DATA ANALYST: SQL PORTFOLIO

PREPARED BY

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Professional Background

Hello, I am Ogidi Winsome Ayomikun, an adaptable and process-oriented data analyst with experience in discovering new and meaningful trends and patterns that can be used to inform decision making using my analytical and methodical skills. I am a 400-level student of the University of Lagos studying Medical Laboratory Science. I have actively been involved in volunteering activities, several data projects and added extensive value to various organizations I have been opportune to intern with.

I have gotten certifications from organizations and communities like Cybersafe Foundation, FestManLearning™ Hub, Coursera, DataCamp, Dataquest, Sidehustle, Sololearn. Currently I am an Associate Data Analyst Intern at Neodocto undergoing more training and learning to use more analytical tools.

I have proven problem solving skills and can communicate effectively making sure company's set goals and targets are attained. I am deft in researches, thinking critically, brainstorming, teamwork and introducing new practices or making old ones better. I am proficient in SQL, MS Excel, Microsoft Offices, Tableau, Google Docs to make data driven decisions and recommendations. I carefully prepare data, clean data, analyze data and share meaningful insights by creating visuals that bring data to life. I am a self-starter and have the follow-through and positive attitude that will help organizations develop actionable strategic insights.

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Introduction

Title: Education for All Charity Project

'Being a Data Analyst working for the charity organization, "**Education for All"**. I was asked by the Head of Fundraising to present the data on donor insights and donation rates to enhance, inform decision making regarding the fundraising strategy and increase donations for the following year. I was given two datasets namely EFO_Donation_Data and EFO_Donor_Data to work with; containing information about the Donors

I was given the following objectives within the Fundraising team:

- Increase the number of donors in our database.
- Increase the donation frequency of donors.
- Increase the value of donations in our database.

I was expected to explore and present insights to help the team recognize their current position, inform my fundraising strategy and increase donations in two weeks time for the following year.
Firstly, I had to identify the business problem and understand it. To do this I used Root Cause Analysis : The 5 Whys. Furthermore I queried the data using SQL and its commands to locate specific information from the datasets and extract insights. I then created reports and shared these insights to the team using Tableau as a visualization tool to make the data easier to read and understand, highlighting the trends.

At the end of the task I tabled my actionable and meaningful insights; I was able to gather these insights gained from the data given, make data-driven decisions and recommendations to boost the fundraising strategy and targets for the following year leading to increased donations.

Root Cause Analysis

A Root cause analysis (RCA) is a process to help people discover and understand the real causes behind a problem in order to learn why that problem arose in the first place. RCA assumes that it is much more effective to systematically prevent and solve for underlying issues rather than just treating specific and impromptu symptoms and putting out fires which is the just finding solution for the problem only.
It seeks to identify the origin of a problem using specific set of steps, with associated tools, to find the primary cause of the problem, so that you can:

- Determine what happened.
- Determine why it happened.
- Figure out what to do to reduce the likelihood that it will happen again or to repeat success.

B The Business problem for the **'Education for All'** Charity Organization was solved using Root Cause Analysis.

- Business problem: The Charity Organization; **'Education for All'** is not meeting its response donation target in terms of both the number of donors and the value of donation

What is happening?
There is a trend in the datasets given, the highest donation is coming from recurrent yet a smaller scale of donors as compared to the total number of donors. Donation is based on the donation frequency.

Why?
The larger scale of donations is coming from one time donors or individuals that donate once in a year.

Why?
The mission of the charity is not being properly conveyed nor communicated to these category of donors (one-time and yearly).

Why?
The donor data comprises majority of individuals that do not have a second language.

Why?
There is no laid out plan and strategy to effectively communicate the goal of the charity to donors with different languages in this category.

We can see that the root cause of the underlying issue of the charity not meeting its donation target has been discovered as the absence of strategies to effectively communicate the target goal of the company as most of the donors who have contributed the least communicate with different languages.

