# CAPSTONE PROJECT

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**PROJECT DESIGNED BY : RELEVEL(UNACADEMY)**

# Introduction to Case

Ron and his buddies founded Foodie-Fi 🥑 and began selling monthly and annual

subscriptions, providing clients with unrestricted on-demand access to exclusive cuisine

videos from around the world.

This case study focuses on the use of subscription-style digital data to answer critical

business questions about the customer journey, payments, and business performance.



(double click on the pdf to open)

# Table Relationship

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# Table ‘plans’ Description

There are 5 customer plans:

**Trial** — Customers sign up for a 7-day free trial and will be automatically enrolled in the pro monthly subscription plan

unless they unsubscribe, downgrade to basic, or upgrade to an annual pro plan during the trial.

**Basic plan** — Customers have limited access and can only stream their videos with the basic package, which is only

available monthly for $9.90.

**Pro plan** — Customers on the Pro plan have no watch time limits and can download videos for oﬄine viewing. Pro plans begin at $19.90 per month or $199 for a yearly subscription.

When clients cancel their Foodie-Fi service, a Churn plan record with a null pricing is created, but their plan continues

until the end of the billing cycle.

# Table ‘plans’ Description (contd.)



# Table ‘subscriptions’ Description

Customer subscriptions display the precise date on which their speciﬁc plan id begins.

If a customer downgrades from a pro plan or cancels their subscription — the higher program will remain in place until

the period expires — the start date in the subscriptions table will reﬂect the date the actual plan changes.

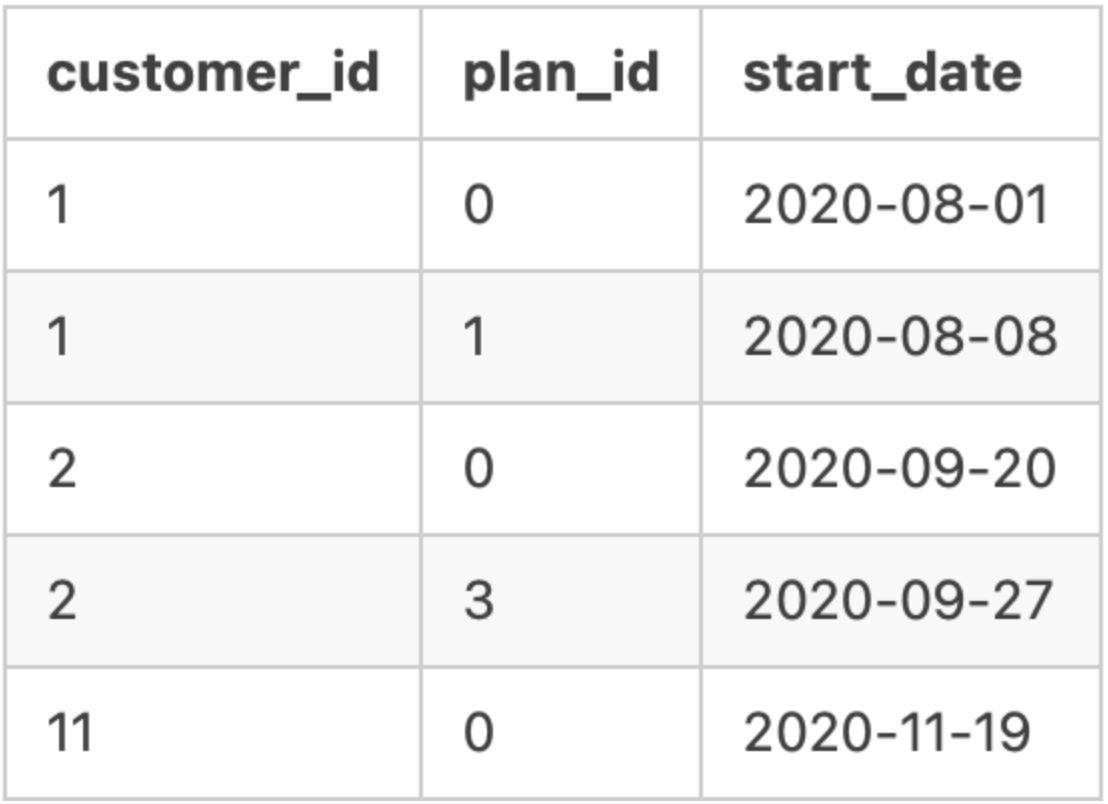
When clients upgrade their account from a basic plan to a pro or annual pro plan, the higher plan becomes active

immediately.

