



CHURN ANALYSIS PROJECT

DOES FAILING A LEVEL INCREASE S THE RISK OF CHURN ?

AIM -

To find if failing in the level is the cause of the players to leaving the game .

OBJECTIVES -

- To find number of players failing and immediately quitting the game.
- But some players might have failed anytime in the last session , int the last stage or in the last level they played and quit the game. So, need to find players who failed at least once in the above times.
- To find number of players failing at least once in their last session played.
- To find number of players failing at least once in the last level / stage they played.
- Observe the levels in which players are mostly failing and quitting.
- Explore failing patterns by levels and days played.

METHODOLOGY

Exploratory data analysis

Performed initial exploration on players and level_progress dataset so as to discover patterns and relationships between data.

- Find the relationship of failing players on platform and system memory.
- Count the no. of players who never played the game.
- Calculate the daily new users.
- Calculate the mean DAU (daily active players).
- Calculate the ratio of fails on levels and their corresponding stage.
- Discovered the maximum levels most players played up to.
- Discovered the maximum days most players played the game.

Descriptive data analysis

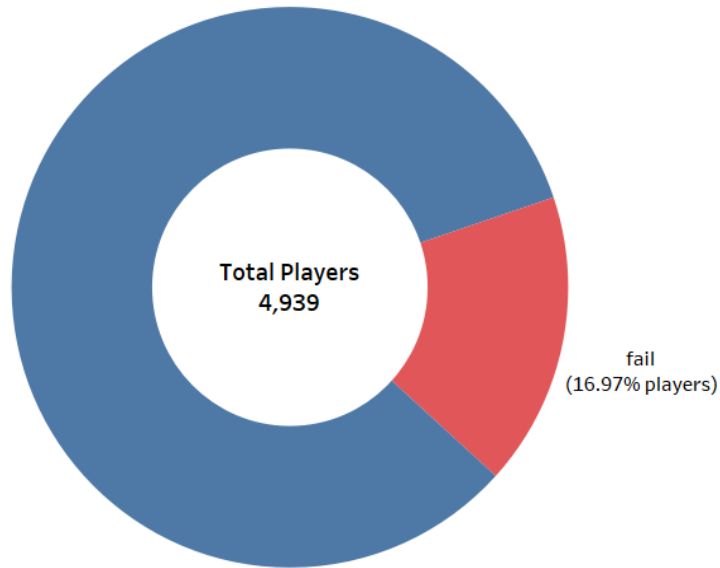
Quantitatively described the failing factors of the players who quit the game.

- Find number and percentage of players quitting the game who failed based on following factors -
 - Failed and quit immediately
 - Failed on last session and quit
 - Failed on last level and quit
 - Failed on last stage and quit
- Find the levels on which people were mostly failing and quitting.
- Find the number of attempts people are giving in their last stage played.

