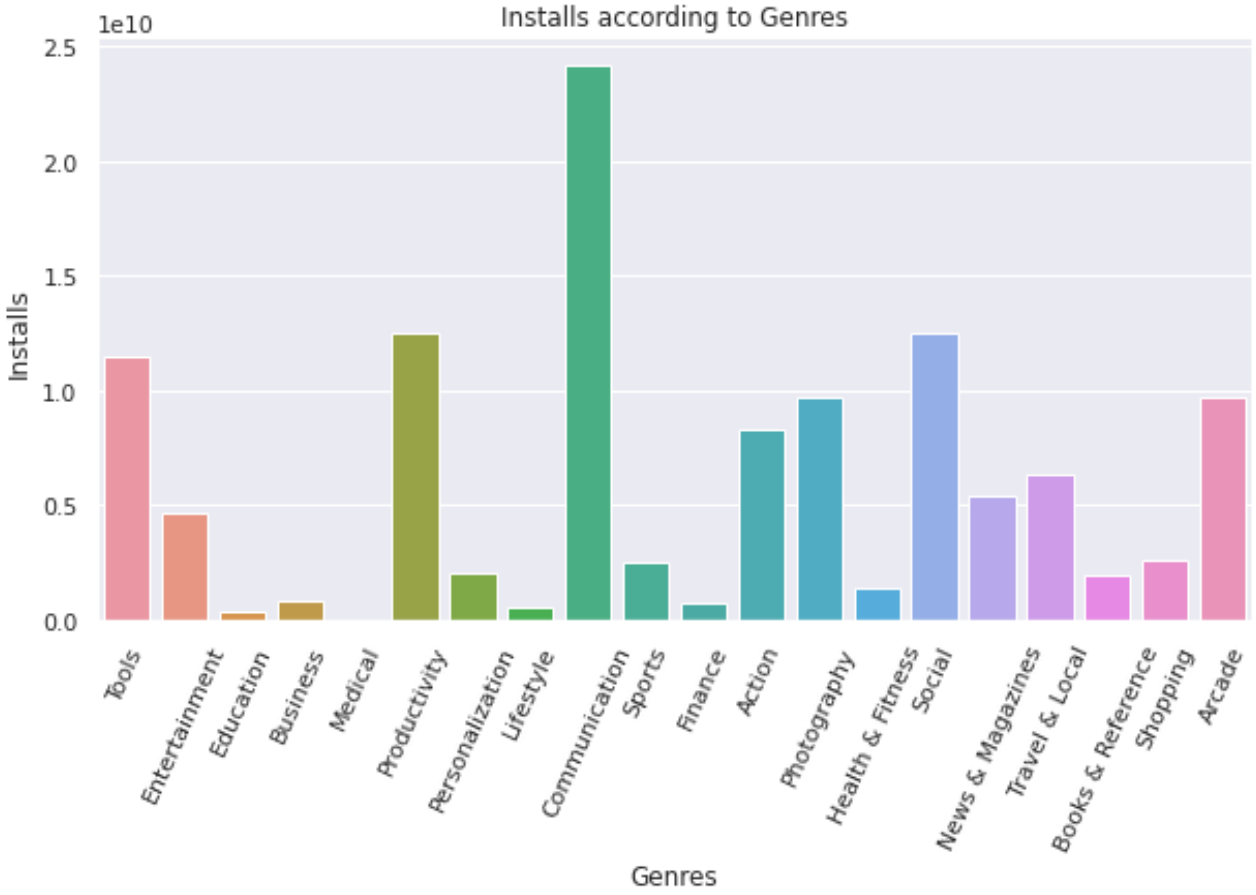
What are the top 20 apps present in the google play store as per their Genres?

As we can see from the above plots: Maximum number of apps present in google play store comes under Tools, Entertainment and Education Genres but as per the installation and requirement in the market plot, scenario is not the same. Maximum installed apps comes under Communication, Tools and Productivity Genres.



Which are the Genres that are getting installed the most in top 20 Genres?

