In sprint 5, you will begin to apply your practical knowledge in Power BI using the previously used database, which contains information about a company dedicated to selling products online. During the exercises, you need to devote efforts to improving the readability of the visualizations, making sure to select the most appropriate visual representations to present the information in a clear and simple way. Don't forget to add descriptive titles to your charts to facilitate the understanding of the visualized information.

Level 1

- Exercise 1

Imports data from the previously used database. After loading the data, displays the database model in Power BI.

- Exercise 2

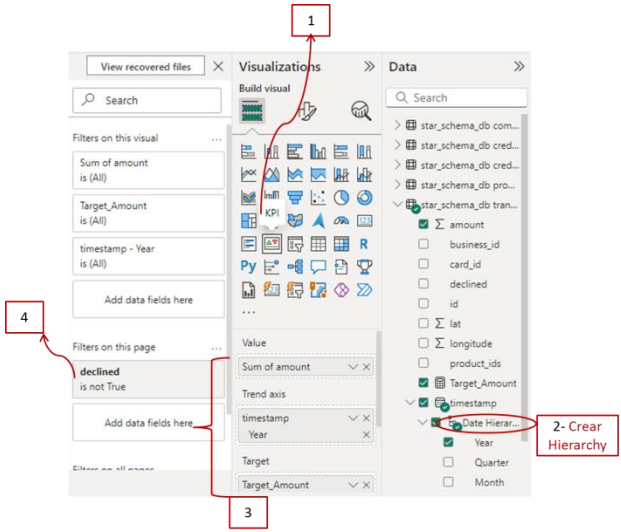
Your company is interested in evaluating the total amount of transactions made over the years. To achieve this, the creation of a key performance indicator (KPI) has been requested. The KPI should provide a clear

visualization of the business objective of achieving a total amount of €25,000 per year.

#Explicacion:

1- crear un (New Measurment): [target_amount=25000]

2- Report view> Visualizations



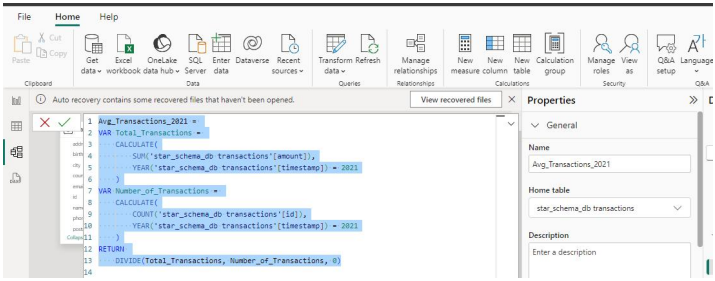
#Resultado:

- Exercise 3

Marketing asks you to create a new DAX measure that calculates the average sum of transactions made during the year 2021. Visualize this average in a meter that reflects the sales made, remember that the company has a goal of 250.

Explacion:

1- Modeling>New Measurement:



2- Report>Gauge Chart:

2-1- new measurement:

```
target_goal_250 = 250
```

2-2- new measurement:

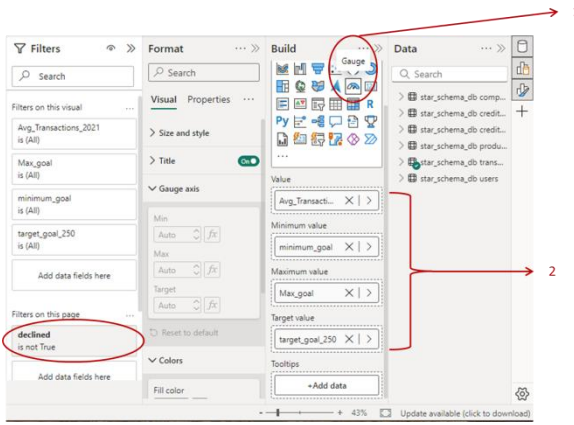
```
minimum_goal = 0
```

2-3- new measurement:

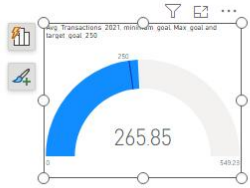
```
Max_Transactions =
    MAXX(
        ALL('star_schema_db transactions'),
        [Avg_Transactions_2021]
    ) + 50

```

3- Report view> Gauge chart:



#Resultado:



- Exercise 4

Perform the same procedure you performed in exercise 3 for the year 2022.

