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# SOCIAL NETWORK ANALYSIS REPORT “AMBER HEARD”

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OVER 2020 IN TWITTER



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# Analysis Report

## About the Data

The data is about tweets made in 2020 in Twitter social public account of “Amber Heard”. It contains 621583 tweets explained by 7 features.

## After wrangling the data we have some estimations:

1. No. of all users in the data is 196251 made 612583 tweet in 2020.:

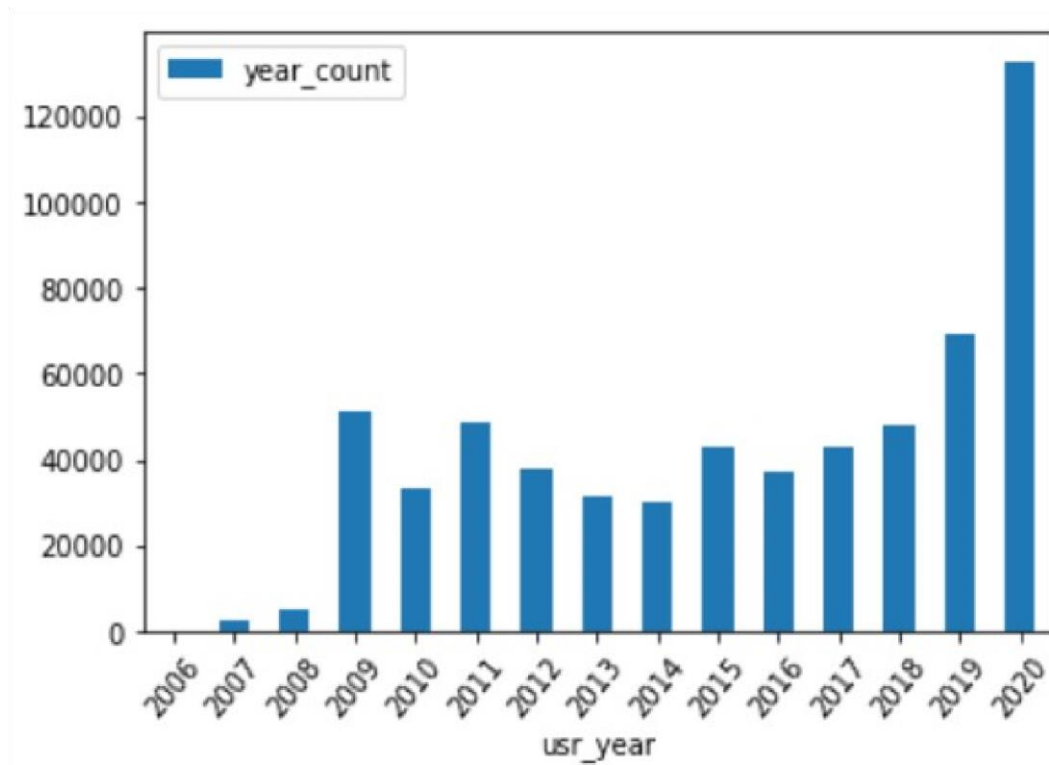
- 28391 users fresh created in 2020 (14.45% from the whole users) made 132711 (21.67% from all tweets).
- 5439 users(4.098% from users\_created\_2020) tweeted in the same day they created their account.
- (16.22%) of users\_created\_2020 tweeted within 14 days of account creation.
- The rest of users created in many years from 2006 to 2020 made 479872 tweet

Out[7]:

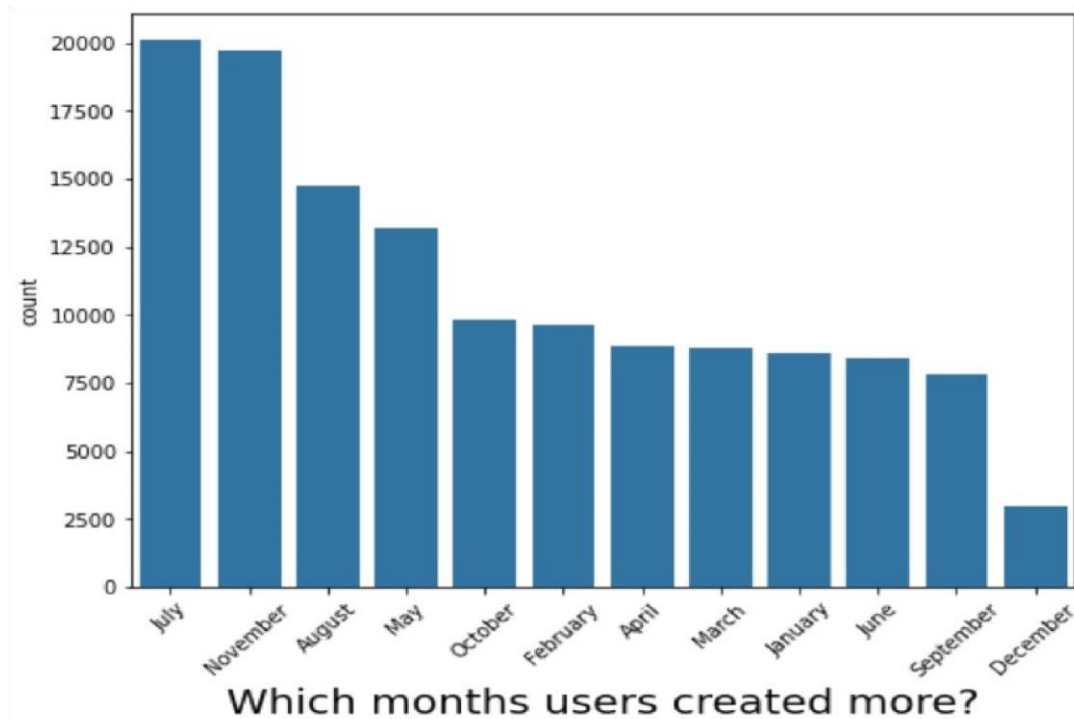
	id_str	created_at	full_text	user.id_str	user.screen_name	user.name	user.created_at	diff
0	1214659714698633223	2020-01-07 21:26:57	@jackshitnobody He is a great actor . And ambe...	3416958298	Kenman_RiderW	SpecSpiderKen	2015-08-12 03:54:29	1609 days 17:32:28
1	1214658467836956673	2020-01-07 21:22:00	@thekjohnston One of his other lawyers is now ...	1112756109981421568	SkLumos	Lumos	2019-04-01 16:38:25	281 days 04:43:35
2	1214657580837953536	2020-01-07 21:18:29	@taniaitabel Yes! The only time i thought he ...	132788590	HavenFaithc	h a v e n	2010-04-14 05:22:22	3555 days 15:56:07
3	1214654926342758400	2020-01-07 21:07:56	una vez vi una amber heard en un personaje de ...	2164011551	leadsoo	#9ToEternityWithEXO	2013-11-01 23:00:04	2257 days 22:07:52
4	1214649017851957249	2020-01-07 20:44:27	7. #EIPadrastro (Nelson McCormick, 2009)\n\nEs...	816110136	mrsparser666	Mrs. Parker 🐦	2012-09-10 21:58:09	2674 days 22:46:18
...	...	...	...	...	...	...	...	...
612578	1335460896550789121	2020-12-06 05:47:44	@Allure_magazine Please help sign, share & amp;...	1266712663679107075	Irina_Skywalker	Irina Skywalker	2020-05-30 12:47:40	189 days 17:00:04
612579	1335460475996237824	2020-12-06 05:46:03	i really want (as brutal as this may sound) th...	1295925179877474306	_isabella25_	isabella	2020-08-19 03:27:02	109 days 02:19:01
612580	1335460343460540417	2020-12-06 05:45:32	EVERYONE : Cancel Amber Heard domestic abuser!	1313880113864376320	Harleycosplay1	Harleycosplay	2020-10-07 16:33:47	59 days 13:11:45
612581	1335459902752317442	2020-12-06 05:43:47	#JusticeForJohnnyDepp \n\n#JohnnyDeppIsInnocent ...	2925598034	Pinkprincess027	Jeon Ji-hye	2014-12-10 12:17:42	2187 days 17:26:05
612582	1335459423788048384	2020-12-06 05:41:52	#JusticeForJohnnyDepp \n\nhttps://t.co/Q3GskvO1QM	105573068	stockyjulz	julie stockbridge	2010-01-16 19:43:51	3976 days 09:58:01