Insights

Data Querying - SQL

1 --I added a new column of the calculated actual donations (total_donation) received in the year as well as CREATED a new table "final_Donation_Data". The new table contains all data in both the "Donation_Data" and "Donor_Data2" table, and a new column that stores the total donation per donor using CASE statement. This was done using a subquery to return data that will be used in the mainquery as a condition and also joining the "Donation_Data" table with the "Donor_Data2" table using the "id" column as the common value on both tables. This provides the total donation by donors based on their donation frequency.

```
CREATE TABLE final_Donation_Data AS
SELECT *,
    (CASE
        WHEN donation_frequency = 'Weekly' THEN donation * 52
        WHEN donation_frequency = 'Monthly' THEN donation * 12
         ELSE donation * 1
    END) AS total_donation
FROM
     (SELECT *
     FROM Donation_Data
     INNER JOIN Donor_Data2
     ON Donation_Data.id = Donor_Data2.id
 );
```

Insights

2 --To get the highest amount of total donations and their donation frequency as well as the lowest total donations. This revealed that the total highest donations came from 'Weekly' followed by the Monthly donors while the total lowest donations came from the One -time donors(donation frequency = ONCE), Also shows that the donation frequency with the highest number of donors are one-time donors in the year the organization received the donations in the datasets given.

```
SELECT donation_frequency,
COUNT(id) AS no_of_donors,
SUM(total_donation)
FROM final_Donation_Data
GROUP BY donation_frequency
ORDER BY SUM(total_donation) DESC;
```

3 --In Order to gather deeper insights on donors that donate 'Yearly' or 'Once' I used the WHERE clause as a condition to restrict the data I want to request from the dataset as well as comparison operators to identify specific rows in the final_donation_Data. This gives more details on similarities and differences of the donors in this category share but I focused more on the similarities so as to find a pattern if there is.

```
SELECT first_name,
       last_name,
       car,
       university,
       second_language,
       donation_frequency,
       total_donation
FROM final_Donation_Data
WHERE donation_frequency
IN ('Once', 'Yearly')
ORDER BY donation_frequency;
```

Insights

4 --No of donors with and without a second language showed 390 donors without a second language and 133 with a second language out of 523 donors from the One-time and Yearly category.

```
SELECT SUM
    (CASE
        WHEN second_language ISNULL THEN 1
        ELSE 0
    END) AS no_of_null_values,
 COUNT(second_language) AS no_of_non_null_values
FROM final_Donation_Data
WHERE donation_frequency IN ('Once', 'Yearly');
```

5 --No of donors that have English as a second language; this showed that they are just two donors that have English as their second language and they are both Females.

```
SELECT first_name,
            last_name,
            d.car,
            gender,
            d.second_language,
            f_d.donation_frequency,
            total_donation
FROM final_Donation_Data AS f_d
JOIN Donor_Data2 AS d
ON f_d.id = d.id
WHERE f_d.donation_frequency
IN ('Once', 'Yearly')
AND d.second_language = 'English'
ORDER BY f_d.donation_frequency ;
```

ADDITIONAL OBSERVATION.

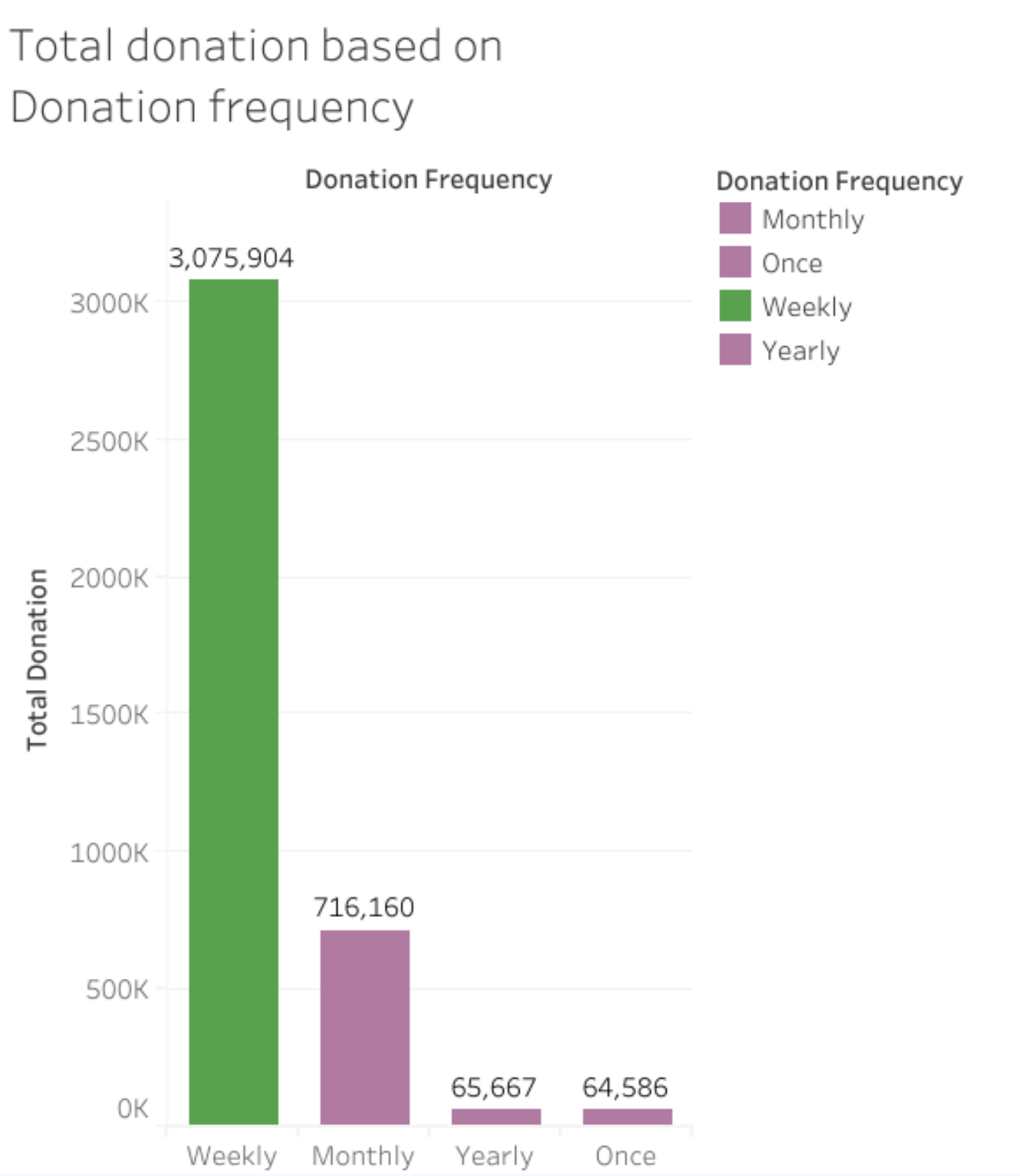
--From the entire datasets, I counted the no of donors and the calculated total donations for the year

```
SELECT
COUNT(id) AS donors,
SUM(total_donation) AS total_donation
FROM final_Donation_Data;
```

