Apple Appstore vs Google Play Store

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Overview

A marketing consultancy firm's client is a company that designs operating systems, and they want to build a major apps store into their user interface. Hence, they want to know whether Google Play apps have higher reviews on average than Apple Store apps (or vice versa) , as they're intending to strike a deal with just one of these companies.

Did Apple Store apps receive better reviews than Google Play apps?

Project Stages - Data Loading

- Loaded data from Kaggle of Apple Appstore information from csv file
- Loaded data from Kaggle of Google Playstore information from csv file
- Considered only the important columns such as category, rating, reviews, price from both the datasets

Apple DS

prime_genre	user_rating	rating_count_tot	price
Games	4.5	65831	0.00
Photo & Video	4.5	4818	0.00
Games	4.5	40552	1.99
Games	4.0	172	0.00
Games	4.0	87	0.00

Google DS

Category	Rating	Reviews	Price
COMICS	3.4	291	0
FINANCE	1.0	3	0
MEDICAL	3.9	6266	0
FAMILY	4.4	91171	0
PARENTING	NaN	34	0

Project Stages - Data Transformation

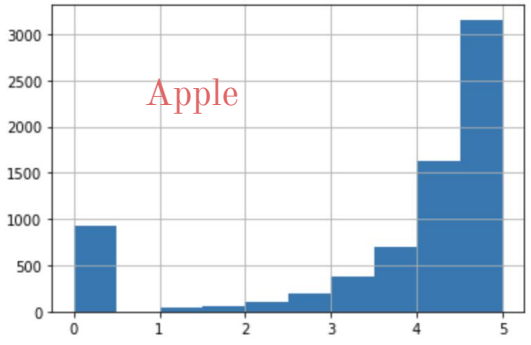
- Changed the data type of Reviews from string to integer , cleaned the price column and updated the datatype as float
- Added the new column called platform for Apple and Google dataset
- Renamed the Apple DS and merged the both datasets
- Removed the data having Null values and data with no reviews
- Compared the mean, count and std of both datasets

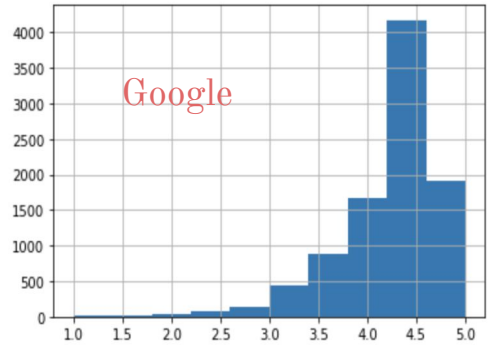
platform	apple	google
count	6268.000000	9367.000000
mean	4.049697	4.193338
std	0.726943	0.537431
min	1.000000	1.000000
25%	4.000000	4.000000
50%	4.500000	4.300000
75%	4.500000	4.500000
max	5.000000	19.000000

Insights - Data Distribution

Observed Difference between Rating is **0.14206**

Observed Difference shows there is no big difference between Apple and Google Apps ratings





Modeling

Hypothesis formulation

Our **Null hypothesis** is: The observed difference in the mean rating of Apple Store and Google Play apps is due to chance (and thus not due to the platform).

the **Alternate hypothesis**: The observed difference in the average ratings of apple and google users is not due to chance (and is actually due to platform)

Considered **significance level** of 0.05.

NormalTest:

Normaltest of both Apple and Google DS has p-valve $<$ significance_level, hence this proves both the **datasets are not normally distributed.**

Since data is not normally distributed, I continued with Permutation test (Non-parametric test)

Modeling

Permutation Test

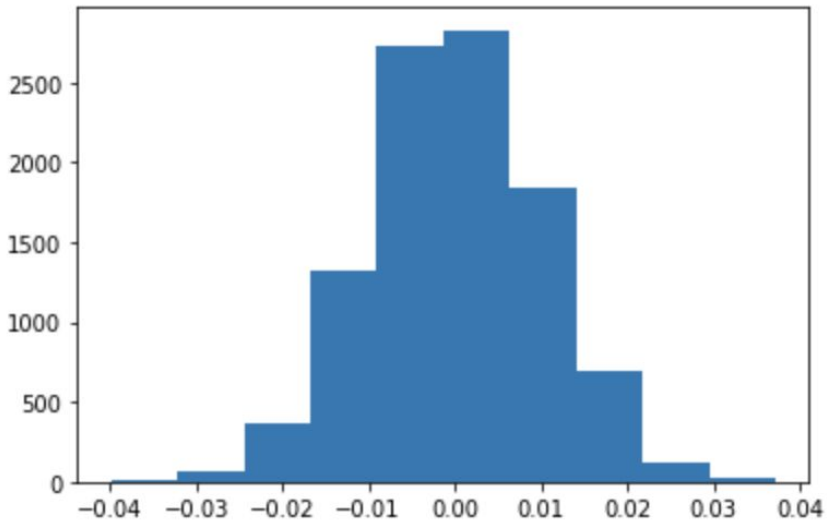
Run the permutation of Ratings column of both Datasets

No of Permutations tried : 10,000

Distribution of difference for the permutations between mean ratings of Apple and Google Datasets

It ranges between -0.04 and 0.04

Distribution of 10K Permutation Difference



Conclusion

Observed Difference between rating is **0.14206**

Range of mean difference for permutations is between **-0.010 and 0.010**

- Since Observed difference is outside the range of permutation difference, we can conclude ratings on Apple Appstore and Google Playstore have an impact on the platform
- Based on Observed difference, Google Playstore apps receive better ratings than Apple Store apps