

## Case Study Questions

This case study is split into an initial data understanding question before diving straight into data analysis questions before finishing with 1 single extension challenge.

### A. Customer Journey

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

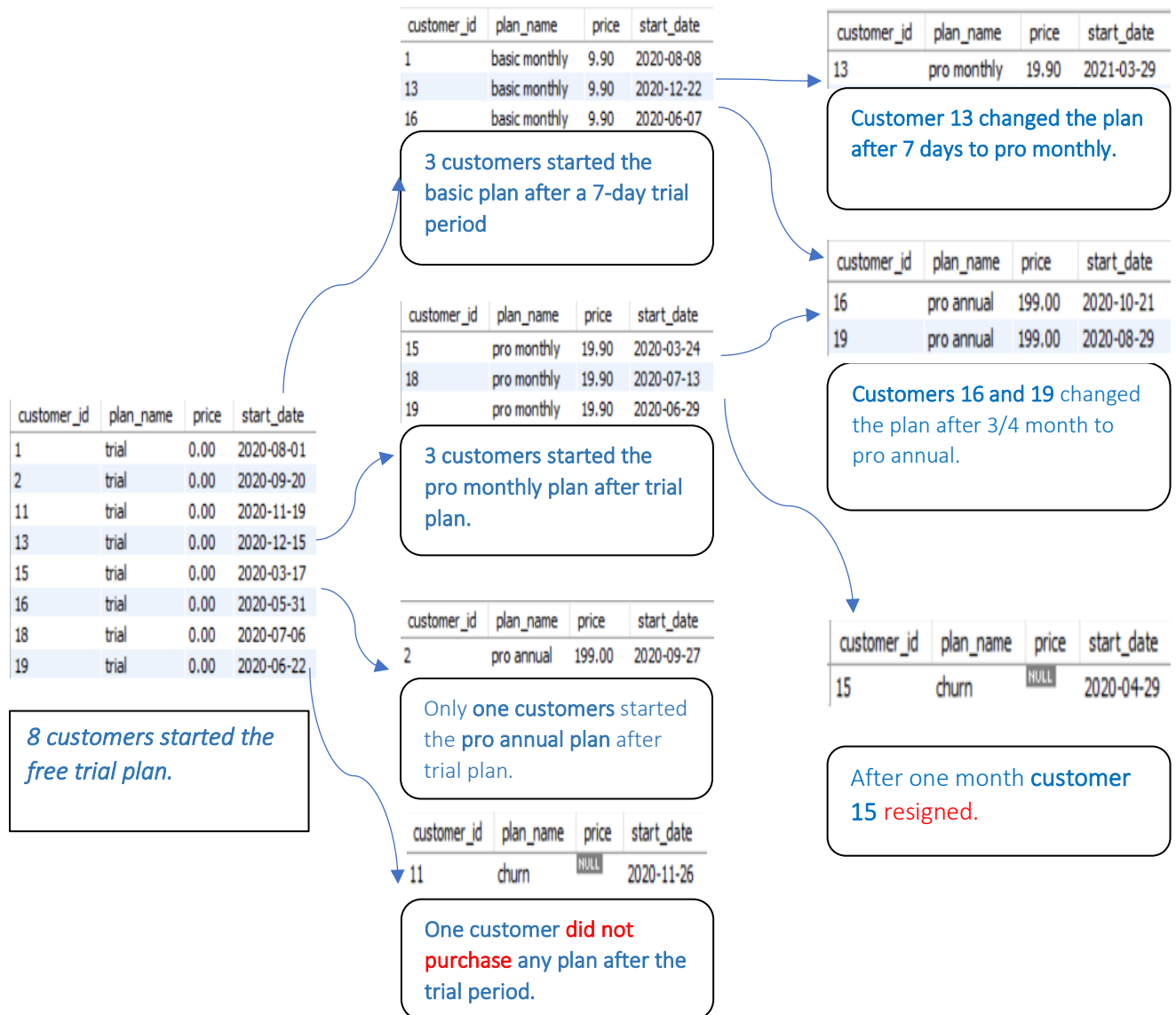
Try to keep it as short as possible - you may also want to run some sort of join to make your explanations a bit easier!