612583 rows × 8 columns

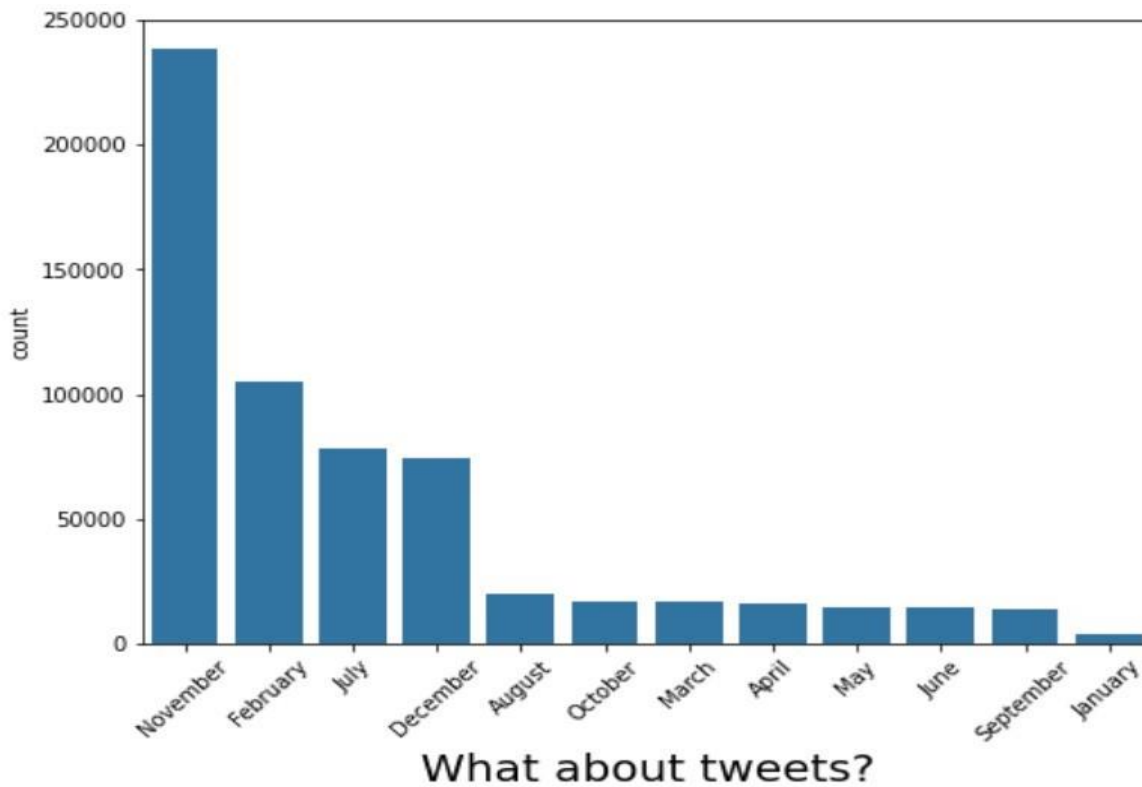
2. Here can explain more how the no. Of users created in 2020 in interesting.



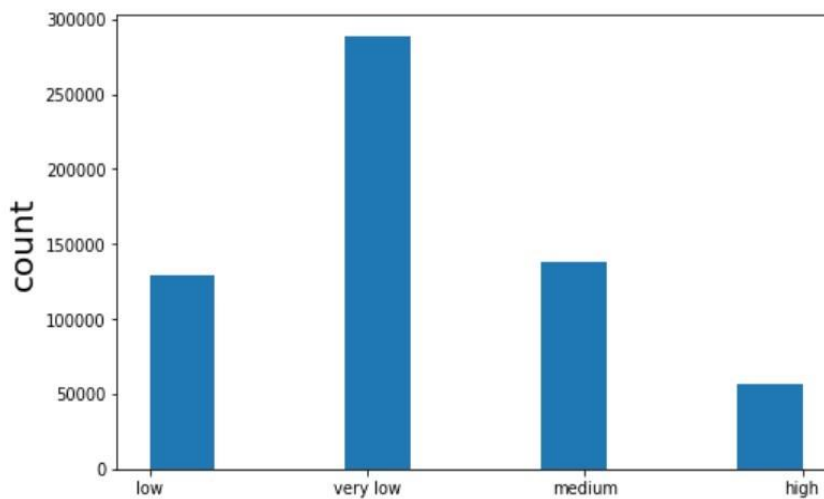
3. Many users created in certain months (mostly in Jul. ,Nov. Aug., may., oct., feb) in 2020 with interesting way.



5. By checking the tweets, found interesting insight top months of tweets were ( Nov., Feb., July.,Dec., Aug) so we have matching here with users creation

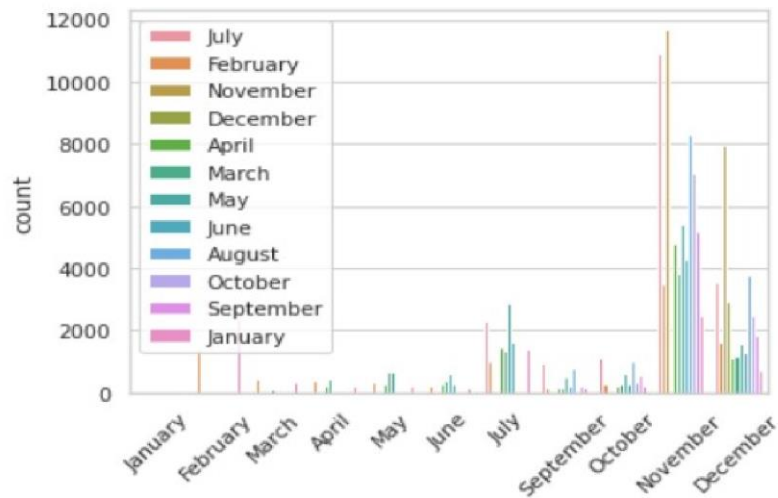


6. A very suspicious insight upcoming now, when making distribution for the data according to the time difference between creation of user and his tweet found that within users created in 2020 most of them created in the same days and others in few days.



What is the abnormality in days diff. between tweets and users created?

