Initial Overview Analysis

- The dataset has **48293** data points **12** features
- Out of 12 features, 6 are **numerical** , 5 are **categorical**, 1 is **date-time** type
- Data taken between **6th September** 2020 and **12th September** 2020
- There are **8 %** of NaN (null) data in " Ad Group " feature
- Since these rows had no record of collecting any revenue, we are dropping these records
- There were a few duplicate rows which also had no Revenue record. Dropped them too
- We have a record of **116** unique Apps in total
- We are running **188** unique Ad Groups in total for these Apps

Further Analysis:

- The revenue of an app is related with the Ad group shown whenever there is an Ad request inside an App.
- From the week's data, we saw few Apps which generated a fair deal of Revenue, while others did not make much.
- Now we are going to consider only those revenue generating Apps and Ad groups.
- We will consider only those which generated any amount of revenue in total in that week as Revenue generating Ad Group or a Revenue generating App.
- Out of 116 apps, only 45 apps which made any kind of Revenue in that week.
- Out of 188 Ad Groups there are 103 Apps which made any revenue.

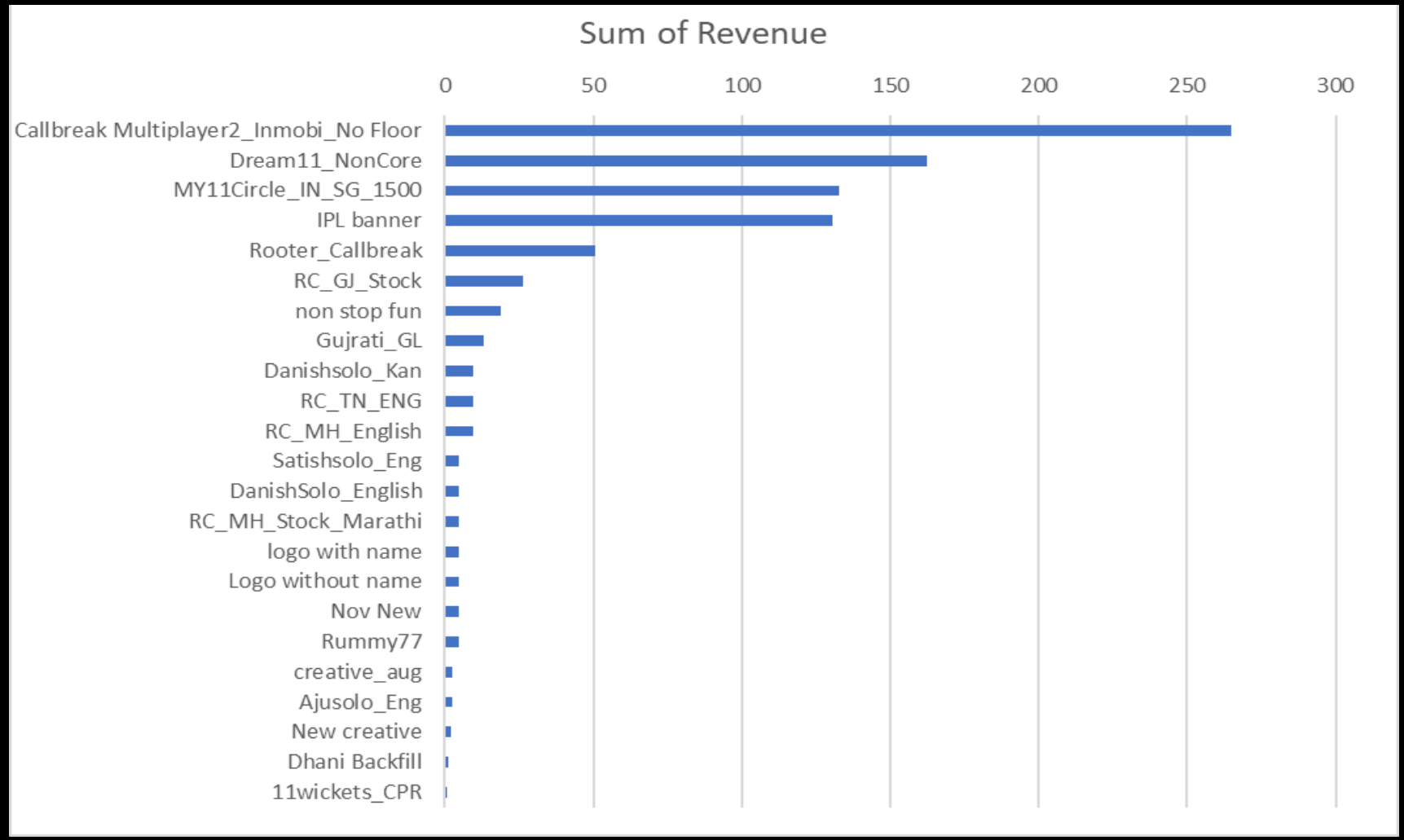
Problem Statement: How would you increase the overall revenue for an app?

