

# Capstone Project-1 Submission

## Instructions:

- i) Please fill in all the required information.
- ii) Avoid grammatical errors.

### Team Member's Name, Email and Contribution:

1. Name: - Md Asad Alam

Email ID:- [mdasadalam354@gmail.com](mailto:mdasadalam354@gmail.com)

- Contributed In notebook helped with Google diver data connectivity and data cleaning, data manipulation, and in EDA Visualization
- Contributed for the contents of PPT.
- Contributed in Technical Documentation in content of problem statement goal of project and steps involved.
- Solved following questions: What percentage of applications are free and paid, Count of apps in each category, Average Rating of Free and paid apps, Comparing no. of Installs and no. of apps available in Play Store by its Content Rating.

2. Name: - Ejaz Alam

Email ID: - [ejazalam9006@gmail.com](mailto:ejazalam9006@gmail.com)

- Contributed in notebook for data cleaning, data manipulation, and in EDA Visualization and finalizing the conclusion.
- Contributed in PPT by making sure all the points to be covered.
- Contributed in Technical Documentation in content of problem statement goal of project and steps involved.
- Solved the following questions: Categories of apps that are getting installed the most, How does size impact the number of installs of any application, Top Revenue generated by Paid apps depending on its category.

3. Name: - Pranjal Jha

Email ID:- [sujeetkumarjha37@gmail.com](mailto:sujeetkumarjha37@gmail.com)

- Contributed In notebook helped with Google diver data connectivity and data cleaning, data manipulation, and in EDA Visualization and recording presentation.
- Contributed for the contents of Technical Documentation.
- Contributed in PPT in content of problem statement goal of project and steps involved.
- Solved following questions: Drawing Correlation Heatmap, Distribution of type of reviews in the dataset, Analyzing Sentiment Polarity and Sentiment Subjectivity.

Please paste the GitHub Repo link.

Asad Github Link: - [https://github.com/asadalam1/play\\_store\\_app\\_analysis](https://github.com/asadalam1/play_store_app_analysis)

Ejaz Github Link: - <https://github.com/EjazAlam9006/play-store-app-reveiw-analysis>

Pranjal Github Link: - [https://github.com/pranjaljha25/play\\_store\\_data\\_analysi-EDA-](https://github.com/pranjaljha25/play_store_data_analysi-EDA-)

Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)

Data science can be summarized into five steps: capture, maintain process, analyze, and communicate. The analysis of Google Play Store application aided to build most reliable and more interactive applications. This would be very useful for app developers to build an application focused on certain discussed category in this analysis. This analysis will help in building the application with precise and accurate objectives.

In the initial phase, we focused more on the problem statements and data cleaning, in order to ensure that we give them the best results out of our analysis. Our major challenge was data cleaning, In Data Cleaning, we have performed few steps to ensure the data quality such as removing NaN values. During the Data Cleaning step we found that 13.60% of reviews were NaN values, and even after merging both the data frames, we could not infer much in order to fill them. Thus, we had to drop them.

With the cleaned data, we have performed Exploratory Data Analysis to understand our dataset like number of installations for each category We explore the correlation between the size of the app and the version of Android on the number of installs and so on.

Our motive in whole project was to analyze the data and find out main components that affect users' decision to download app. After completion of analysis I concluded that user prefer more of free apps. Most of the apps present in play store are of size less than 20MB and user prefer to download apps which consume less memory.

It was found that Most of the apps that are present on the Google Play Store have rating in between 4 and 5.

We found most popular category of apps on two basis - Number of Installs and Number of reviews. Games and Communication wins in former criteria whereas Games wins in later criteria as well.

In the problem statement we are given with 2 datasets i.e. play store and User review data set in the user review dataset it was observed that User Reviews had 42% of NaN values.

Most of the reviews are of Positive Sentiment, while Negative and Neutral have low number of reviews. 8.Sentiment Polarity / Sentiment Subjectivity

Collection of reviews shows a wide range of subjectivity and most of the reviews fall in  $[-0.50, 0.75]$  polarity scale implying that the extremely negative or positive sentiments are significantly low. Most of the reviews show a mid-range of negative and positive sentiments.

Sentiment subjectivity is not always proportional to sentiment polarity but in maximum number of case, shows a proportional behavior, when variance is too high or low.

Sentiment Polarity is not highly correlated with Sentiment Subjectivity.

The dataset contains immense possibilities to improve business values and have a positive impact. It is not limited to the problem taken into consideration for this project. Many other interesting possibilities can be explored using this dataset.

From the results and process we have implemented, we can conclude that we have achieved this group project objective which is analyzing the Google Play Store apps and determine trends of the Google Play Store and both of our research questions.