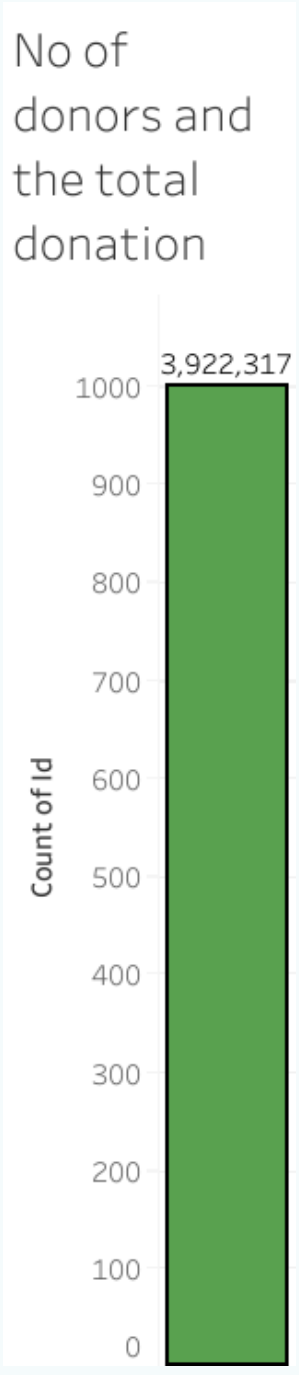
From the few queries above. the data gotten from the datasets and the new table created; the no of donors for the year was **1000** and the total donation was **$3,922,317** based on my calculations and findings.