#Los pasos igual que en Ejercicio 3 pero solo cambie el año por 2022:

#resultado:

- Exercise 5

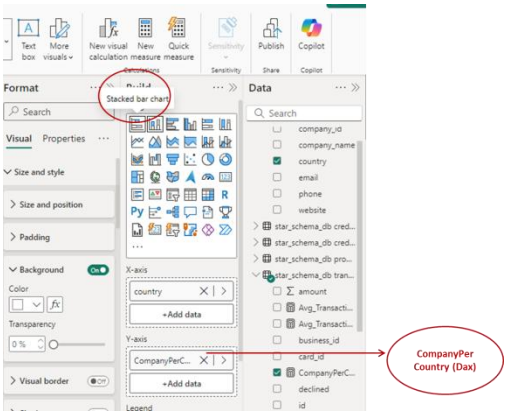
The goal of this exercise is to create a KPI that visualizes the number of companies per country participating in the transactions. The business goal is to ensure that there are at least 3 participating companies per country. To achieve this, it will be necessary to use DAX to calculate and represent this information in a clear and concise way.

#Explicacion:

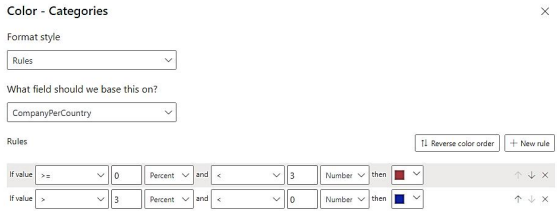
1-Modeling>New Measurment:

```
Companies_Per_Country =
VAR Active_Companies =
    CALCULATE(
        DISTINCTCOUNT('star_schema_db companies'[company_id]),
        FILTER(
            'star_schema_db companies',
            'star_schema_db companies'[company_id] IN
                VALUES('star_schema_db transactions'[business_id])
        )
    )
RETURN Active_Companies
```

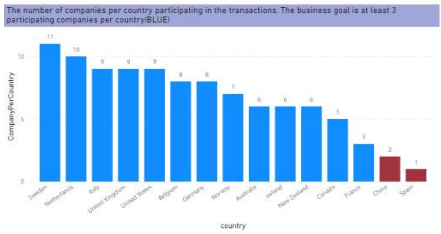
2- Report View> Stacked bar chart:



3- format de chart>columns> color (fx):



#Resultado:

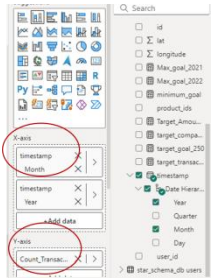


- Exercise 6

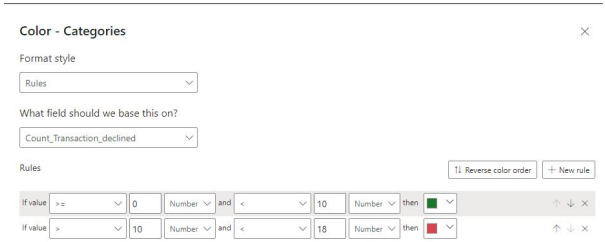
Create a new KPI that allows you to visualize the number of declined transactions over time. The company set a goal of having fewer than 10 declined transactions per month.

#Explicacion:

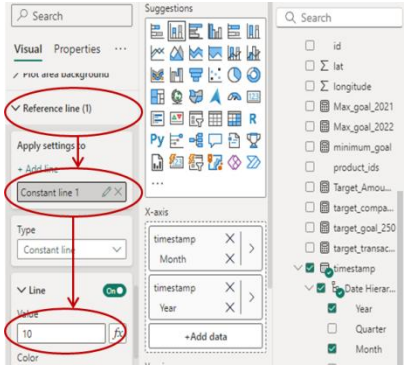
1- Report view> visualization>Stacked column chart:



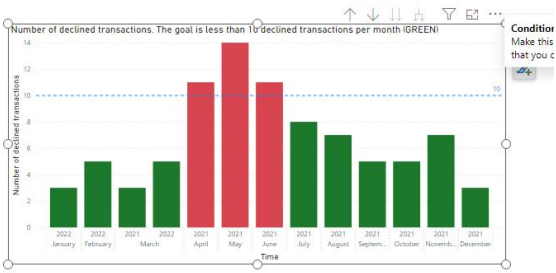
2- format>color conditional:



3- format> reference line (goal =10):



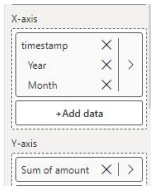
#Resultado:



- Exercise 7

Create a grouped column chart that reflects the sum of sales per month. The company's goal is to have at least 10,000 transactions per month.

