```sql
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--Author: Sudarshan Bahurupe
--Script: Assignment_V1
--Database: LocalDB
--Tool: SSMS
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/**
--Question 1: Calculate average spending of GO-SEND users throughout every month of
2020
**/

--Extracting month from booking_time, getting avg of actual_gmv
select max(datepart(month,booking_time)) as month, AVG(actual_gmv) as avg_gmv
from Assignment_data_sample

--applying filter to retunr values from 2020
where datepart(year,booking_time) = 2020
group by month
order by month

/**
--Question 2: Calculate number of "platform hard churn" users and "platform soft
churn" users for each month in 2020.
**/

with ---creating column for latest date (max of booking date in this case)
cte as (select max(booking_date) as latest_date from Assignment_data_sample)

-- calculating the differect between latest date and booking date to get inactive
period
,cte2 as (select *,DATEDIFF(month,booking_date,latest_date) as inactivity from cte
join [dbo].[Assignment_data_sample] A on cte.latest_date>=A.booking_date)

-- Creating categorical column with respect to there inactivity time period
,cte3 as (select *,
(case when inactivity<6 and inactivity>=1 then 'Platform soft churn'
when inactivity>6 then 'Platform hard churn'
else 'no churn' end) as churn
from cte2)

-- Calculate number of "platform hard churn" users and "platform soft churn" users for
each month in 2020.
select churn,month, count(distinct customer_id) from cte3
where datepart(year,booking_time) = 2020
group by churn,month



/**
--Question 3 What is the reactivation rate (those who transacted after labelled churn)
of "platform hard churn" users throughout each month of 2020? Identify which product
helps in reactivation the most in each month.
**/

---creating column for latest date (max of booking date in this case)
with cte as (
```

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select max(booking_date) as latest_date from Assignment_data_sample)

-- calculating the differect between latest date and booking date to get inactive
period
,cte2 as (select *,DATEDIFF(month,booking_date,latest_date) as inactivity from cte
join [dbo].[Assignment_data_sample] A on cte.latest_date>=A.booking_date)

-- Creating categorical column with respect to there inactivity time period
,cte3 as (select *,
(case when inactivity<6 and inactivity>=1 then 'Platform soft churn'
when inactivity>6 then 'Platform hard churn'
else 'no churn' end) as churn
from cte2)

---group by at customer and month level
, cte4 as (select cast(customer_id as int) as
customer_id,month,service_type,max(churn) as activity from cte3
group by customer_id,month,service_type)

-- Creating column to retun activity status in previous month
,cte5 as (select *,lag(activity) over(partition by customer_id order by
customer_id,month) as last_activity from cte4)

-- Returning transition as Yes/No based on condition
,cte6 as (select *, (case when activity = 'no churn' and last_activity = 'Platform
soft churn' then 'Yes' else 'No' end) as Transition from cte5)

-- Returning Reactivation rate across all the months and services from data where
transition has happened
select month,service_type,(select count(customer_id) from cte6 where Transition =
'Yes')/count(*) from cte6
group by month,service_type
```