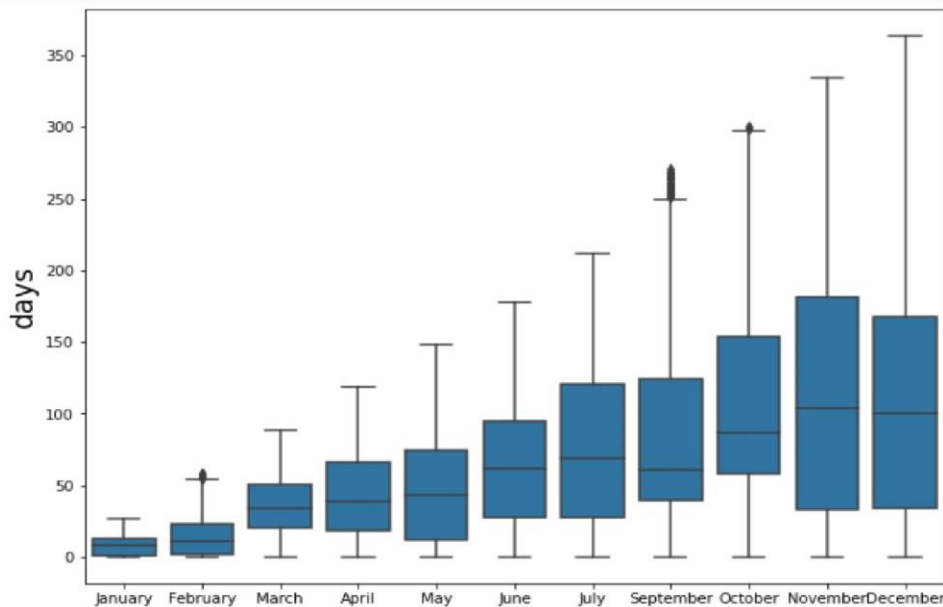
\*\* This wants to be mixed to see the relation between tweet\_month and users created in these months to figure out the most bulk months and make the relation more obvious



Relation between tweets and usrs according to months

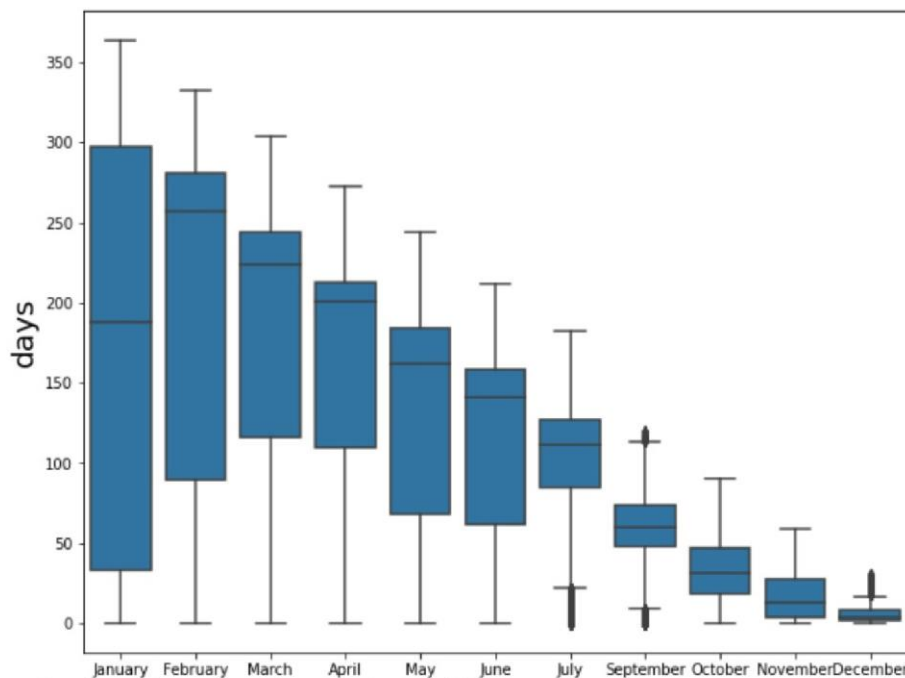
We can see the relation between the bulky tweet months and crowded user creation months(users created in 2020) .. they share the same months that have already the most trendy dates.  
There must be few events caused the activity for users in those specific months.

7. Also relating to the months of tweets in Jan., Feb. the days diff is less than one day more than other months and Mar., may., jul. the days diff is also in a very short period of time than rest of the months.



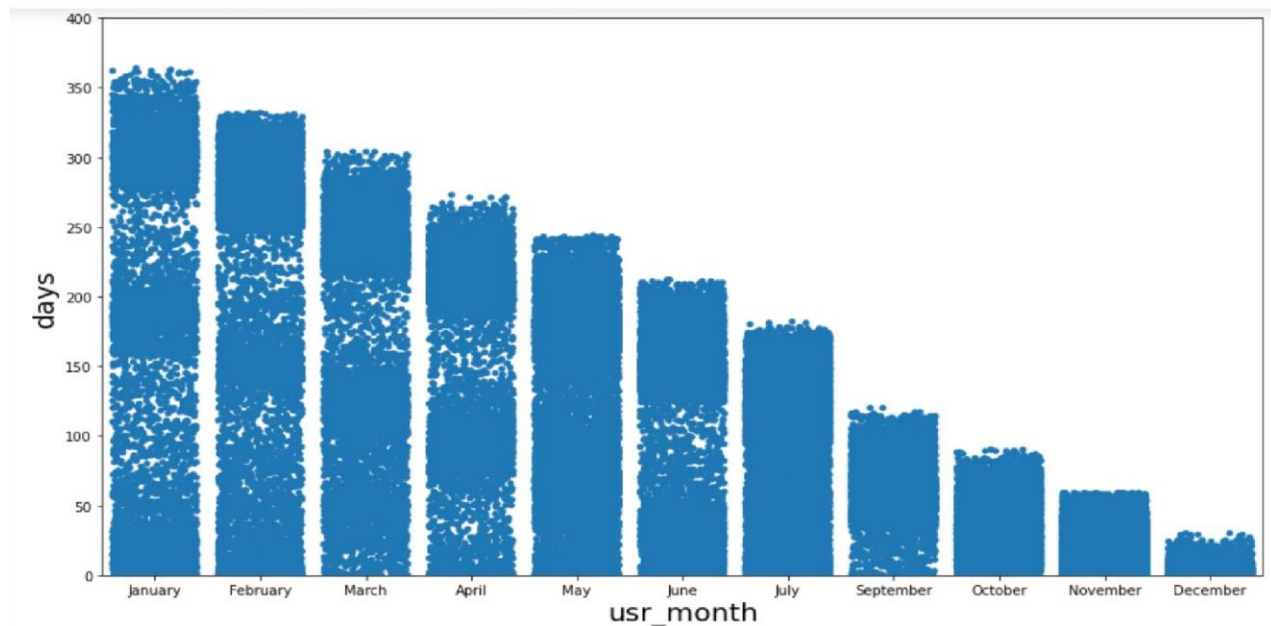
What is the ubnormality in days diff. between usrs created in short time?

8. According to user month of creation .. users created in jan. and feb. are the most users tweeted in a short time and for jul. and nov. and dec. not alot of tweets but they are the most tweeted in almost 1 to 20 days of creation.

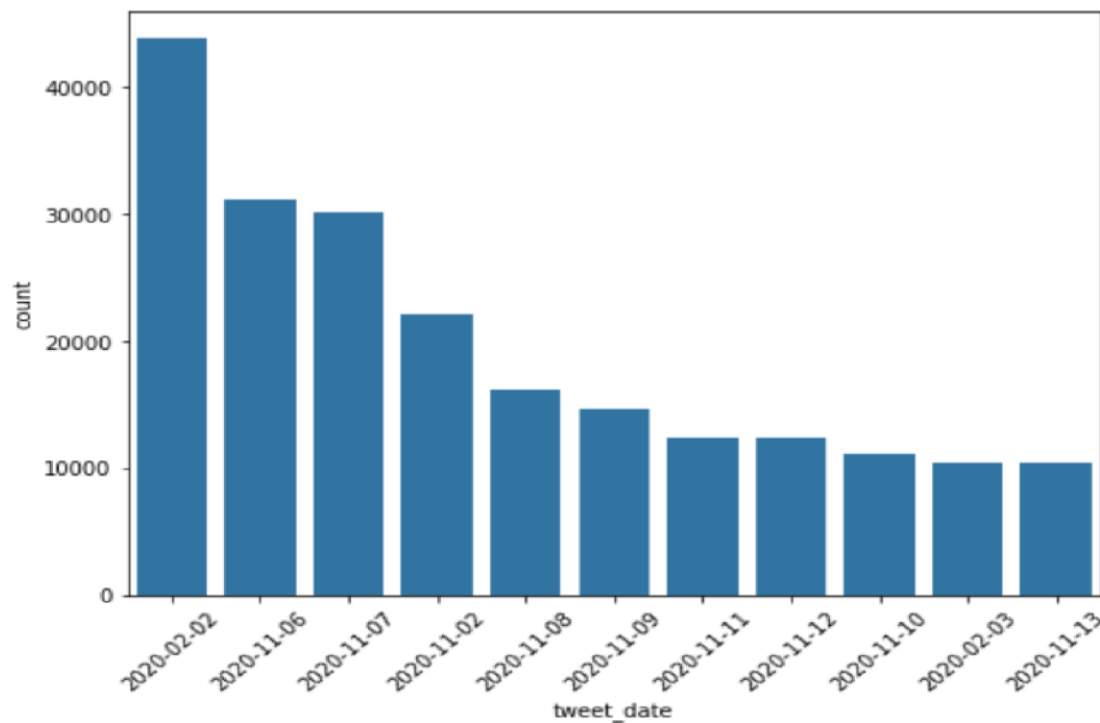


What is the ubnormality in days diff. between usrs created in short time?