- We saw for any App that we run multiple Ad Groups whenever there is any Ad request by the system and an random Ad Group is shown.
- Interesting part is not all the Ad Groups contribute towards Revenue generation in a particular App. There are many Ad Groups which have made less impression and less 1st and 2nd Click as a result have not made very less almost zero revenue.
- But there are many Ad Groups which have generated less revenue in spite of having fair amount of 1st and 2nd Clicks.
- We can stop running those Ad Groups and focus only on the revenue generating Ad Groups. Because the non-revenue generating Ad groups are kind of eating up the impression space available to us and creating opportunity loss..
- And this favorable Ad Groups are specific to different Apps i.e. different Apps have different revenue generating Ad Groups.
- As a rule of thumb, we can run the top 5-10 revenue generating Ad Groups for any particular App to increase revenue

Lets take the App “Callbreak Multiplyer” as an example which made Revenue of 869$ and look deep into it.

There are 35 different Ad Groups which made Impressions whenever there was an Ad Request

Out of them only 23 Ad Groups generated Revenue.



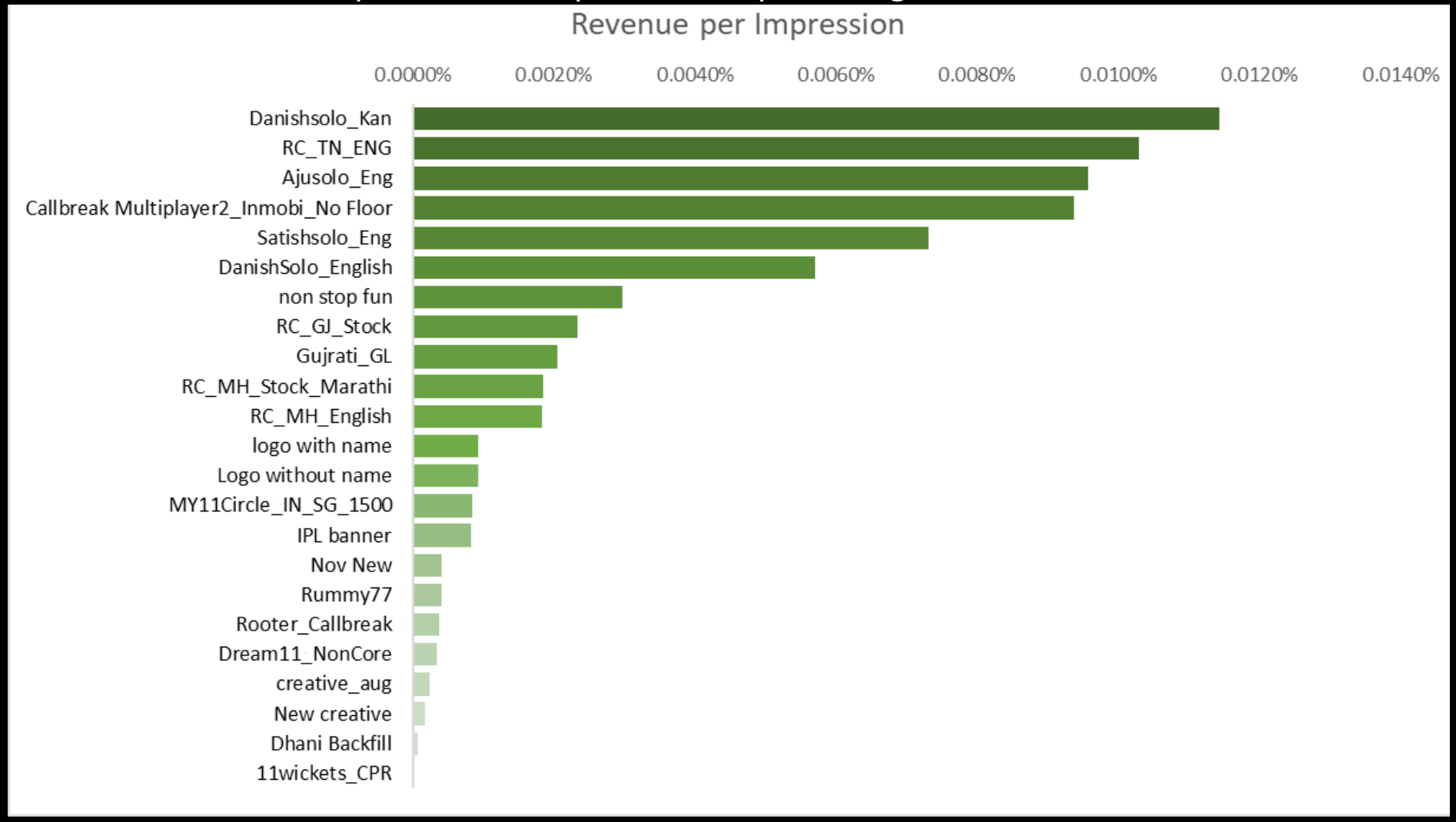
Here we can clearly see the majority of the revenue is due to the top 5 Ad Groups.