When customers cancel their subscription, they will retain access until the end of their current billing cycle, but the

start date will be the day they opted to quit their service.

# Table ‘subscriptions’ Description (contd.)



# Database

The database can be accessed here:

<https://www.db-fiddle.com/f/jbahqhW5AQwqV1RZ2xExEz/0>

**Problem Statement - 1**

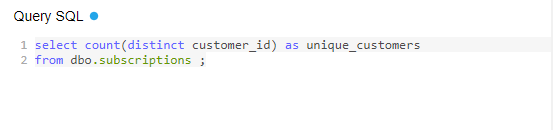
**How many customers has Foodie-Fi ever had?**

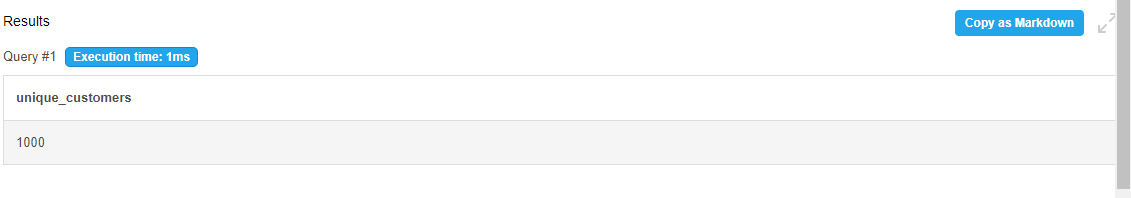
Solution - 1

SELECT

COUNT(DISTINCT customer\_id) AS unique\_customer

FROM dbo.subscriptions;





**Problem Statement - 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.**

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

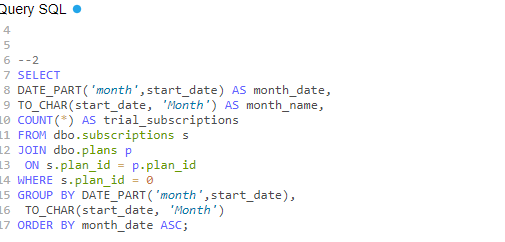
ON s.plan\_id = p.plan\_id

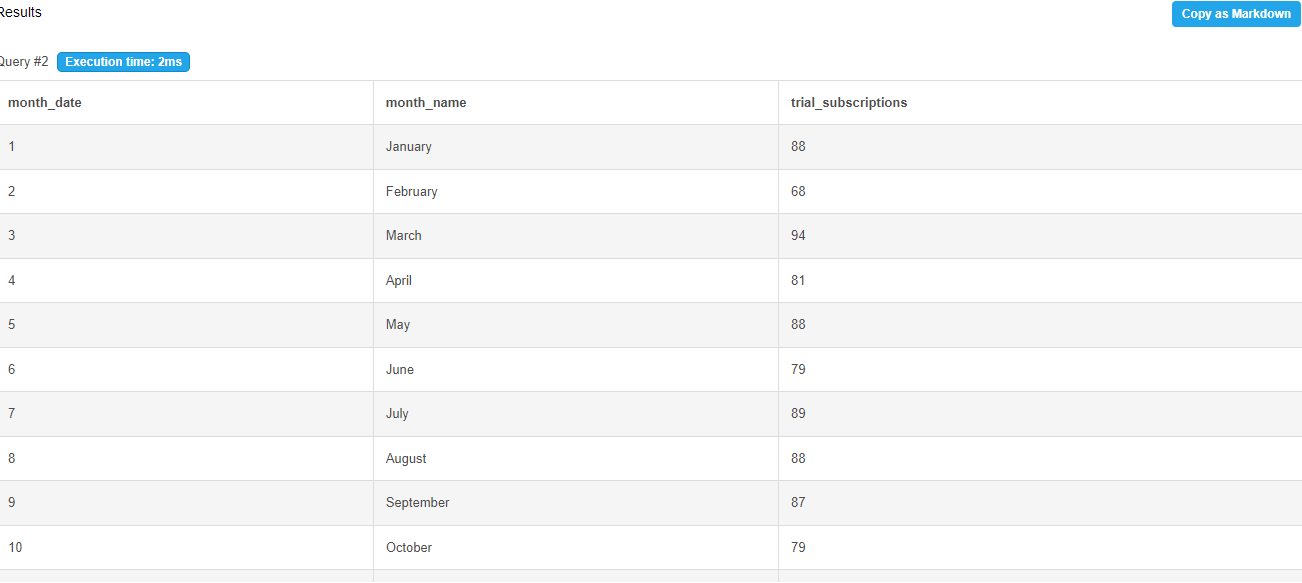
WHERE s.plan\_id = 0

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

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

ORDER BY month\_date ASC;







