Case Study -3

Tuesday, February 1, 2022 2:43 PM

Section A

Based off the 8 sample customers provided in the sample from the subscriptions table, write a brief description about each customer's onboarding journey.

Try to keep it as short as possible - you may also want to run some sort of join to make your explanations a bit easier!

```
select s.customer_id,
        p.plan_id,
        p.price,
        p.plan_name,
        s.start_date
        from foodie_fi.plans p inner join foodie_fi.subscriptions s
        on p.plan_id=s.plan_id
        group by s.customer_id,p.plan_id,p.price,s.start_date,p.plan_name
        having s.customer_id IN (1,2,3,4,5,6,7,8) order by customer_id;
```

customer_id	plan_id	price	plan_name	start_date
1	0	0.00	trial	2020-08-01T00:00:00.000Z
1	1	9.90	basic monthly	2020-08-08T00:00:00.000Z
2	0	0.00	trial	2020-09-20T00:00:00.000Z
2	3	199.00	pro annual	2020-09-27T00:00:00.000Z
3	0	0.00	trial	2020-01-13T00:00:00.000Z
3	1	9.90	basic monthly	2020-01-20T00:00:00.000Z
4	0	0.00	trial	2020-01-17T00:00:00.000Z
4	1	9.90	basic monthly	2020-01-24T00:00:00.000Z
4	4	null	churn	2020-04-21T00:00:00.000Z
5	0	0.00	trial	2020-08-03T00:00:00.000Z
5	1	9.90	basic monthly	2020-08-10T00:00:00.000Z
6	0	0.00	trial	2020-12-23T00:00:00.000Z
6	1	9.90	basic monthly	2020-12-30T00:00:00.000Z
6	4	null	churn	2021-02-26T00:00:00.000Z

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Section B

1. How many customers has Foodie-Fi ever had?

```
select count(Distinct customer_id) As Customers
        from foodie_fi.subscriptions
        where plan_id != 4;
```

Results Copy as Markdown

Query #2 Execution time: 1ms

customers
1000

2. What is the monthly distribution of trial plan start_date values for our dataset - use the start of the month as the group by value

```
select extract(month from start_date) as month_date,
        to_char(start_date,'month') as month_name,
        count(plan_id) as trial_Subscriptions
        from foodie_fi.subscriptions
        where plan_id = 0
        group by extract(month from start_date),to_char(start_date,'month');
```

month_date	month_name	trial_subscriptions
1	january	88
2	february	68
3	march	94

4	april	81
5	may	88
6	june	79
7	july	89
8	august	88
9	september	87
10	october	79

3. What plan start_date values occur after the year 2020 for our dataset? Show the breakdown by count of events for each plan_name

```
select p.plan_id,
        p.plan_name,
        count(p.plan_id) as Events_2021
        from foodie_fi.subscriptions s inner join foodie_fi.plans p
        on s.plan_id=p.plan_id
        where s.start_date >= '2021-01-01'
        group by p.plan_name,p.plan_id
        order by p.plan_id;
```

plan_id	plan_name	events_2021
1	basic monthly	8
2	pro monthly	60
3	pro annual	63
4	churn	71

4. What is the customer count and percentage of customers who have churned rounded to 1 decimal place?

```
select count(customer_id) As churned,
        round(count(customer_id)*100::Numeric/(select count(distinct customer_id)
        from foodie_fi.subscriptions),1) as percentage
        from foodie_fi.subscriptions
        where plan_id=4;
```

Query #5 Execution time: 1ms

churned	percentage
307	30.7

5. How many customers have churned straight after their initial free trial - what percentage is this rounded to the nearest whole number?

```
with ranking as(
        select customer_id,
                plan_id,
                row_number() over(partition by customer_id order by plan_id) As rank FROM
                foodie_fi.subscriptions)
 -- select * from ranking;
select count(customer_id) As churned,
        round(count(customer_id)*100::Numeric/(select count(distinct customer_id)
        from foodie_fi.subscriptions),1) as percentage
        from ranking
        where plan_id=4 and rank=2;
```

churned	percentage
92	9.2

6. What is the number and percentage of customer plans after their initial free trial?

```
with next_plan as(
        select customer_id,
            plan_id,
            LEAD(plan_id,1) over(partition by customer_id
            order by plan_id) as next_plan
            from foodie_fi.subscriptions)

-- select * from next_plan;
select next_plan,
    count(customer_id) As Count,
    round(count(customer_id)*100::Numeric/(select count(distinct customer_id)
    from foodie_fi.subscriptions),1) as percentage
    from next_plan
    where plan_id=0 and next_plan is not null
    group by next_plan
    order by next_plan;
```