We can run these top 5-10 Ad groups only to increase more revenue for an App.

Another tricky solution:

Further analysis shows there are few Ad Groups where the total revenue is low but the Revenue/Impression ratio is high.

These are the Ad Groups which have potential to perform good and it is advised to run these ads with more frequency.



e.g. Danishsolo_Kan has a high Revenue per Impression but not huge Revenue collection. Maybe they will help bringing more revenue if they are run more frequently.

Also we can see few Ad Groups like " Callbreak Multiplayer2_Inmobi_No Floor " having both high gross revenue and revenue per impressions.

Problem Statement:

Are there any discrepancies in the data set shared with you? What are the possible reasons for such mismatch?

- There are few data points where the Render rate is more than 100 % which is quite illogical. As it means the ad rendered on the screen making an Impression more times than there was an Ad Response.

  Possible Reason Might be an error of the system while detecting an Impression or Ad Requests.

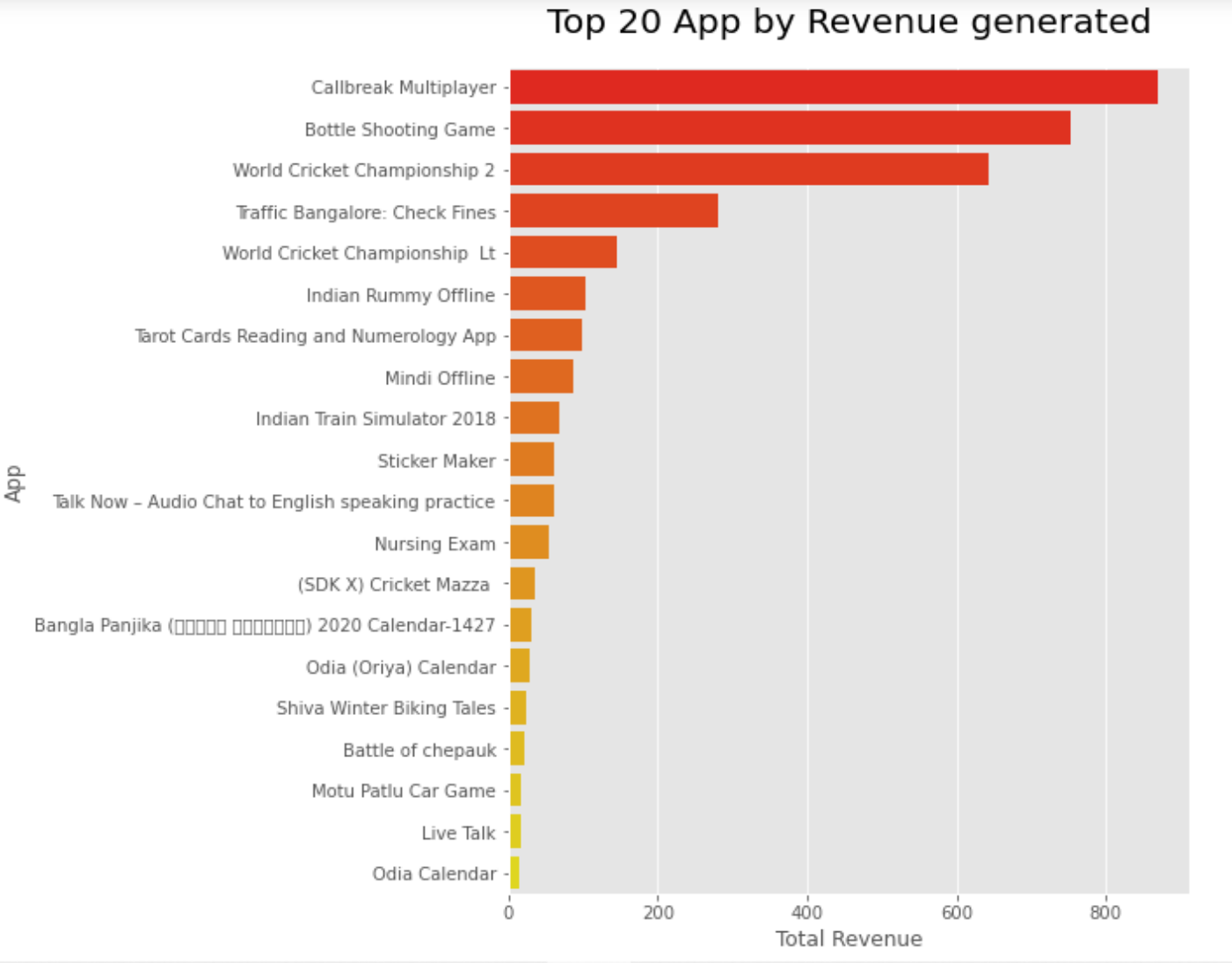
- Another strange discrepancy is there are few Ad Groups which are running within revenue generating App and there is no revenue generated inspite of having some big numbers on Impressions and 1st/2nd Clicks.

  This may be due to the fact that there is some problems regarding monetization for those Ad Groups

- There are 3993 rows missing values (NaN) in Ad Group.
- Few rows are exactly duplicates in the data set.
- In State column there is an entry of “12096464” in 348 rows.

Problem Statement:

If you had a classification mechanism, which apps would you classify as Tier 1 or Important category for GG? Explain your reasoning.