RESULTS

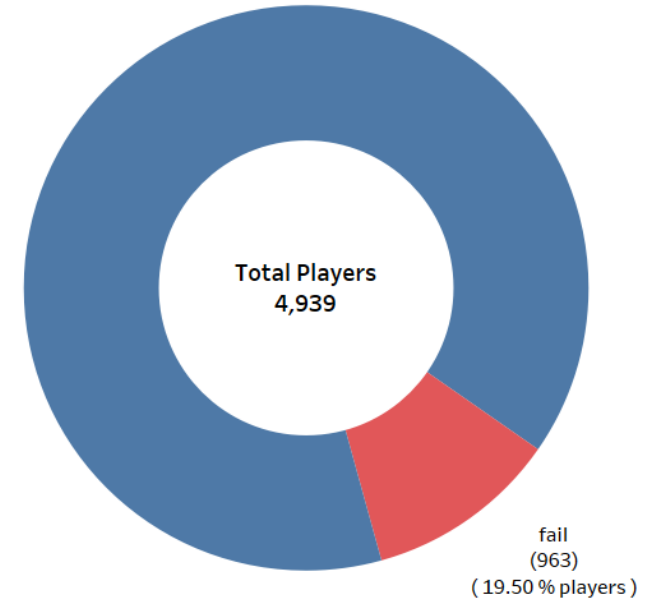
Failing and quitting of players -

1. On last event_datetime



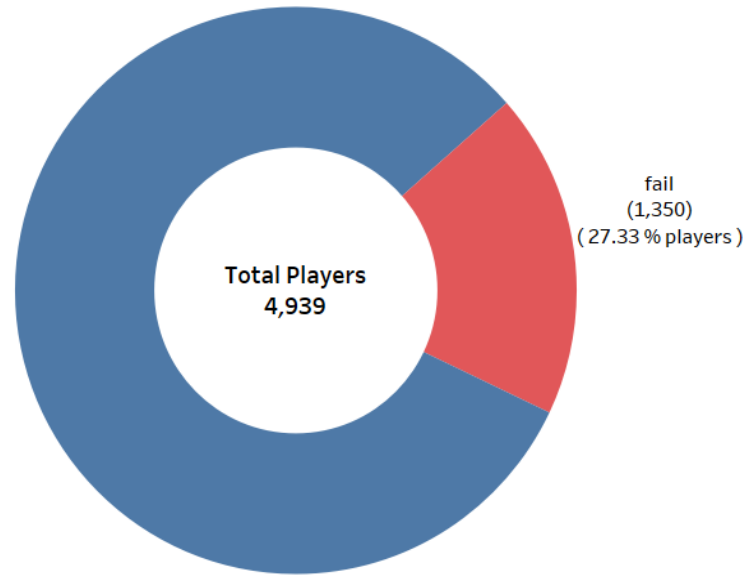
- 16.9% players quit the game immediately after failing
- But 83.1% people quit the game immediately without failing

2. On last session



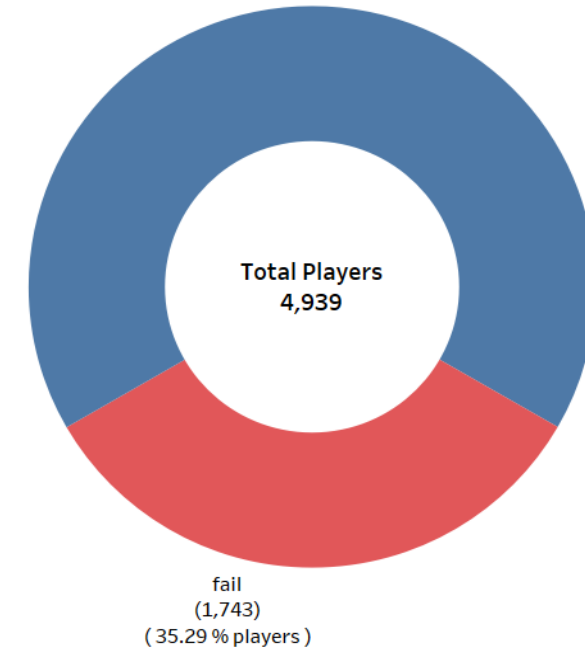
- 19.5% players quit the game immediately after failing
- But 80.5% people quit the game immediately without failing

3. On last stage



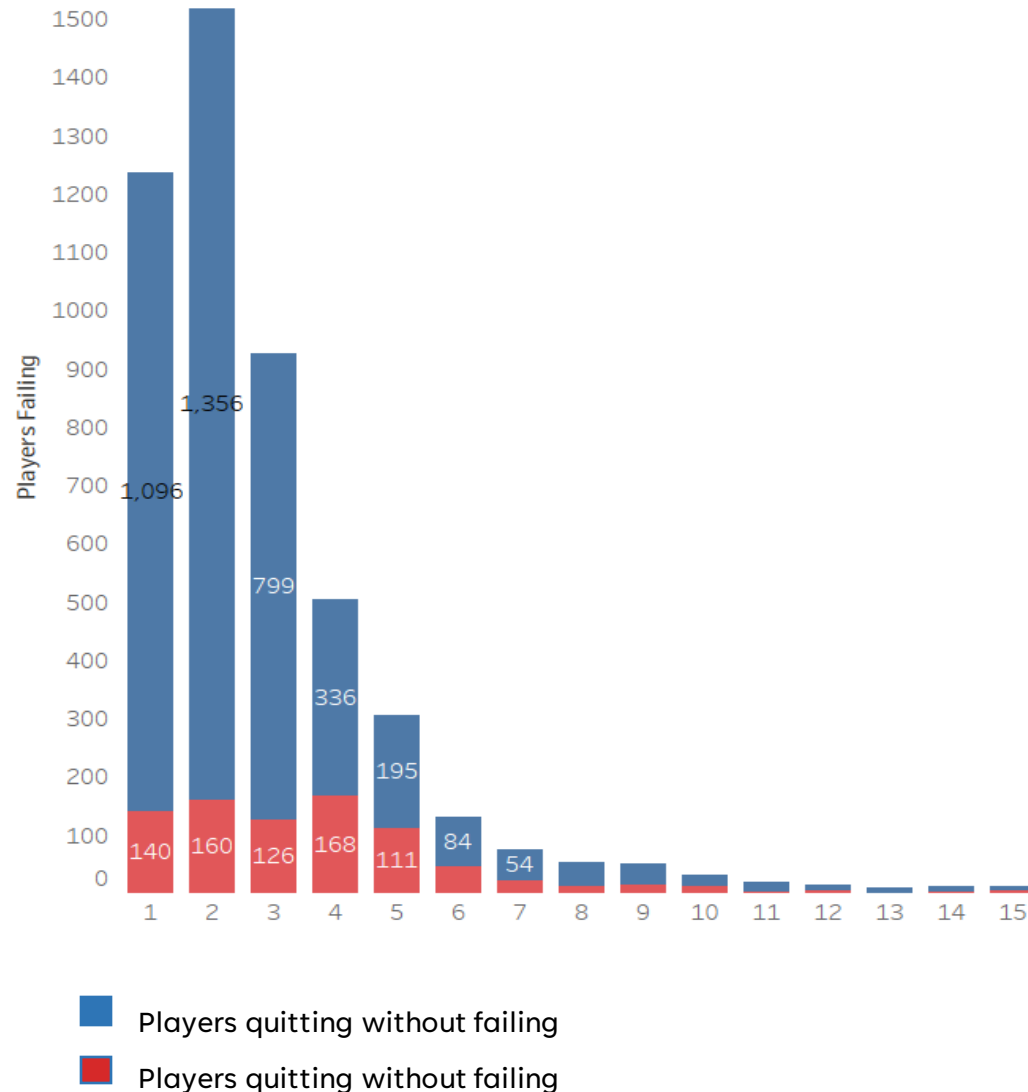
- 27.3% players quit the game immediately after failing
- But 72.6% people quit the game immediately without failing