9. Also the users created in 2020 had periods of activities that means many of them were getting active for a reason, According to Usrs created in jan have the most tweets but have cloudy regions as it appears .. first regions after they created then decreased their activity, then increased again between 150 - 200 days of creation ..etc, the same for the rest of months.

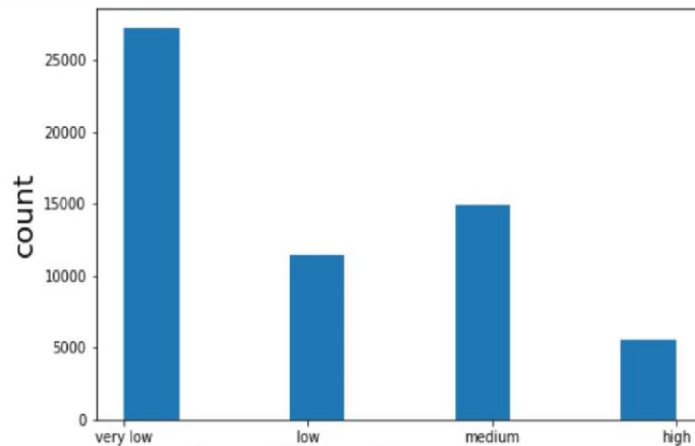


11. That made me look for further investigation gave a prospective point of view to the whole insights in each corner of the data, so I explored the tweet\_dates that have the highest no. Of tweets, then filtered them to the top trendy\_dates that have more than 10000 tweets, found that:

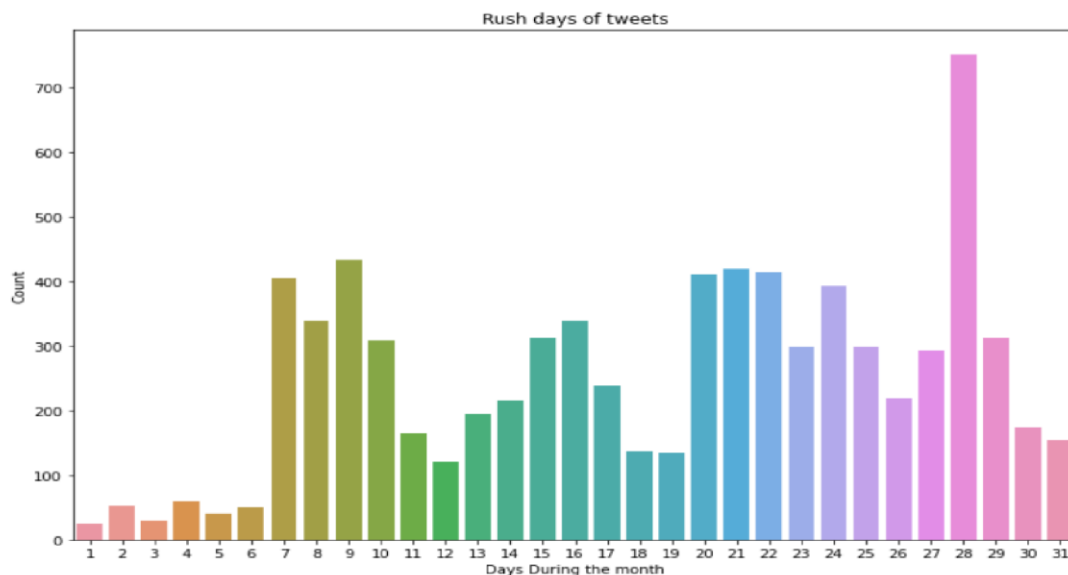


11\*. That made me explore each month to see the most frequent users tweeted on those dates. By investigating the July, found that tweets from fresh users are the more bulky in the month specially in trendy dates in July.

## July



What is the abnormality in days diff. for this month between tweets and usrs created?



In Jul. peaks are (7,8,9,10,16,20,21,22,24,28).

Found that Many tweets are from same user in the same day and also all are fresh users .. by checking the shape of whole tweets in jul/2020 (59113) .. only from (17596) user\_id the no. of tweet from fresh users in same day: (444\_ while, the total no. of tweet from 2020 users: (20091) and the no. of frequent fresh users (2020) : (2679)

## November

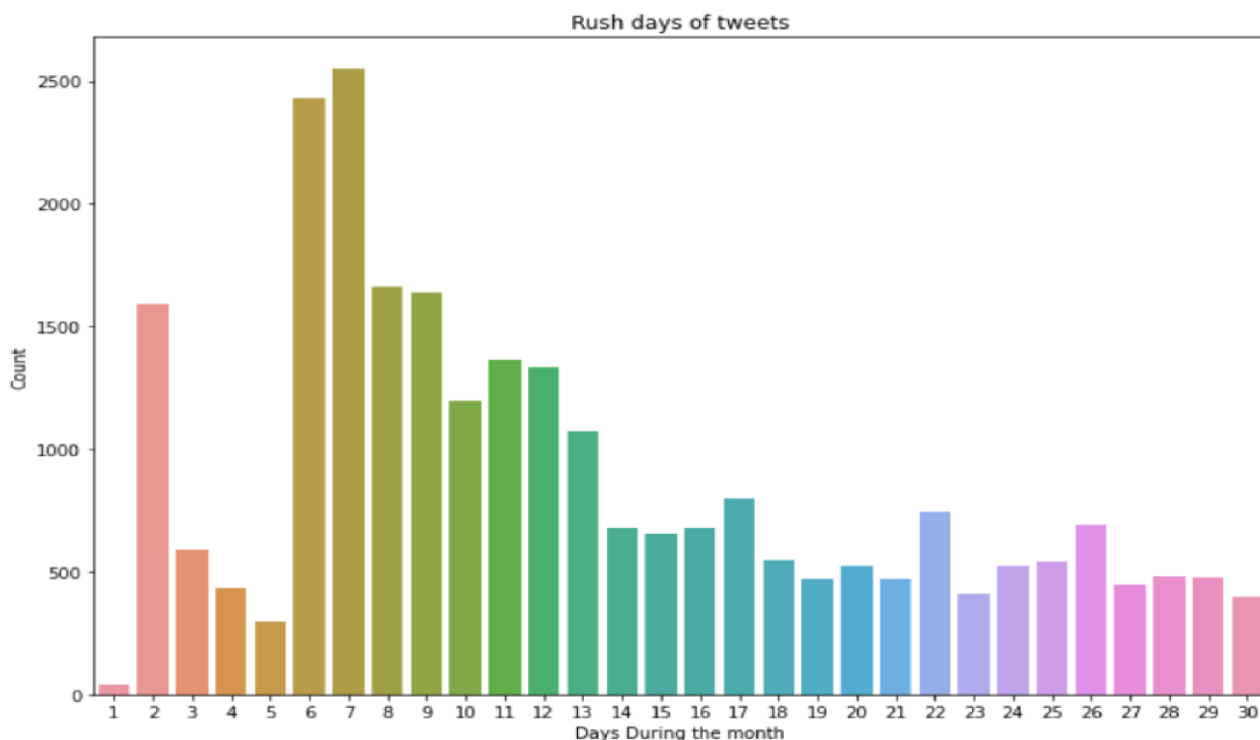
12. For November, found that many user\_ids fresh created and many were with the same user name with hastages and words like (justiceforjhonny)