#Explicacion:

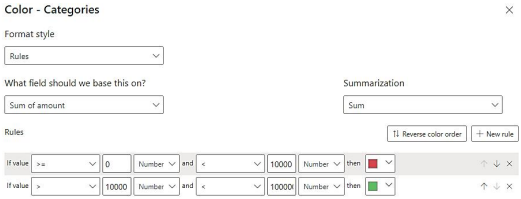


1- Report view> visualization>Stacked column chart ⇨

2- Model view> New Measurement:

```
target_transaction_monthly_SUM = 10000
```

3- format> color conditional:



4- format> reference line (goal =10000) (los pasos igual que en ejercicio anterior)

#Resultado:

- Exercise 8

In this exercise, the aim is to delve deeper into the transactions carried out by each user and present the information in a clear and understandable way. In a table, present the following information:

- Name and surname of the users (a new column will need to be created to combine this information).
- Age of users.
- Average transactions in euros.
- Average transactions in dollars (conversion: 1 euro equals 1.08 dollars).

The necessary changes must be made to identify users who had an average of 300 or more euros and 320 or more dollars in their transactions.

#Explicacion:

1- Model view> New column:

```
full_name = ‘star_schema_db users’[name] & “ “ & ‘star_schema_db users’[surname]
```

2- Model view>New Measurement:

(antes, hay que cambiar el tipo de dato de birth_date a Date)

```
User_Age = DATEDIFF(SELECTEDVALUE('star_schema_db users'[birth_date]), TODAY(), YEAR)
```

Sin selectedvalue da error!!

3- Model view> New Measurement:

```
Avg_Transactions_EUR =
CALCULATE(AVERAGE('star_schema_db transactions'[amount])
```

4- Model view> New Measurement:

```
Avg_Transactions_USD =
[Avg_Transactions_EUR] * 1.08
```

4- Model view>New Measurement:

```
High_Value_User =

IF(

    [Avg_Transactions_EUR] >= 300 || [Avg_Transactions_USD] >= 320,

    "High Value",

    "Normal")
```

#Resultado:

full_name	User_Age	Avg_Transactions_EUR	Avg_Transactions_USD	High_Value_User
Abra Doyle	39			Normal
Acton Gallegos	36	283.15	305.80	Normal
Aiko Chaney	39	278.36	300.62	Normal
Ainsley Herrera	29	105.51	113.95	Normal
Alan Vazquez	29	257.86	278.48	Normal
Alika Kinney	29	394.59	426.16	High Value
Alika Valdez	35			Normal
Allegra Stanton	35			Normal
Allen Calhoun	38	286.60	309.53	Normal
Allistair Holmes	35			Normal
Amal Kennedy	39	411.64	444.57	High Value
Amber Blevins	46	193.33	208.80	Normal
Amelia Valenzuela	39	321.39	347.10	High Value
Andrew Strong	28	375.48	405.51	High Value
Aquila Haley	29			Normal
Aquila Strickland	43			Normal
Aretha Chang	27			Normal
Astra Alexander	42			Normal
Astra Baldwin	26	472.18	509.95	High Value
Athena Malone	34	162.56	175.56	Normal
Avye Key	38	396.04	427.72	High Value
Barrett Andrews	30			Normal
Benedict Wheeler	26			Normal
Bert Juarez	37	381.17	411.66	High Value
Bertha Sloan	29	58.16	62.81	Normal
Beverly Burt	29	82.43	89.02	Normal

- Exercise 9

Write a short paragraph, no more than 50 words, explaining the meaning of the figures presented in the Power BI visualizations. You can interpret the data in general or focus on a specific country. Accompany your interpretations with a screenshot of the visualizations you will analyze.

