Dear candidate,

Seeking Alpha is a top website for investors in U.S. stocks.

Our model is unique. Instead of employing in-house analysts, we are a platform for thousands of investors who share their best investing ideas with our audience of 20M unique visitors/month.

Below you will find a few tasks which will help us understand your technical and analytical skills.

Good luck!

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1. Write an SQL query to answer the following questions. Declare the syntax (MySQL, SQL Server, Oracle, etc) of your choosing.

Given the following table...

Table = Subscriptions

Name	Type	Note
UserId	int not null	Unique identifier of the user, a user can have multiple subscriptions
SubscriptionId	string not null	Unique identifier of the subscription
ProductId	string not null	Unique identifier of the product
SubscriptionStartDate	date not null	
SubscriptionEndDate	date	The first date the user doesn't have access, null if user didn't cancel

E.g.

UserId	SubscriptionId	ProductId	SubscriptionStartDate	SubscriptionEndDate
8943	7h49f9s	pro	2018-03-04	
583689	4h98f7v	mp	2017-12-27	2018-07-28
684	5j43g2u	pro	2018-05-13	
8943	2j12d5k	mp	2018-01-20	2018-03-01

. . .	. . .	. . .	. . .	. . .

1. List the number of active subscriptions per product in descending order.

2. Create the distribution of active subscriptions per user i.e how many users have 1 subscription, how many have 2 subscriptions, how many have 3 subscriptions and so on

2. Given the following table

Table = mone

Name	Type	Note
ts_date	date not null	Day of visit
UserId	int	Unique identifier of user
MachineCookie	int not null	Unique identifier of a device
Platform	varchar	Values: desktop, tablet, mobile

E.g.

ts_date	UserId	MachineCookie	Platform
2018-07-10	8943	759827895732	desktop
2018-07-10	8943	430928402308	tablet
2018-07-10	583689	748927589287	desktop
2018-07-09	43984	985420580298	mobile
2018-07-09	8943	759827895732	desktop
2018-07-09		473878094774	mobile
...	...	...	...

A daily registered user (DRU) is a logged-in user that visited Seeking Alpha on a given day, logged out users don't have a UserId.

1. Create a time series for Total DRU and DRU for each platform, the results should be a table with ts_date column and 4 DRU columns

2. Create a time series of DRU who used one platform exclusively on a given day, the results should be a table with ts_date column and 3 DRU columns

3. Create a time series of DRU that are also paying for a subscription, the results should be a table with ts_Date column and 3 DRU columns (one for all paying, one for paying for `pro`, one for paying for `mp`)
You can use the subscription table to determine who is a paying subscriber.

3. Given the following table:

ts_date	page_before_subscription	total_subscriptions
2020-06-01	checkout	258
2020-06-01	portfolio	10
2020-06-01	premium	236
2020-06-01	lp_premium_1_screeners	15
2020-06-01	lp_premium_1	14
2020-06-01	lp_premium_testimonials	13
2020-06-02	premium	223
2020-06-02	portfolio	12
2020-06-02	checkout	267
2020-06-02	lp_premium_1_screeners	14
2020-06-02	subs	11
2020-06-03	checkout	51
2020-06-03	premium	43

Using SQL, provide the percent of the top contributing page of each day out of all the days.
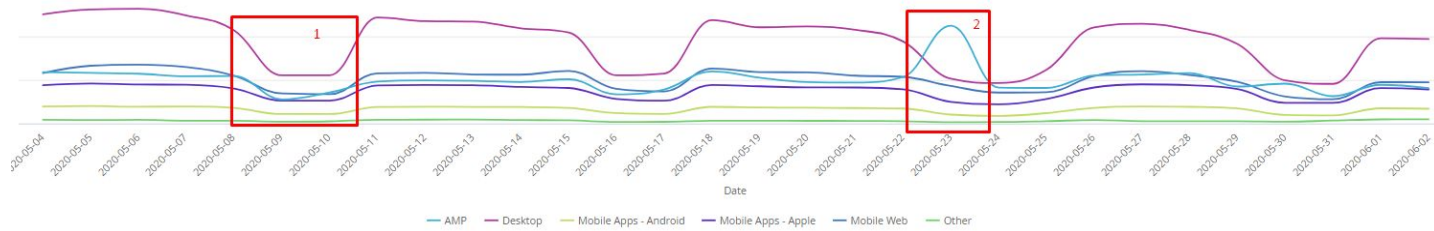
The required results:

ts_date, page_before_subscription , Percentage out of total
subscription that day, Percentage out of total subscription

The Percentage should have 2 places after the decimal and with '%' sign

4. Graph analysis

Below you will find time-series with number of page views (Y-Axis) per platform

What do you think are the reasons for causing the "drop" marked with #1 and what are reasons for the spike marked in #2? What will be your follow up analysis regarding #2 spike?

3. Open questions

3.1 As mentioned, Seeking Alpha publishes financial content for investors in U.S.-traded stocks. We are a subscription-first company. Which means that while we sell advertising, our primary focus is on growing the number of investors who pay for one of our paid plans. We have a number of paid plans that offer subscribers greater value than our free website has to offer.

Bearing that in mind, how do you think Covid-19 has affected our business, and on what basis do you make that assumption? Please address:

- User engagement
- Subscription sales
- Ad sales
- New user acquisition
- Subscriber churn