🍷🍷 M.G. Justice For Johnny Depp🍷🍷Wald-Mignon🦋🌻🌸	3668
Manny👤	876
Raúl Sobas #JusticeForJohnnyDepp	859
Joanna Woodley	771
Nitawho WaldMignon 🧑🏠🔪🍷🛡️🔪🔪	699
...	1
Mrs. Snape 👤	1
blueming.	1
🇲🇩🇲🇩🇲🇩🇲🇩🇲🇩🇲🇩 #LLJ #LLJW	1
Floor Dobrev 🇲🇩	1
Alejandro Hernández	1
Name: user.name, Length: 14932, dtype: int64	

Also

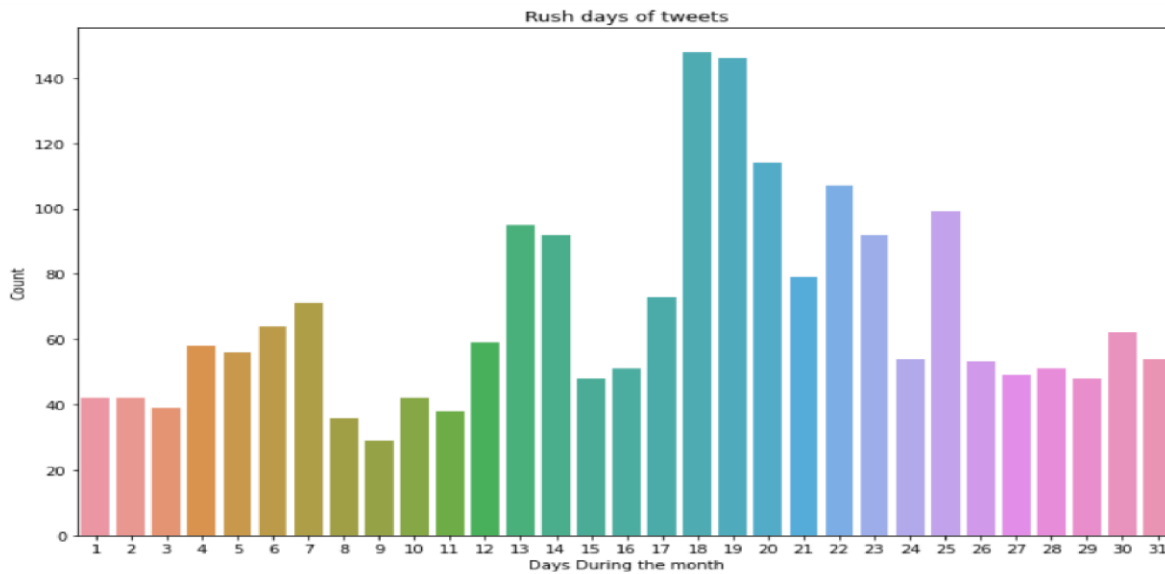
found that (61180 tweets) .. only (15569 users) while the no. of tweet from fresh users in same day: (2846) where the total no. of tweet from 2020 users: (19694) and no. of frequent fresh users (2020) : (2276) also theno. of all frequent users: (15562).



In Nov. peaks are (2,6,7,8,9,11,12).

### August

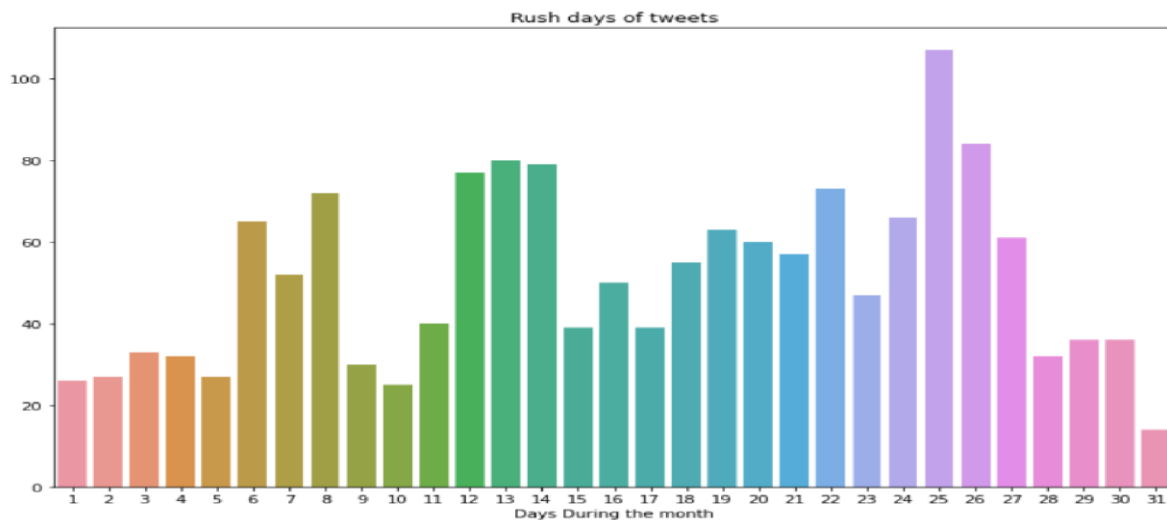
13. The same for August many User.names identical and many are fresh users. with interesting names, also (55289 tweets) .. only (16949 users), no. of tweet from fresh users in same day: (153). Total no. of tweet from 2020 users: (14738), no. of frequent fresh users (2020) : (2242), no. of all frequent users: (16949).



Aug. Peaks (7,13,14,18,19,20,23,25).

## May

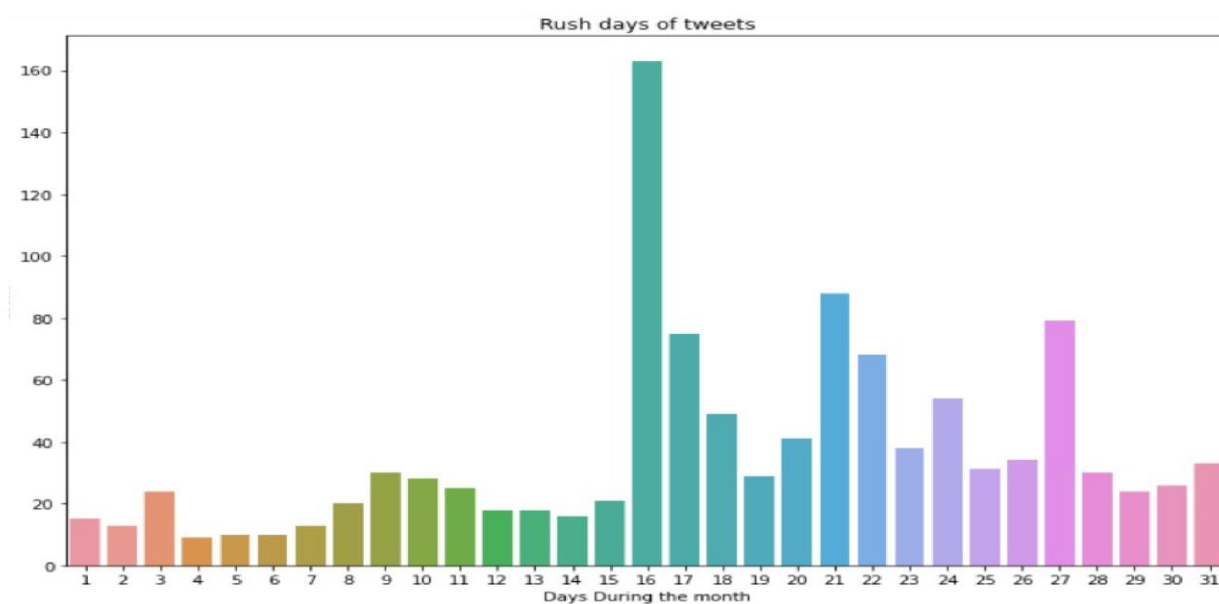
14. May also (53739 tweets) .. only (16813 users), no. of tweet from fresh users in same day: (166). Total no. of tweet from 2020 users: (13181), no. of frequent fresh users (2020) : (2729), no. of all frequent users: (16813).