For analysis, you need a table with all information.

```
Create View All_Information As
Select s.customer_id, p.plan_id, p.plan_name, p.price, s.start_date
From plans as p
Join subscriptions as s On p.plan_id=s.plan_id
Where s.customer_id In (1, 2, 11, 13, 15, 16, 18, 19);
```

customer_id	plan_id	plan_name	price	start_date
1	0	trial	0.00	2020-08-01
1	1	basic monthly	9.90	2020-08-08
2	0	trial	0.00	2020-09-20
2	3	pro annual	199.00	2020-09-27
11	0	trial	0.00	2020-11-19
11	4	churn	NULL	2020-11-26
13	0	trial	0.00	2020-12-15
13	1	basic monthly	9.90	2020-12-22
13	2	pro monthly	19.90	2021-03-29
15	0	trial	0.00	2020-03-17
15	2	pro monthly	19.90	2020-03-24
15	4	churn	NULL	2020-04-29
16	0	trial	0.00	2020-05-31
16	1	basic monthly	9.90	2020-06-07
16	3	pro annual	199.00	2020-10-21
18	0	trial	0.00	2020-07-06
18	2	pro monthly	19.90	2020-07-13
19	0	trial	0.00	2020-06-22
19	2	pro monthly	19.90	2020-06-29
19	3	pro annual	199.00	2020-08-29

Below is an analysis of each of the customer:



## B. Data Analysis Questions

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

```
Select count(distinct(customer_id)) as unique_customers
From subscriptions;
```

	unique_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 monthname(start_date) as months, count(customer_id) as number_of_customer
From subscriptions
Where plan_id = 0
Group by months
Order by start_date;
```

months	number_of_customer
January	88
February	68
March	94
April	81
May	88
June	79
July	89
August	88
September	87
October	79
November	75
December	84

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_name, count(s.customer_id) as year_2021
From subscriptions as s
Join plans as p On p.plan_id=s.plan_id
Where year(s.start_date) = 2021
Group by p.plan_id
Order by p.plan_id;
```

plan_name	year_2021
basic monthly	8
pro monthly	60
pro annual	63
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 churn_count, round(100*count(customer_id)/
(Select count(distinct customer_id) From subscriptions),1) as churn_percentage
From subscriptions
Where plan_id = 4;
```

churn_count	churn_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?

```
Create View ranking As
SELECT s.customer_id, s.plan_id, p.plan_name,
ROW_NUMBER() OVER (PARTITION BY s.customer_id ORDER BY s.plan_id) AS plan_rank
FROM subscriptions as s
JOIN plans as p ON s.plan_id = p.plan_id;
```

customer_id	plan_id	plan_name	plan_rank
1	0	trial	1
1	1	basic monthly	2
2	0	trial	1
2	3	pro annual	2
3	0	trial	1
3	1	basic monthly	2
4	0	trial	1
4	1	basic monthly	2
4	4	churn	3
5	0	trial	1
5	1	basic monthly	2
6	0	trial	1
6	1	basic monthly	2
6	4	churn	3
7	0	trial	1
7	1	basic monthly	2
7	2	pro monthly	3
8	0	trial	1
8	1	basic monthly	2

```
Select count(customer_id) as resignation_after_trial_plan,
round(100*count(customer_id)/
- (Select count(distinct customer_id) From subscriptions),1) as churn_percentage
From ranking
Where plan_id = 4 and plan_rank =2;
```

resignation_after_trial_plan	churn_percentage
92	9.2

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

```
Select (case
when plan_id = 1 and plan_rank = 2 Then '1'
when plan_id = 2 and plan_rank = 2 Then '2'
when plan_id = 3 and plan_rank = 2 Then '3'
when plan_id =4 and plan_rank = 2 Then '4'
- End) as plan, count(customer_id) as number_of_customer,
round(100*count(customer_id)/
- (Select count(distinct customer_id) From subscriptions),1) as percentage_of_customer
From ranking
Where plan_rank = 2
Group by plan
Order by plan;
```

plan	number_of_customer	percentage_of_customer
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?