The Tier 1 apps would be the ones which made more total revenue than the other Apps.

As they are making revenue, there is a chance that they will like to increase their revenue and grow even more. So that GG can optimize their Ad Running and create more opportunity.

Problem Statement :

Are there any ad groups which are causing an opportunity loss for the app? If yes, how would you mitigate it?

Ad Group	Revenue	Impressions
Dream11_NonCore	236.07	50103937
Cricket Mazza Banner (AdX)	0.00	48284847
MY11Circle_IN_SG_1500	271.80	18646537
IPL banner	260.04	18362860
Rooter_Callbreak	50.50	13399054
revshare	0.00	6992276
Gujrati_GL	105.20	4107075
Dream11	149.45	3376462
Callbreak Multiplayer2_Admob_L	0.00	3372215
11wickets_CPR	0.80	2941606
Callbreak Multiplayer2_Inmobi_No Floor	264.99	2828252
Dhani Backfill	1.64	2292015
Bottle Shooting Game_Admob_No Floor	75.73	2092351
Bottle Shooting Game_Admob_ML	350.40	2090511
WCC2_Admob_Excluding India	43.33	1899069
RC_MH_English	60.84	1806314
Rooter_Cricket	122.69	1771698
RC_GJ_Stock	36.82	1541527
Rummy77	4.62	1188567
New creative	2.64	1157612

In general there are a few ad groups which does not contribute towards making any kind of revenue but still taking up screen space whenever there is an Ad Requests i.e zero revenue but considerable high numbers of impressions.

As we can see Cricket Mazza Banner (Adx), revshare, Callbreak Multiplayer2_Admob_L, Dhani backfill are some of these ad Groups which are among the top 10 impressions generating but zero revenue

We should invesetigate if there is some internal error with recording monetization.

If there is no such error , we stop running them to mitigate the opportunity loss.