In May peaks (6,8,11,12,13,18,19,22,24,25,26,27).

## October

15. For October (45106 tweets) .. only (16159 users), no. of tweet from fresh users in same day: (92). Total no. of tweet from 2020 users: (9855), no. of frequent fresh users (2020) : (2400), no. of all frequent users: (16159).

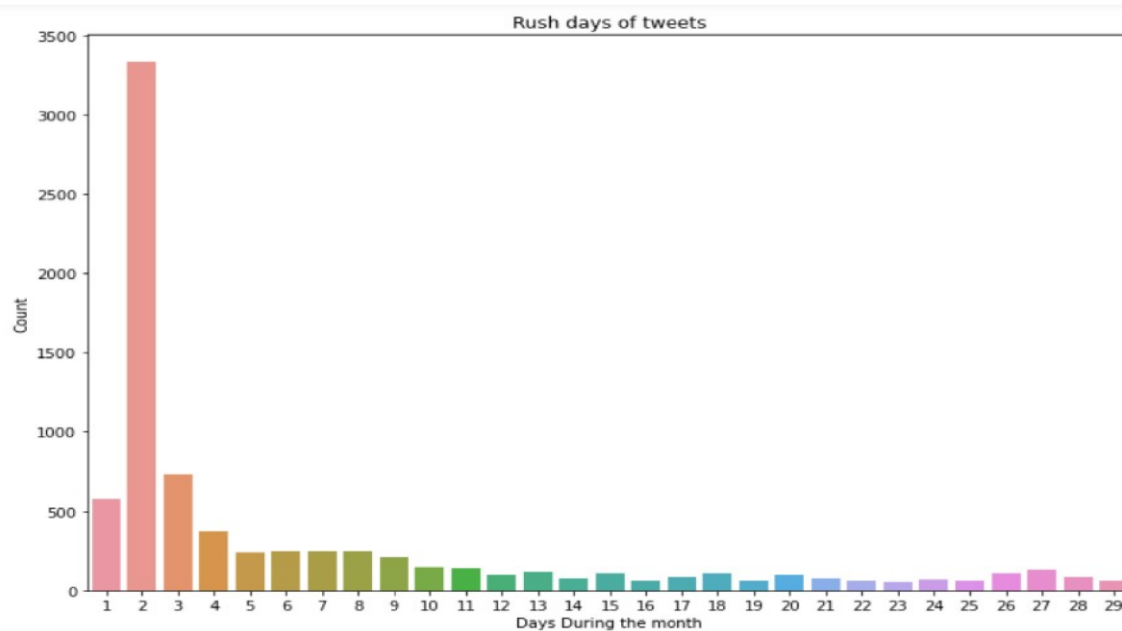


In Oct. Peaks (16, 21, 27).

## Febreuary

16. While Febreuary (44727 tweets) .. only (14847 users), no. of tweet from fresh users in same day: (720).

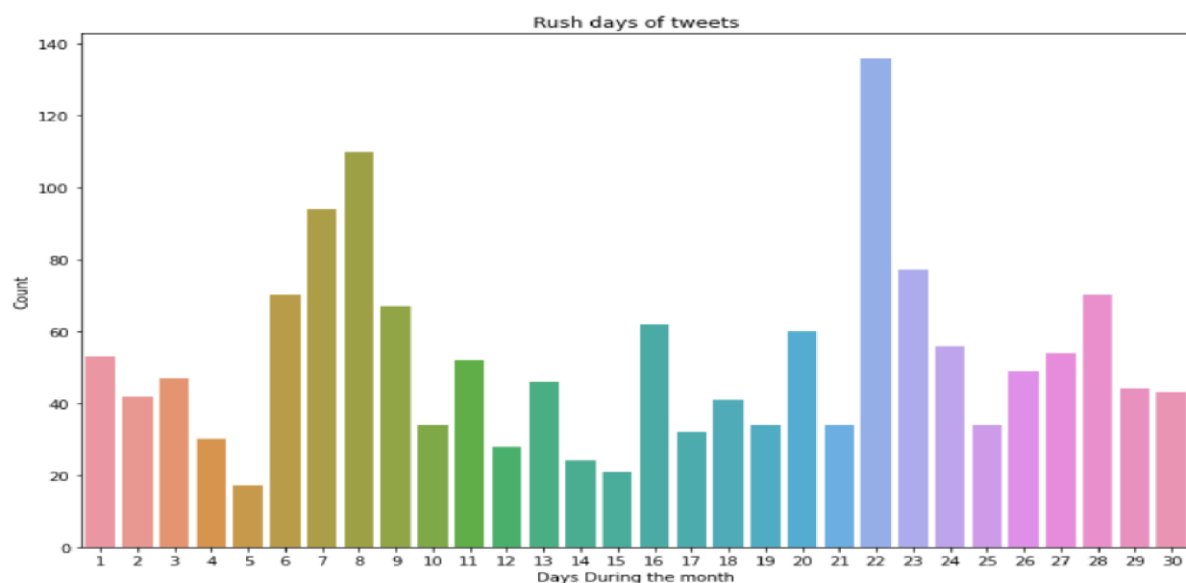
Total no. of tweet from 2020 users: (9664), no. of frequent fresh users (2020) : (2308), no. of all frequent users: (14847).



In Feb. has only (2,3).

## April

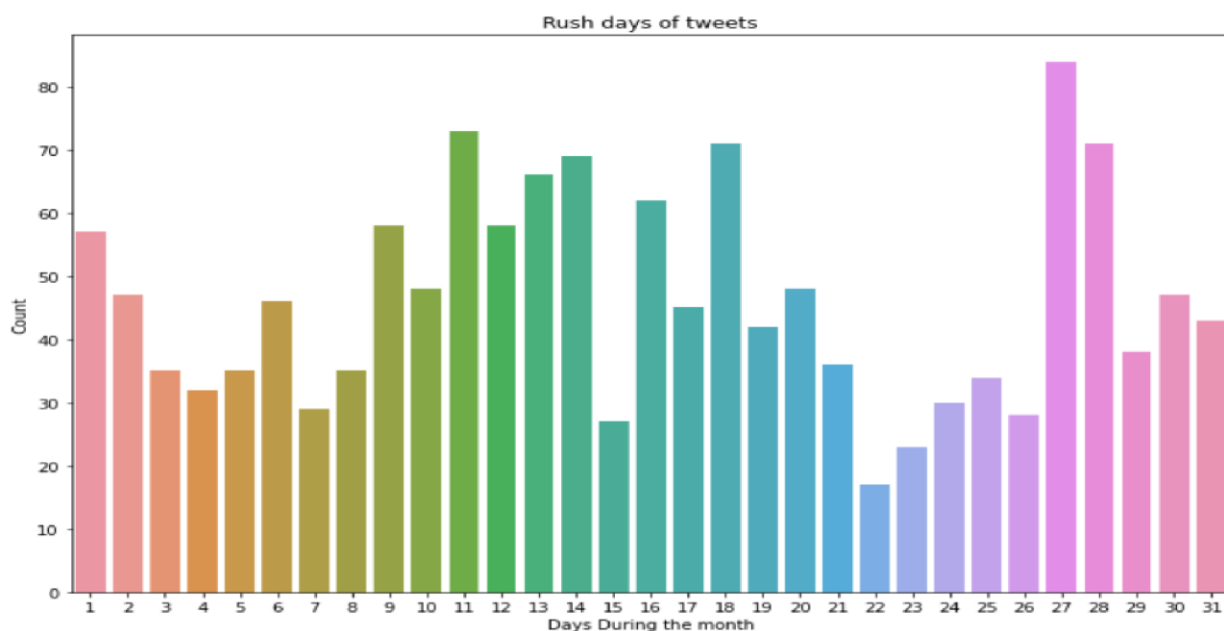
17. April showed (54004 tweets) .. only (16674 users), no. of tweet from fresh users in same day:( 64). Total no. of tweet from 2020 users: (8889), no. of frequent fresh users (2020) : (2575), no. of all frequent users: (16674).