Level 2

Exercise 1

From the marketing area they need to examine the monthly trend of transactions carried out in 2021, specifically, they want to know the variation of transactions depending on the month. Remember to visualize the business goal of achieving at least €12,500 in transactions per month. In this exercise, it will be necessary to identify the months in which the established goal was not achieved. If necessary, you can perform two visualizations.

#Explicacion:

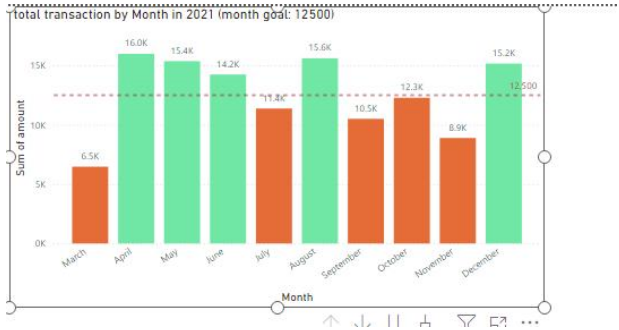
1- Report view> stacked Column Chart ⇨

2- Filters> year (basic filter): 2021

3- Format> Reference line> add line (type: Y-Axis constant) & value:

4- Format> color conditional (If sum o amount>12500: green else: Red)

#Resultado:



Exercise 2

In your assignment, you want to gain a deeper understanding of transactions in Germany. Therefore, you are asked to develop DAX measures to create visualizations that highlight the average sales in Germany. Keep in mind that the company's goal is to achieve a figure of 250 euros per year. Configure the visualization so that the minimum value is 100 and the maximum is 350, thus providing a more effective representation of the information.

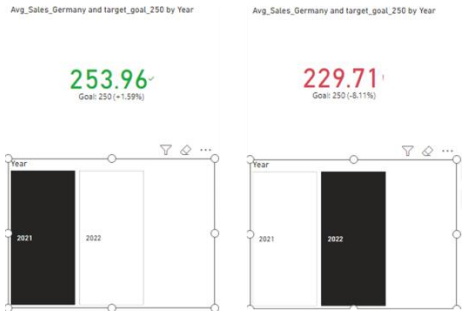
#Explicacion:

1- Model view> New Measurement:

```
1 Avg_Sales_Germany = COALESCE(
2 CALCULATE(AVERAGE('star_schema_db transactions'[amount]), 'star_schema_db companies'[country]
  = "Germany"),0)
```

2- Report view> Visualization> KPI

#Resultado:



Exercise 3

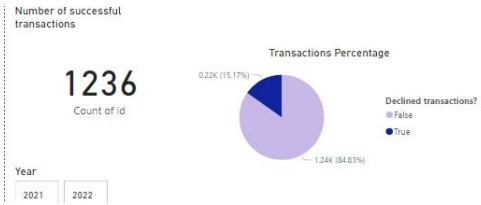
Write a short paragraph, maximum 25 words, indicating in which month the proposed objective of exercise 1 was not met.

Level 3

Exercise 1

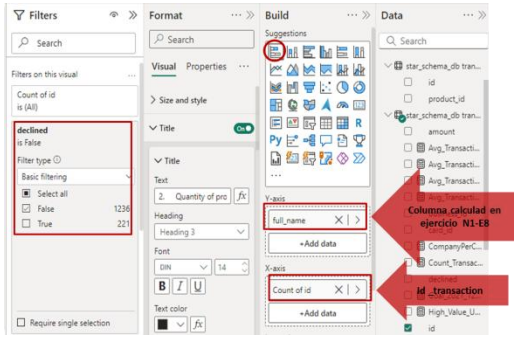
The marketing section wants to delve deeper into the transactions carried out by users. Consequently, you are asked to create several visualizations that include:

1. The key statistical measures of the variables that you consider relevant to understanding the transactions carried out by users.