```
Create view next_plan As
SELECT customer_id, plan_id, start_date,
LEAD(start_date, 1) OVER (PARTITION BY customer_id ORDER BY start_date) as next_date
FROM subscriptions
Where start_date <= '2020-12-31';
```

customer_id	plan_id	start_date	next_date
1	0	2020-08-01	2020-08-08
1	1	2020-08-08	NULL
2	0	2020-09-20	2020-09-27
2	3	2020-09-27	NULL
3	0	2020-01-13	2020-01-20
3	1	2020-01-20	NULL
4	0	2020-01-17	2020-01-24
4	1	2020-01-24	2020-01-31

```
Select plan_id, count(customer_id) as customer,
round(100*count(customer_id)/
(select count(distinct customer_id) From subscriptions),1) as percentage_of_customer
From next_plan
Where next_date is null
Group by plan_id
Order by plan_id;
```

plan_id	customer	percentage_of_customer
0	19	1.9
1	224	22.4
2	326	32.6
3	195	19.5
4	236	23.6

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

```
Select count(customer_id) as upgrade_to_an_annual_plan_in_2020
From subscriptions
Where plan_id = 3 and year(start_date) = 2020;
```

upgrade_to_an_annual_plan_in_2020
195

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

```

Create View Trial_date_table As
Select customer_id, start_date as trial_date
From subscriptions
Where plan_id = 0;

```

```

Create View Annual_date_table As
Select customer_id, start_date as annual_date
From subscriptions
Where plan_id = 3;

```

customer_id	trial_date	customer_id	annual_date
1	2020-08-01	2	2020-09-27
2	2020-09-20	9	2020-12-14
3	2020-01-13	16	2020-10-21
4	2020-01-17	17	2020-12-11
5	2020-08-03	19	2020-08-29
6	2020-12-23	20	2020-06-05
7	2020-02-05	23	2020-05-20

```

Select round(avg(datediff(a.annual_date, t.trial_date)),0) as average_number_of_days_to_annual_plan
From Trial_date_table as t
Join Annual_date_table as a On t.customer_id = a.customer_id;

```

average_number_of_days_to_annual_plan
105

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

```

Select (case
when datediff(a.annual_date, t.trial_date) <30 Then '0-30 days'
when datediff(a.annual_date, t.trial_date) <60 and datediff(a.annual_date, t.trial_date) >=30 Then '30-60 days'
when datediff(a.annual_date, t.trial_date) <90 and datediff(a.annual_date, t.trial_date) >=60 Then '60-90 days'
when datediff(a.annual_date, t.trial_date) <120 and datediff(a.annual_date, t.trial_date) >=90 Then '90-120 days'
when datediff(a.annual_date, t.trial_date) <150 and datediff(a.annual_date, t.trial_date) >=120 Then '120-150 days'
when datediff(a.annual_date, t.trial_date) <180 and datediff(a.annual_date, t.trial_date) >=150 Then '150-180 days'
when datediff(a.annual_date, t.trial_date) <210 and datediff(a.annual_date, t.trial_date) >=180 Then '180-210 days'
when datediff(a.annual_date, t.trial_date) <240 and datediff(a.annual_date, t.trial_date) >=210 Then '210-240 days'
when datediff(a.annual_date, t.trial_date) <270 and datediff(a.annual_date, t.trial_date) >=240 Then '240-270 days'
when datediff(a.annual_date, t.trial_date) <300 and datediff(a.annual_date, t.trial_date) >=270 Then '270-300 days'
when datediff(a.annual_date, t.trial_date) <330 and datediff(a.annual_date, t.trial_date) >=300 Then '300-330 days'
Else '330-360 days'
End) as range_of_days, count(*) as customer
From Trial_date_table as t
Join Annual_date_table as a On t.customer_id = a.customer_id
Group by range_of_days
Order by datediff(a.annual_date, t.trial_date);

```

range_of_days	customer
0-30 days	48
30-60 days	25
60-90 days	33
90-120 days	35
120-150 days	43
150-180 days	35
180-210 days	27
210-240 days	4
240-270 days	5
270-300 days	1
300-330 days	1
330-360 days	1

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

```
Create view next_plan_id As
SELECT customer_id, plan_id, start_date,
LEAD(plan_id, 1) OVER (PARTITION BY customer_id ORDER BY plan_id) as next_plan_id
FROM subscriptions
Where start_date <= '2020-12-31';
```

customer_id	plan_id	start_date	next_plan_id
1	0	2020-08-01	1
1	1	2020-08-08	NULL
2	0	2020-09-20	3
2	3	2020-09-27	NULL
3	0	2020-01-13	1
3	1	2020-01-20	NULL
4	0	2020-01-17	1

```
Select count(customer_id) as customers_downgraded_from_promonthly_to_basic_2020
From next_plan_id
Where plan_id = 2 and next_plan_id =1;
```

customers_downgraded_from_promonthly_to_bas
0