In Apr. the most trendy (20:24, peak in 21), and others in (6, 7, 8, 9, 11, 16).

### March

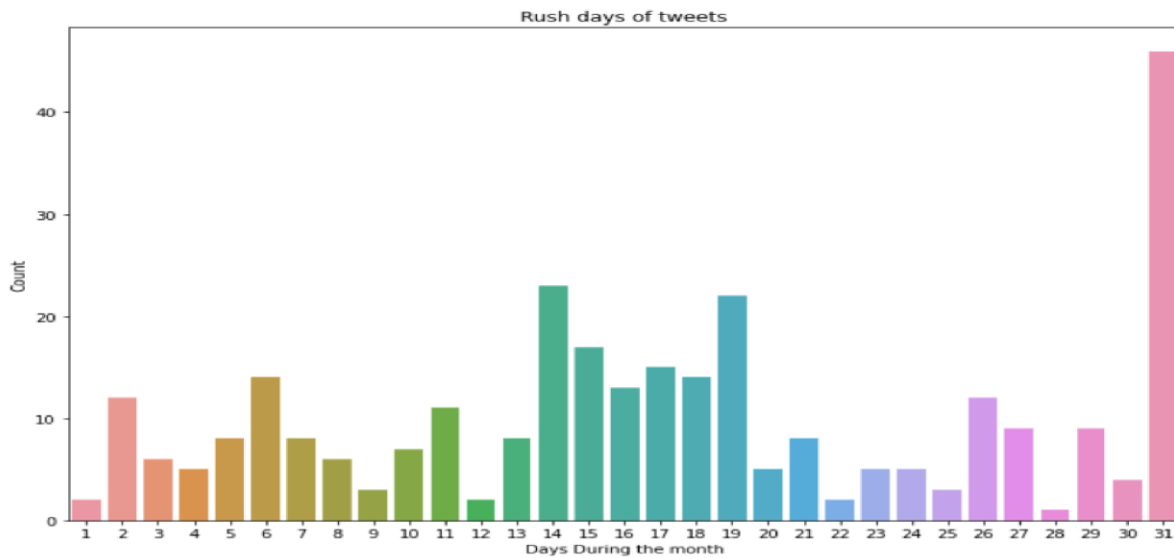
18. Here is March (49879 tweets) .. only (16782 users), no. of tweet from fresh users in same day: (54). Total no. of tweet from 2020 users: (8789), no. of frequent fresh users (2020) : (2279), no. of all frequent users: (16782).



In Mar. alot of trendy days specially (1, 10, 11, 13, 16, 19, 27, 28).

### January

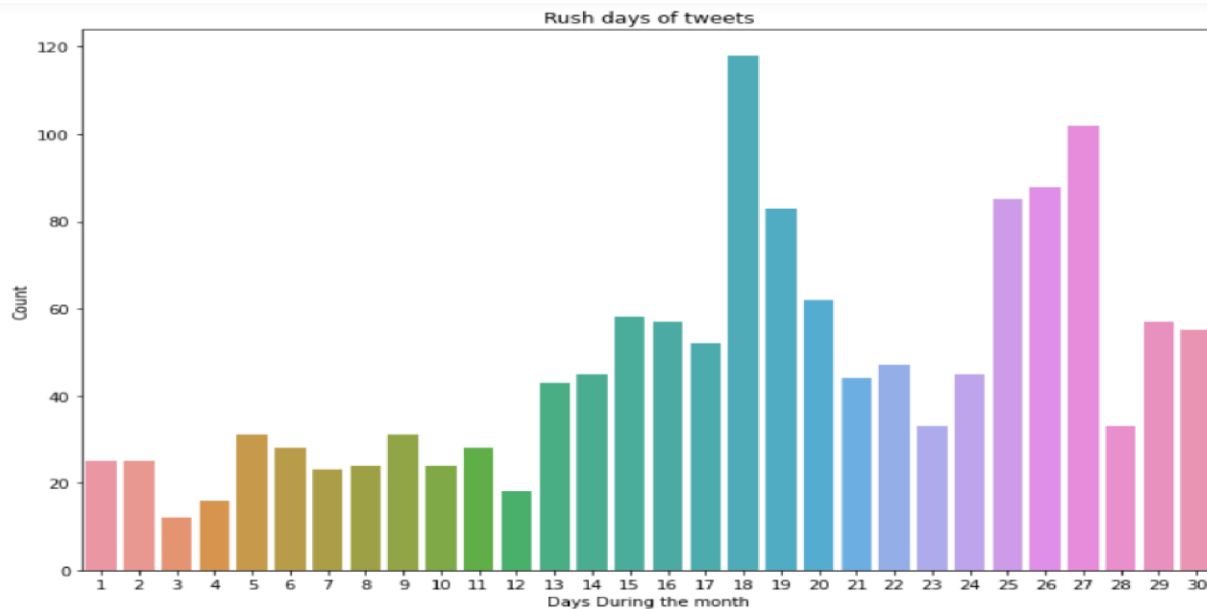
19. January to had (48776 tweets) .. only (17055 users), no. of tweet from fresh users in same day: (62). Total no. of tweet from 2020 users: (8622), no. of frequent fresh users (2020) : (3347), no. of all frequent users: (17055).



Jan. a very suspicious insight in day 31 must have some event.

## June

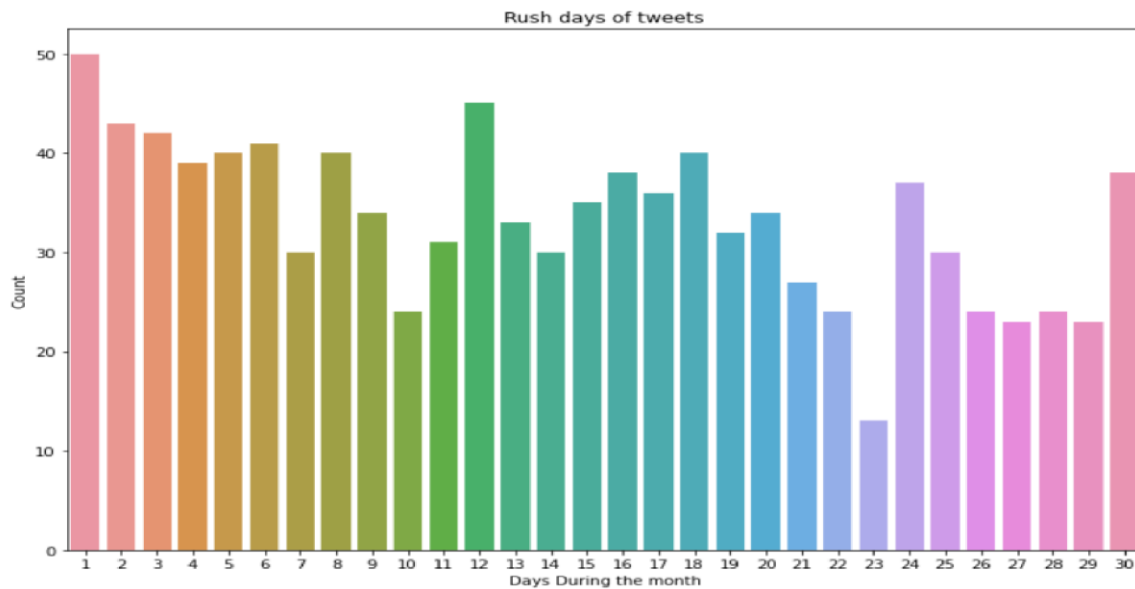
20. While June (52317 tweets) .. only (17516 users), the no. of tweet from fresh users in same day: (60). Total no. of tweet from 2020 users: (8412), no. of frequent fresh users (2020) : (2922), no. of all frequent users: (17516).



