1. **Problem Statement – 1**

How many customers has Foodie-Fi ever had?

**Solution - 1**

SELECT COUNT(DISTINCT customer\_id) AS unique\_customer

FROM dbo.subscriptions;

1. **Problem Statement - 2**

What is the monthly distribution of trial plan start date values for our dataset?

**Solution - 2**

SELECT DATE\_PART('month',start\_date) AS month\_date,

TO\_CHAR(start\_date, 'Month') AS month\_name,

COUNT(\*) AS trial\_subscriptions

FROM dbo.subscriptions s

JOIN dbo.plans p

ON s.plan\_id = p.plan\_id

WHERE s.plan\_id = 0

GROUP BY DATE\_PART('month',start\_date),

TO\_CHAR(start\_date, 'Month')

ORDER BY month\_date ASC;

1. **Problem Statement - 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.

**Solution - 3**

SELECT p.plan\_id,

p.plan\_name,

COUNT(\*) AS events

FROM dbo.subscriptions s

JOIN dbo.plans p

ON s.plan\_id = p.plan\_id

WHERE s.start\_date >= '2021-01-01'

GROUP BY p.plan\_id, p.plan\_name

ORDER BY p.plan\_id;

1. **Problem Statement - 4**

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

**Solution - 4**

SELECT COUNT(\*) AS churn\_count,

ROUND(100 \* COUNT(\*)::NUMERIC / (SELECT COUNT(DISTINCT customer\_id) FROM dbo.subscriptions),1) AS churn\_percentage

FROM dbo.subscriptions s

JOIN dbo.plans p

ON s.plan\_id = p.plan\_id

WHERE s.plan\_id = 4;

1. **Problem Statement - 5**

How many customers have churned straight after their initial free trial? — what percentage is this rounded to the

nearest whole number?

**Solution - 5**

WITH 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 dbo.subscriptions s

JOIN dbo.plans p

ON s.plan\_id = p.plan\_id)

SELECT COUNT(\*) AS churn\_count,

ROUND(100 \* COUNT(\*) / (SELECT COUNT(DISTINCT customer\_id) FROM dbo.subscriptions),0) AS churn\_percentage

FROM ranking

WHERE plan\_id = 4 -- Filter to churn plan

AND plan\_rank = 2

1. **Problem Statement - 6**

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

**Solution - 6**

WITH next\_plan\_cte AS (

SELECT customer\_id,

plan\_id,

LEAD(plan\_id, 1) OVER( PARTITION BY customer\_id ORDER BY plan\_id) as next\_plan

FROM dbo.subscriptions)

SELECT next\_plan,

COUNT(\*) AS conversions,

ROUND(100 \* COUNT(\*)/ (SELECT COUNT(DISTINCT customer\_id) FROM dbo.subscriptions),1) AS conversion\_percentage

FROM next\_plan\_cte

WHERE next\_plan IS NOT NULL

AND plan\_id = 0

GROUP BY next\_plan

ORDER BY next\_plan;

1. **Problem Statement - 7**

What is the customer count and percentage breakdown of all 5 plan name values at 2020–12–31?

**Solution - 7**

WITH 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\_dateFROM dbo.subscriptions

WHERE start\_date <= '2020-12-31'),

customer\_breakdown AS (

SELECT plan\_id,

COUNT(DISTINCT customer\_id) AS customers

FROM next\_plan

WHERE (next\_date IS NOT NULL AND (start\_date < '2020-12-31'

AND next\_date > '2020-12-31'))

OR (next\_date IS NULL AND start\_date < '2020-12-31')

GROUP BY plan\_id)

SELECT plan\_id,

customers,

ROUND(100 \* customers / (SELECT COUNT(DISTINCT customer\_id)

FROM dbo.subscriptions),1) AS percentage

FROM customer\_breakdown

GROUP BY plan\_id, customers

ORDER BY plan\_id;

SELECT plan\_id,

customers,

ROUND(100 \* customers / (SELECT COUNT(DISTINCT customer\_id) FROM dbo.subscriptions),1) AS percentage

FROM customer\_breakdown

GROUP BY plan\_id, customers

ORDER BY plan\_id;

1. **Problem Statement - 8**

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

**Solution - 8**

SELECT COUNT(DISTINCT customer\_id) AS unique\_customer

FROM dbo.subscriptions

WHERE plan\_id = 3

AND start\_date <= '2020-12-31';

1. **Problem Statement - 9**

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

**Solution - 9**

-- Filter results to customers at trial plan = 0

WITH trial\_plan AS (

SELECT customer\_id,

start\_date AS trial\_date

FROM dbo.subscriptions

WHERE plan\_id = 0),

-- Filter results to customers at pro annual plan = 3

annual\_plan AS

(SELECT customer\_id,

start\_date AS annual\_date

FROM dbo.subscriptions

WHERE plan\_id = 3)

SELECT ROUND(AVG(annual\_date - trial\_date),0) AS avg\_days\_to\_upgrade

FROM trial\_plan tp

JOIN annual\_plan ap

ON tp.customer\_id = ap.customer\_id;

1. **Problem Statement - 10**

Can you further breakdown this average value into 30-day periods?

**Solution - 10**

-- Filter results to customers at trial plan = 0

WITH trial\_plan AS (

SELECT customer\_id,

start\_date AS trial\_date

FROM dbo.subscriptions

WHERE plan\_id = 0),

-- Filter results to customers at pro annual plan = 3

annual\_plan AS (

SELECT customer\_id,

start\_date AS annual\_date

FROM dbo.subscriptions

WHERE plan\_id = 3),

-- Sort values above in buckets of 12 with range of 30 days each

bins AS (

SELECT WIDTH\_BUCKET(ap.annual\_date - tp.trial\_date, 0, 360, 12) AS avg\_days\_to\_upgrade

FROM trial\_plan tp

JOIN annual\_plan ap

ON tp.customer\_id = ap.customer\_id)

SELECT ((avg\_days\_to\_upgrade - 1) \* 30 || ' - ' || (avg\_days\_to\_upgrade) \* 30) || ' days' AS breakdown,

COUNT(\*) AS customers

FROM bins

GROUP BY avg\_days\_to\_upgrade

ORDER BY avg\_days\_to\_upgrade

1. **Problem Statement - 11**

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

**Solution - 11**

WITH next\_plan\_cte AS (

SELECT customer\_id,

plan\_id,

start\_date,

LEAD(plan\_id, 1) OVER( PARTITION BY customer\_id ORDER BY plan\_id) as next\_plan

FROM dbo.subscriptions)

SELECT COUNT(\*) AS downgraded

FROM next\_plan\_cte

WHERE start\_date <= '2020-12-31'

AND plan\_id = 2

AND next\_plan = 1;