**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

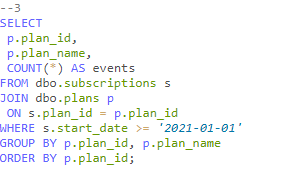
JOIN dbo.plans p

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;





**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)

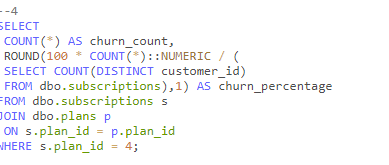
FROM dbo.subscriptions),1) AS churn\_percentage

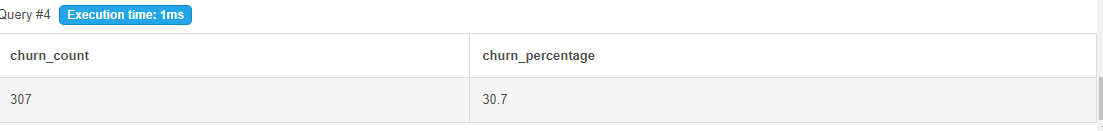
FROM dbo.subscriptions s

JOIN dbo.plans p

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

WHERE s.plan\_id = 4;





**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

Solution - 5

JOIN dbo.plans p

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

SELECT

COUNT(\*) AS churn\_count,

ROUND(100 \* COUNT(\*) / (

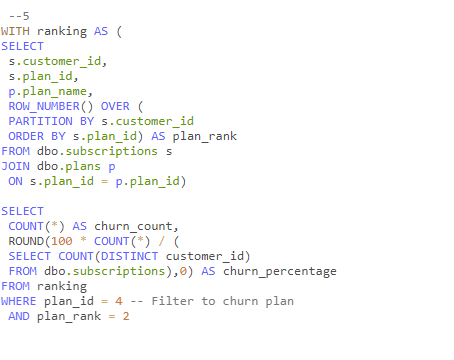
SELECT COUNT(DISTINCT customer\_id)

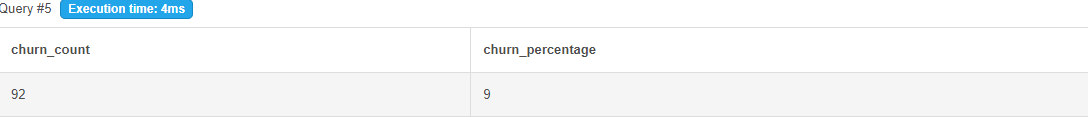
FROM dbo.subscriptions),0) AS churn\_percentage

FROM ranking

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

AND plan\_rank = 2

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**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)

Solution - 6

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

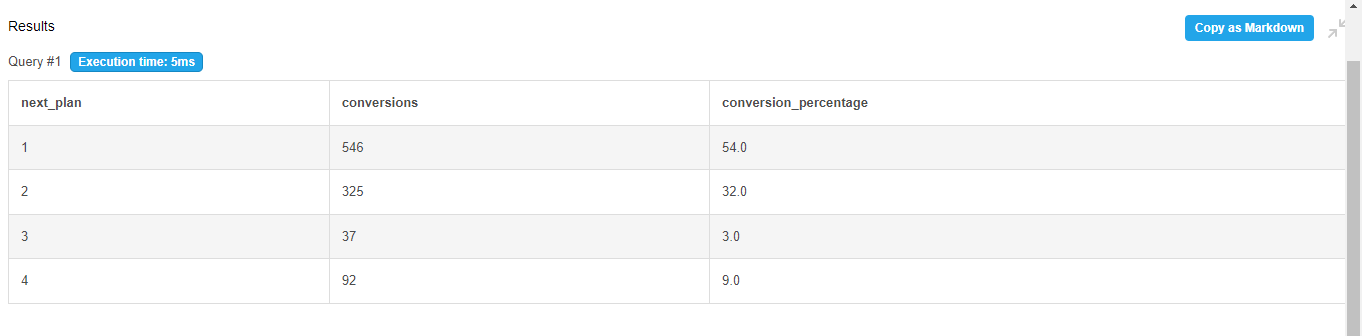
WHERE next\_plan IS NOT NULL

AND plan\_id = 0

GROUP BY next\_plan

ORDER BY next\_plan;