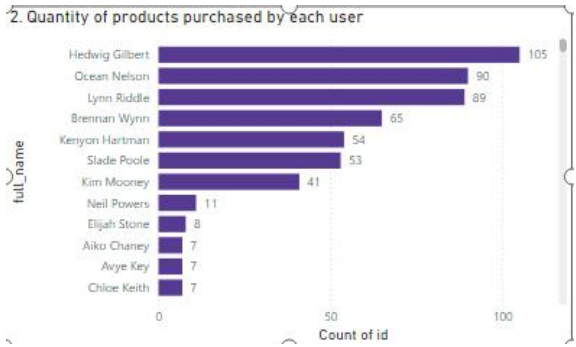


2. Quantity of products purchased by each user.

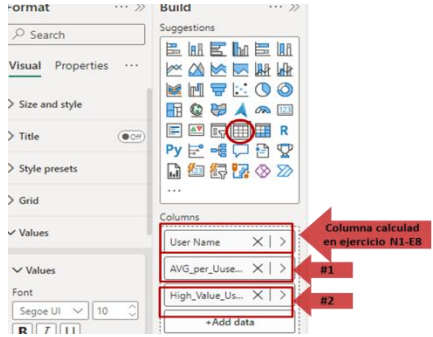
#Explicacion:



#Resultado:



3. Average purchases made per user, displays which users have an average of purchases greater than 150 and which do not.



#1:

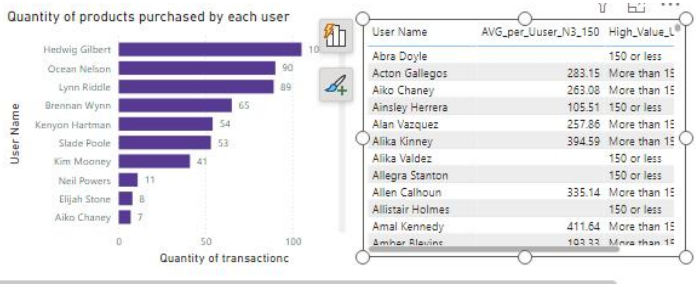
```
AVG_per_Uuser_N3_150 =
CALCULATE(
    AVERAGE('star_schema_db transactions'[amount]), 'star_schema_db users'[id])

```

#2:

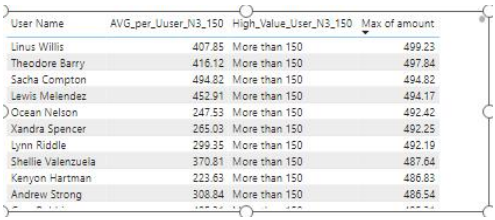
```
High_Value_User_N3_150 =
IF(
    [AVG_per_Uuser_N3_150] >= 150,
    "More than 150",
    "150 or less"
)
```

#Resultado:



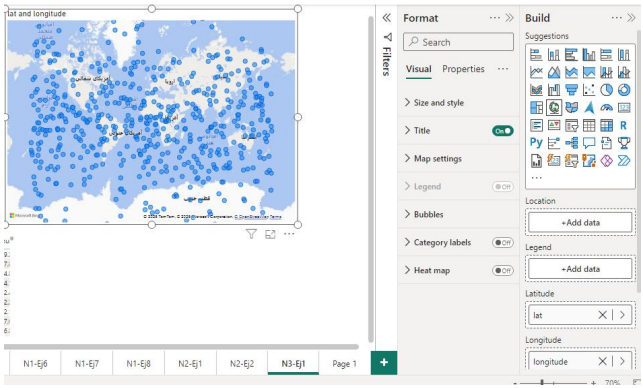
4. Shows the price of the most expensive product purchased by each user.

#añadir otra columna en la table para MAX_amount de cada usuario:



User Name	AVG_per_Uuser_N3_150	High_Value_User_N3_150	Max of amount
Linus Willis	407.85	More than 150	499.23
Theodore Barry	416.12	More than 150	497.84
Sacha Compton	494.82	More than 150	494.82
Lewis Melendez	452.91	More than 150	494.17
Ocean Nelson	247.53	More than 150	492.42
Xandra Spencer	265.03	More than 150	492.25
Lynn Riddle	299.35	More than 150	492.19
Shellie Valenzuela	370.81	More than 150	487.64
Kenyon Hartman	223.63	More than 150	486.83
Andrew Strong	308.84	More than 150	486.54

5. View the geographic distribution of users.



In this activity, you will need to make the necessary adjustments to each graph to improve readability and understanding. In completing this task, you are expected to carefully evaluate which variables are relevant to effectively convey the required information.