As we can see from the above two plots: Maximum number of apps present in google play store comes under Communication, Social, Productivity and Tools, Genres but as per the installation and requirement in the market plot, scenario is not the same. Maximum installed apps comes under Communication, Tools and Productivity Genres

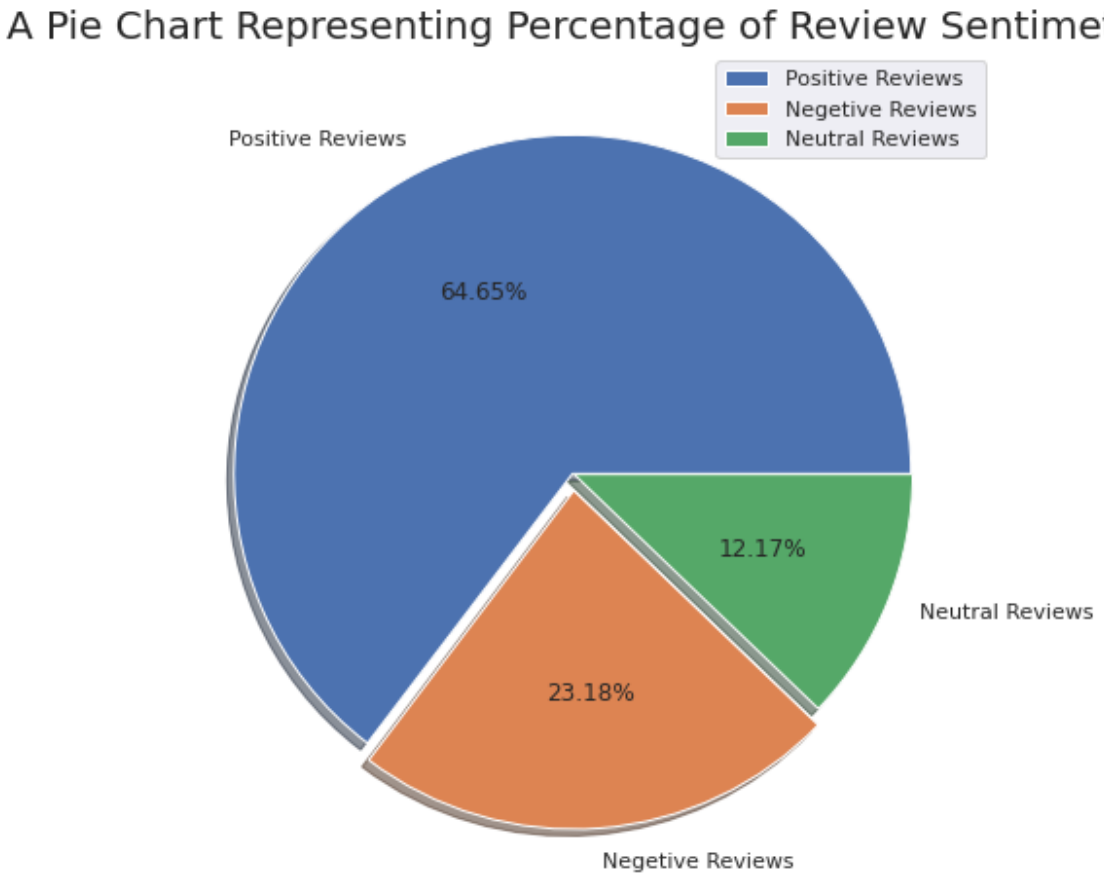


Overall percentage of review sentiment

Most of the sentiments reviews given by the user are positive with 64.65%

But also there is a negative sentiment percentage of 23.18%

This means app developers needs to convert more negative sentiments to neutral o r positive sentiments with their hard work



CONCLUDING STATEMENT :

The dataset contains possibilities to deliver insights to understand customerdemands better and thus help developers to popularize the product. Dataset can also be used to look whether the original ratings of the app matches thepredicted rating to know whether the app is performing better or worse compared to other apps on the Play Store.

- Category family and genre tools are in large in numbers . But interestingly category Education and genres ‘Board: pretend play’ and ‘comics: creativity both get best average rating in play store.
- App rating is directly proportional with the recent update. From this we can be sure that with the latest adaptation the reviews are giving better rating
- Most of the object on sentiment subjectivity lies high in the range 0.4 to 0.7 .it means people give review after some experience.
- Most of the sentiments reviews given by the user are positive with 64.65%
- But also there is a negative sentiment percentage of23.18%.This means app developers needs t o convert more negative sentiments to neutral or positive sentiments with their hard work.
- It can be concluded that the number of free applications installed by the user are high when compared with the paid ones.
- it can be concluded that Maximum installed apps comes under Communication, Tools and Productivity Genres.