**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\_date

FROM dbo.subscriptions

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

),

Solution - 7

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)

Solution - 7

SELECT plan\_id, customers,

ROUND(100 \* customers / (

SELECT COUNT(DISTINCT customer\_id)

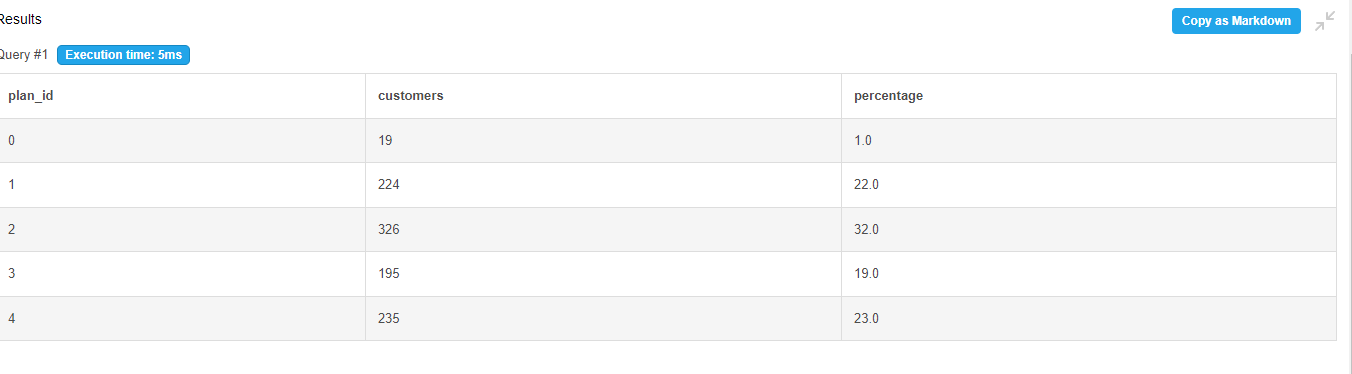
FROM dbo.subscriptions),1) AS percentage

FROM customer\_breakdown

GROUP BY plan\_id, customers

ORDER BY plan\_id;





**Problem Statement - 8**

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

Solution - 8

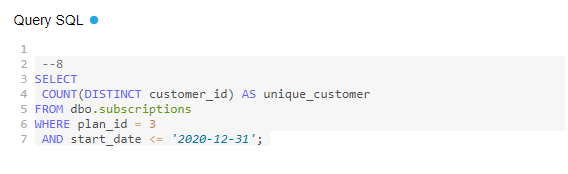
SELECT

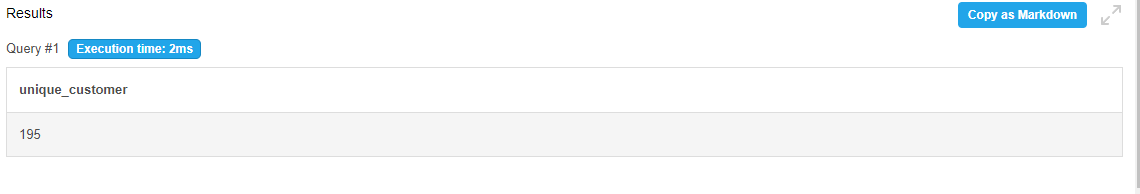
COUNT(DISTINCT customer\_id) AS unique\_customer

FROM foodie\_ﬁ.subscriptions

WHERE plan\_id = 3

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





**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

Solution - 9

(SELECT

customer\_id,

start\_date AS annual\_date

FROM dbo.subscriptions

WHERE plan\_id = 3

)