4. On last level



- 35.2% players quit the game immediately after failing
- But 64.7% people quit the game immediately without failing

Number of Players quitting by levels -



- This split bar chart shows the number of players failing and quitting on which levels.
- Here with this bar chart we can also discover that % of players failing and quitting on 4th level increases among players who are playing level 4.
- Also we can see difference of players quitting without failing and players quitting without failing on particular level.

Failing ratio -

Level_no	Stage_no	Total_fails	Total_starts	Fails_ratio
1	1	996	6130	16.25 %
1	2	260	4873	5.34 %
2	1	539	4410	12.22 %
2	2	413	3715	11.12 %
2	3	291	3266	8.91 %
3	1	309	2645	11.68 %
3	2	287	2188	13.12 %
3	3	242	1851	13.07 %
4	1	491	1790	27.43 %
4	2	728	1695	42.95 %
4	3	404	1281	31.54 %
5	1	497	1188	41.84 %
5	2	343	998	34.37 %
5	3	304	907	33.52 %

No. of fails per levels -

Level no.	Total fails
4	1623
1	1256
2	1243
5	1144
3	838
6	498
7	279
8	255
9	175
11	145
10	125
14	73
12	59

- Here we can see that failing ratio increases after level 3, so risk of quitting after failing increases after level 3.

KEY RESULTS & TAKEAWAYS

- Number of players failed at least once and quit in their last game -
 - Failed and immediately quit – 16% (rest players quit without failing)
 - Failed at least once and quit on the last session they played – 19%
 - Failed at least once and quit on the last level stage they played – 27%
 - Failed at least once and quit on the last level they played – 34%
- Mean of above percentages is $(16+19+27+34)/4 = \underline{24}$
- So, most players (60% to 70%) quit the game without failing in the level.
- Also failing ratio increases a lot after level 3 as shown in the table in previous slide.
- Most players quit the game in 1st and 2nd levels where the failing ratio is quite low.
- Most players play the game for only 1 or 2 days maximum.

CONCLUSIONS

- So, with these results we can conclude that most players (60% to 70%) quit the game without failing a level
- Failing increase the risk of churn approximately by **24%** (mean of failing and quitting percentages of players in their last game). Rest players quit without failing.
- Failing and quitting varies differently according the levels
 - Quitting after a fail is quite low before 4th level.
 - Quitting after a fail is higher after 3rd level.
- So failing is not the significant factor for players leaving the game because most people leave the game within 1st or 2nd level.

FURTHER ANALYSIS

- We can discover the session time of users which can help to give some personalized updates to users
- We can observe the behavior of retained players to see patterns of players who keep playing the game.
- With these data we can further calculate the number of attempts on particular levels or its stage.
- We can calculate the average playtime of users in hours.
- If there were column related to the ads data along with the data given, we could get more insights of ads effects on churn or players behaviour.



THANK YOU

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