In June trendy days between (13:30)

## September

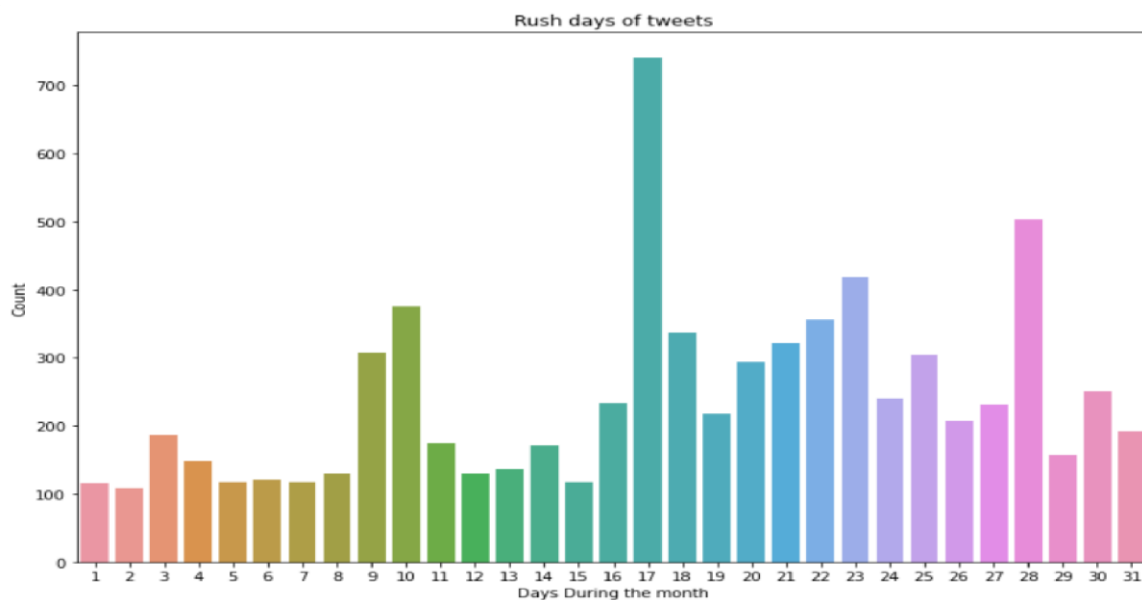
21. A look to September (43455 tweets) .. only (15633 users). no. of tweet from fresh users in same day: (56). Total no. of tweet from 2020 users: (7809), no. of frequent fresh users (2020) : (2167), no. of all frequent users: (15633).



In this month alot of trendy days

## December

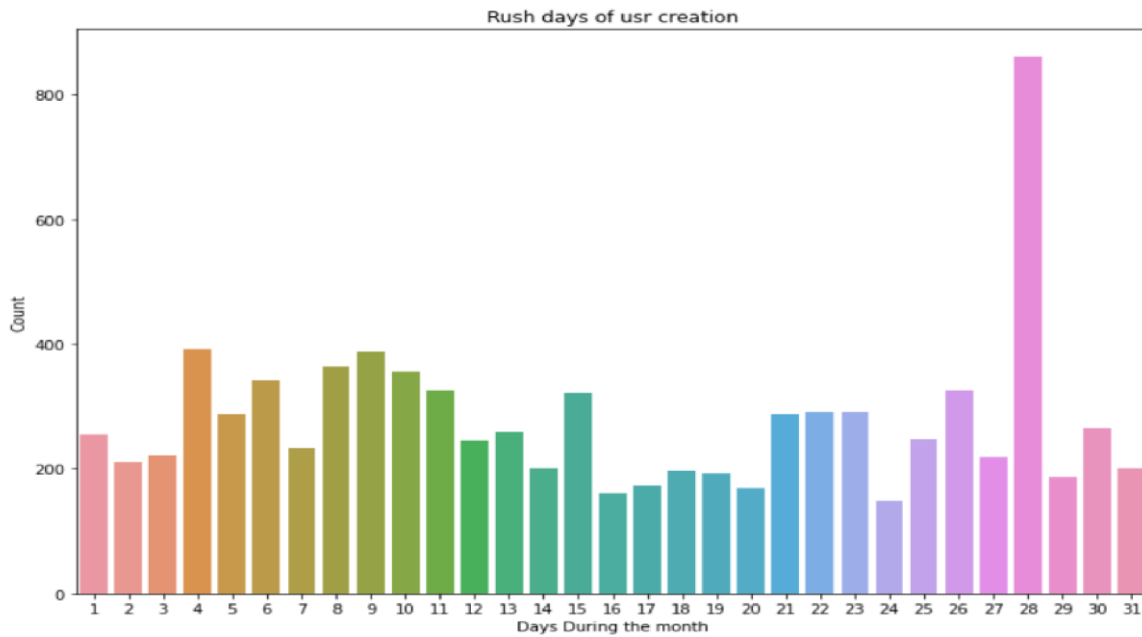
22. Finally December had (44970 tweets) .. only (14640 users) where no. of tweet from fresh users in same day: (715) and total no. of tweet from 2020 users: (2948) also no. of frequent fresh users (2020) : (2167) so no. of all frequent users: (14640).



Very obvious how the trendy dates here are segnificante specialty in (16:18), (20 : 23), (25:28), (8:11), (30-31).

## One Insight was kind of interesting after all ..

In jan. Created the largest no. Of users most of thoses users created at the last end of the month (28/01/2020) : they appeared in certain months more than others.



	user.id_str	id_count
0	1212162735430987776	1
1	1212165917372628993	1
2	1212169453690970112	1
3	1212172765475688448	1
4	1212172872048709632	1
...	...	...
3342	1223380912110555141	1
3343	1223381402176983040	1
3344	1223382696333905920	1
3345	1223388780897488904	1
3346	1223390302515466240	1

November	2502
February	2340
July	1401
December	715
March	324
August	292
April	242
May	223
October	189
June	183
September	168
January	43
Name: tweet_month, dtype: int64	

## Conclusion:

Many users were created in the very beginning of the year .. Many of them tweeted in the same day, others tweeted in minutes that is a very suspicious anomial.

The percentage of tweets made by 2020\_created users alone is interesting, and the style of their tweeting is even more interesting as they have few dates and months have the bulky regions of their tweets.

Also regarding the trendy dates in each month, for sure there is something in common and a special event that is going with "Amber" leads them to be more active in those dates, For example 31/01/2020 had the greatest No. In users created and the largest No. Of tweets within all the month, for "Amber" it was the audio court day for her.

Many of the fresh created users within various months appered to have the same "User\_names" and others related to each others, many were with names that were susbicious as "JhonnyDepp Girls" and "JusticeForJhonnyDepp".

**Many factors give a clue that even thoses accounts are bots or being created just for attacking "Amber".**