next_plan	count	percentage
1	546	54.6
2	325	32.5
3	37	3.7
4	92	9.2

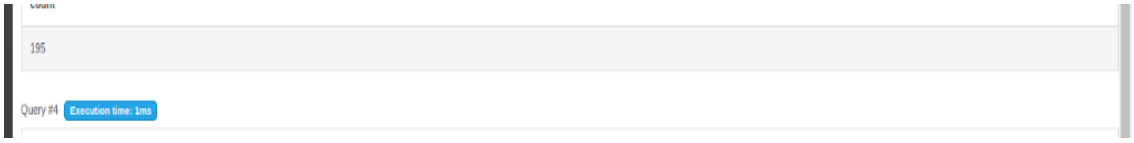
7. What is the customer count and percentage breakdown of all 5 plan_name values at 2020-12-31?

```
select
    s.plan_id,count(*),
    sum(case when s.start_date = '2020-12-31' then 1 else 0 end) as customer_31,
  round((sum(case when s.start_date = '2020-12-31' then 1 else 0
end)::NUMERIC/count(*))*100,2) || '%' as Percentage
  from foodie_fi.subscriptions s inner join
  foodie_fi.plans p
  on s.plan_id=p.plan_id group by s.plan_id;
```

plan_id	count	customer_31	percentage
0	1000	0	0.00%
1	546	0	0.00%
2	539	0	0.00%
3	258	0	0.00%
4	307	1	0.33%

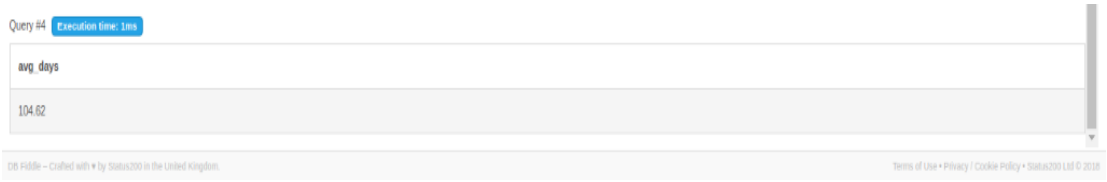
8. How many customers have upgraded to an annual plan in 2020?

```
select count(customer_id)
    from foodie_fi.subscriptions
    where plan_id = 3 and start_date <= '2020-12-31';
```



9. How many days on average does it take for a customer to an annual plan from the day they join Foodie-Fi?

```
with CTE1 AS(select customer_id,start_date as trial_date from foodie_fi.subscriptions where
 plan_id=0),
CTE2 AS(select customer_id,start_date as annual_date from foodie_fi.subscriptions where
plan_id=3)
select Round(avg(annual_date-trial_date),2) As AVG_days
        from CTE1 join CTE2 on
        CTE1.customer_id=CTE2.customer_id;
```



10. Can you further breakdown this average value into 30 day periods (i.e. 0-30 days, 31-60 days etc)

```
with trial_plan AS(select customer_id,
                        start_date as trial_date
                        from foodie_fi.subscriptions
                        where plan_id=0),
annual_plan AS(select customer_id,
                        start_date as annual_date
                        from foodie_fi.subscriptions
                        where  plan_id=3),
Days as (select width_bucket(a.annual_date - t.trial_date,0,360,12) as avg_days
                    from trial_plan   t  inner join annual_plan a
                    on a.customer_id=t.customer_id)
select (avg_days)*30 || ' Days' As Breakdown_Period,
      count(avg_days) as customer from days
      group by avg_days;
```

breakdown_period	customer
30 Days	48
60 Days	25
90 Days	33
120 Days	35
150 Days	43
180 Days	35
210 Days	27
240 Days	4
270 Days	5
300 Days	1
330 Days	1
360 Days	1

11. How many customers downgraded from a pro monthly to a basic monthly plan in 2020?

```
with plan_CTE as (
        select customer_id,
            plan_id,
             start_date,
             LEAD(plan_id,1) over(partition by customer_id) as plan
             from foodie_fi.subscriptions)
-- select * from plan_CTE where plan_id=2 and plan=1;
select count(customer_id) As Customers
    from plan_CTE
    where plan_id=2 and plan=1 and start_date <= '2020-12-31';
```