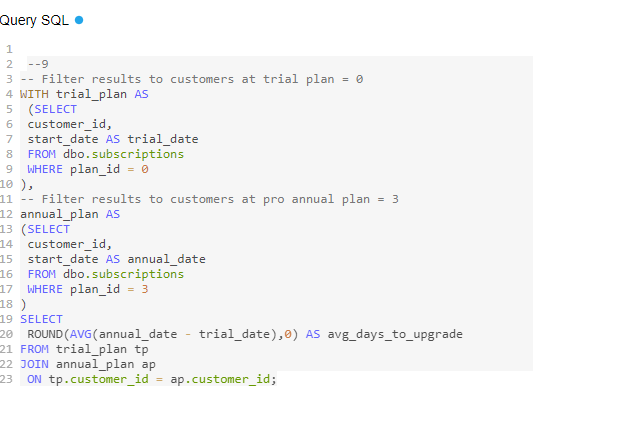
SELECT

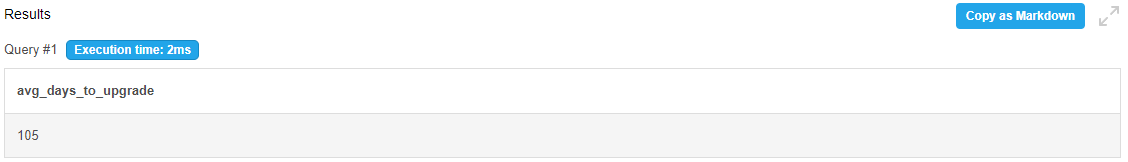
ROUND(AVG(annual\_date - trial\_date),0) AS avg\_days\_to\_upgrade

FROM trial\_plan tp

JOIN annual\_plan ap

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





**Problem Statement - 10**

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

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

Solution - 10

(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

Solution - 10

JOIN annual\_plan ap

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

SELECT

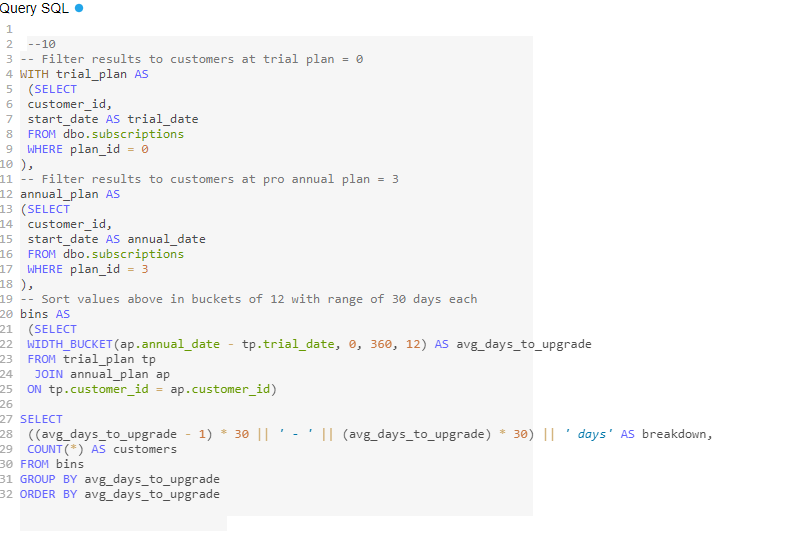
((avg\_days\_to\_upgrade - 1) \* 30 || ' - ' || (avg\_days\_to\_upgrade) \* 30) || ' days' AS breakdown,

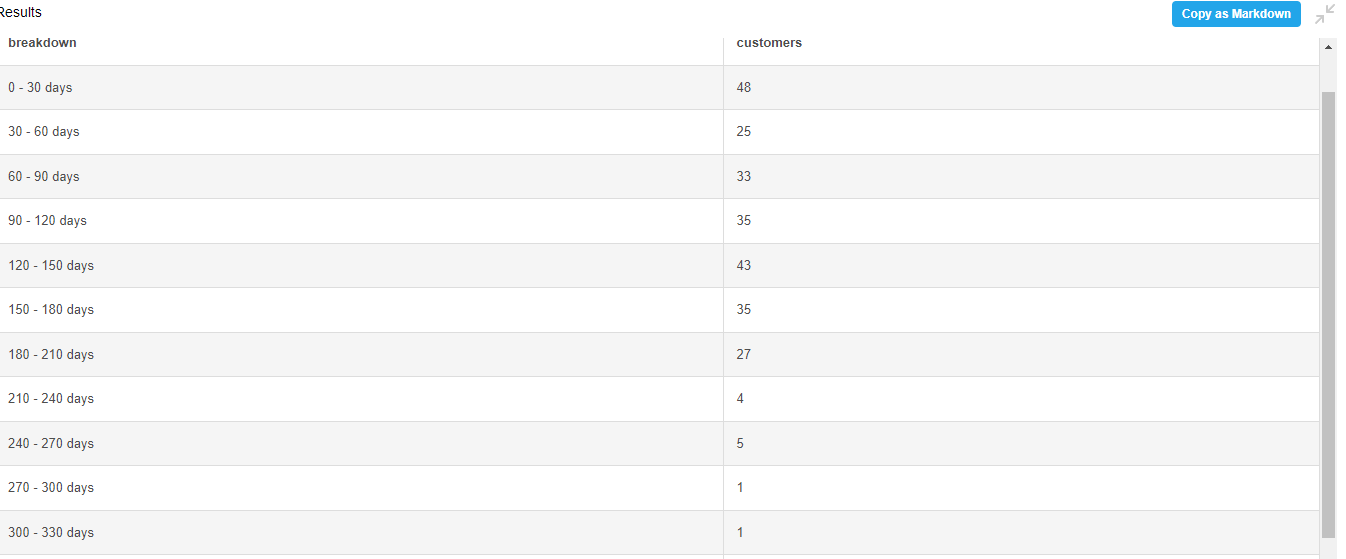
COUNT(\*) AS customers

FROM bins

GROUP BY avg\_days\_to\_upgrade

ORDER BY avg\_days\_to\_upgrade





**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)

Solution - 11

SELECT

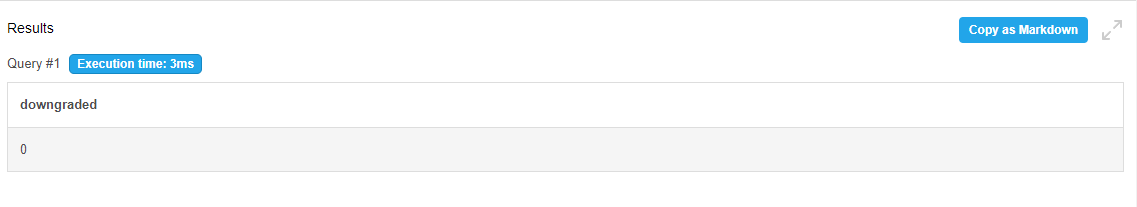
COUNT(\*) AS downgraded

FROM next\_plan\_cte

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

AND plan\_id = 2

AND next\_plan = 1;



**Interpretation**

1. There are 1000 unique customers with Foodie Fie.
2. Month Of March had the highest subscription for trial plan , followed by May , July & August
3. After the year 2020 , churn was maximum (71 events)

Pro-annual plan had maximum subscription (63 events) , Pro-monthly had slightly lesser than Pro-annual (60 events) , Basic monthly had least (8 events) , where Trial wasn’t asked for.

1. Total customer count who have churned 307 & churn rate 30.7% ( not a very good figure for the company)
2. 92 customers have churned straight after free trail period , which is 9.2%( this much can be bearable).
3. Monthly basic plan had the highest conversion (from trial plan)
4. 195 customers upgraded to annual plan in 2020.
5. On an average it takes 105 days for customers to take annual plan from the day they join.
6. 0 customer downgraded from pro-annual to pro-monthly plan.

**Analysis & Conclusion**

* **Customer Journey**

There has been total of 1000 unique customers with the company , and the total churn rate was 30.7% . Expert says for B2C SaaS the average churn rate must be somewhere between 3-6% , above that is not a good sign . Here, for Foodie Fie it is 30.7% , they need to improve this figure(bring down) , some methods could be , first ,by adding some more value to their videos (by taking feedbacks & exploring new trends), second , could be bring down the price slightly lower.

* **Payments**

Considering 9.2% churned after trail period ,monthly plan had the highest conversion (54.6%) and 0 customer downgraded from pro-annual to pro-monthly plan bringing some stability in the payment.

* **Business Performance**

The business has been doing good in terms of retaining customers at pro-annual subscription , but not overall as the total churn rate is quite high for the business.

It needs to improve in retaining the customer overall. It will also be better if the conversion for pro-annual plan is the highest.