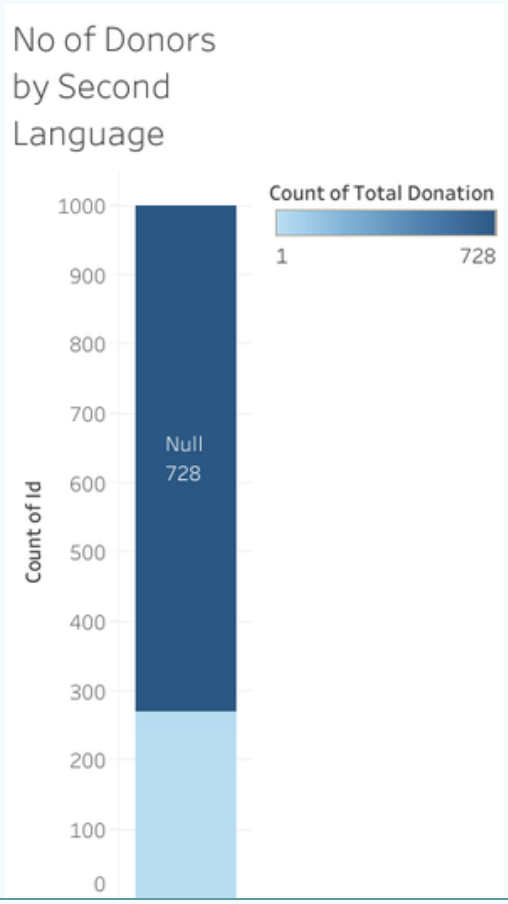
Insights

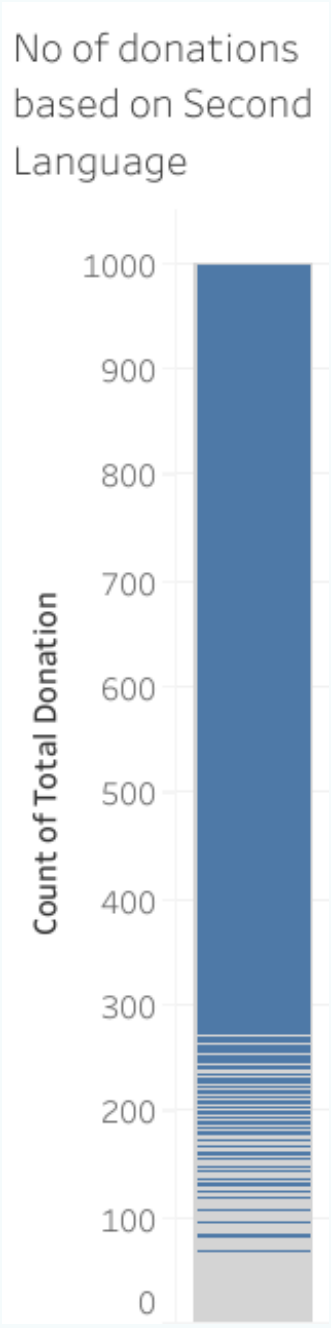
Data Visualization - Tableau



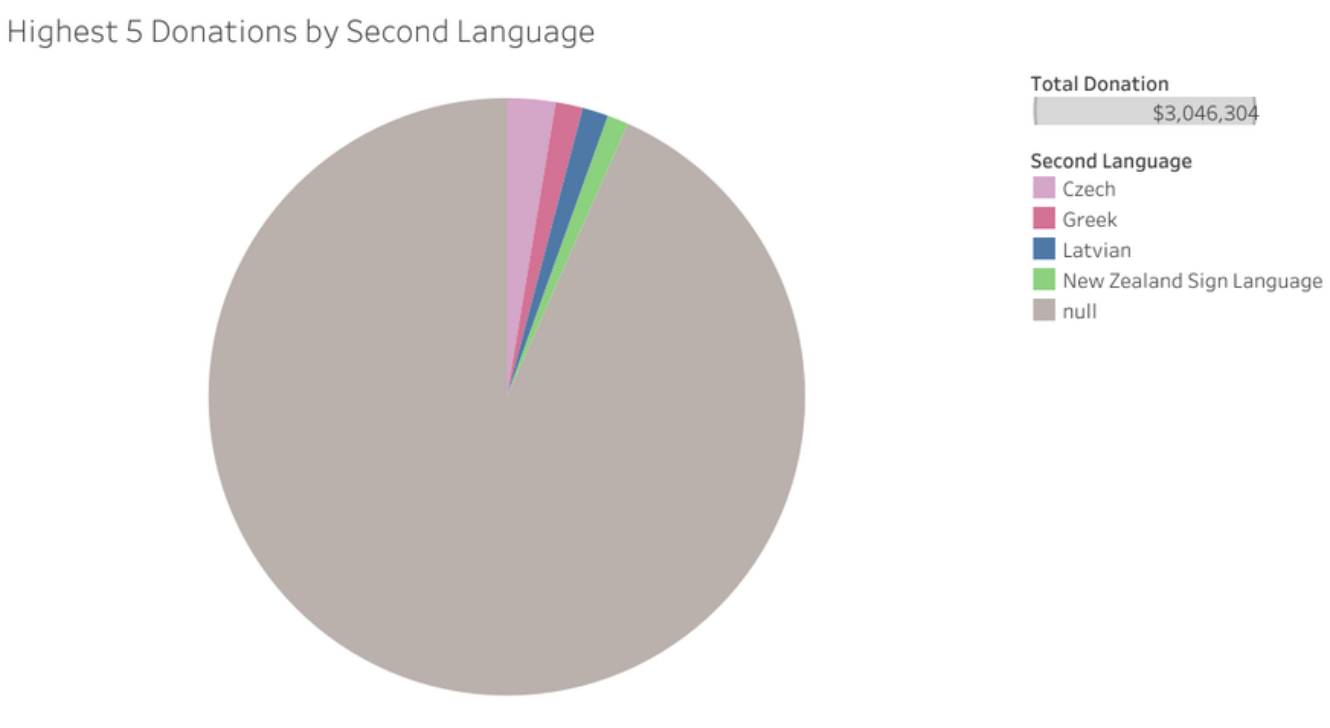
Insights

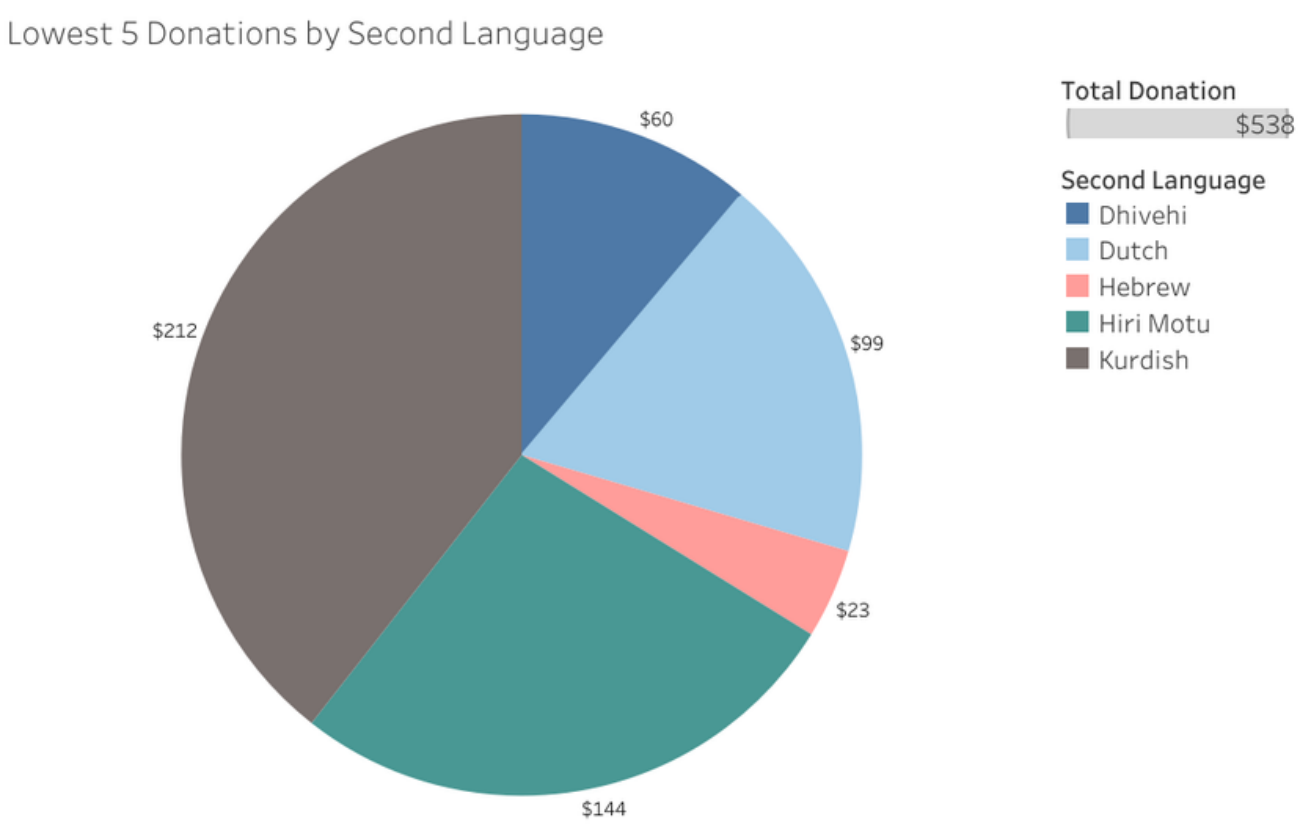

No of donors and the total donation
3,922,317
Count of Id
1000
900
800
700
600
500
400
300
200
100
0


No of Donors by Second Language
Count of Total Donation
1
728
Count of Id
Null
728
1000
900
800
700
600
500
400
300
200
100
0


No of donations based on Second Language
Count of Total Donation
1000
900
800
700
600
500
400
300
200
100
0

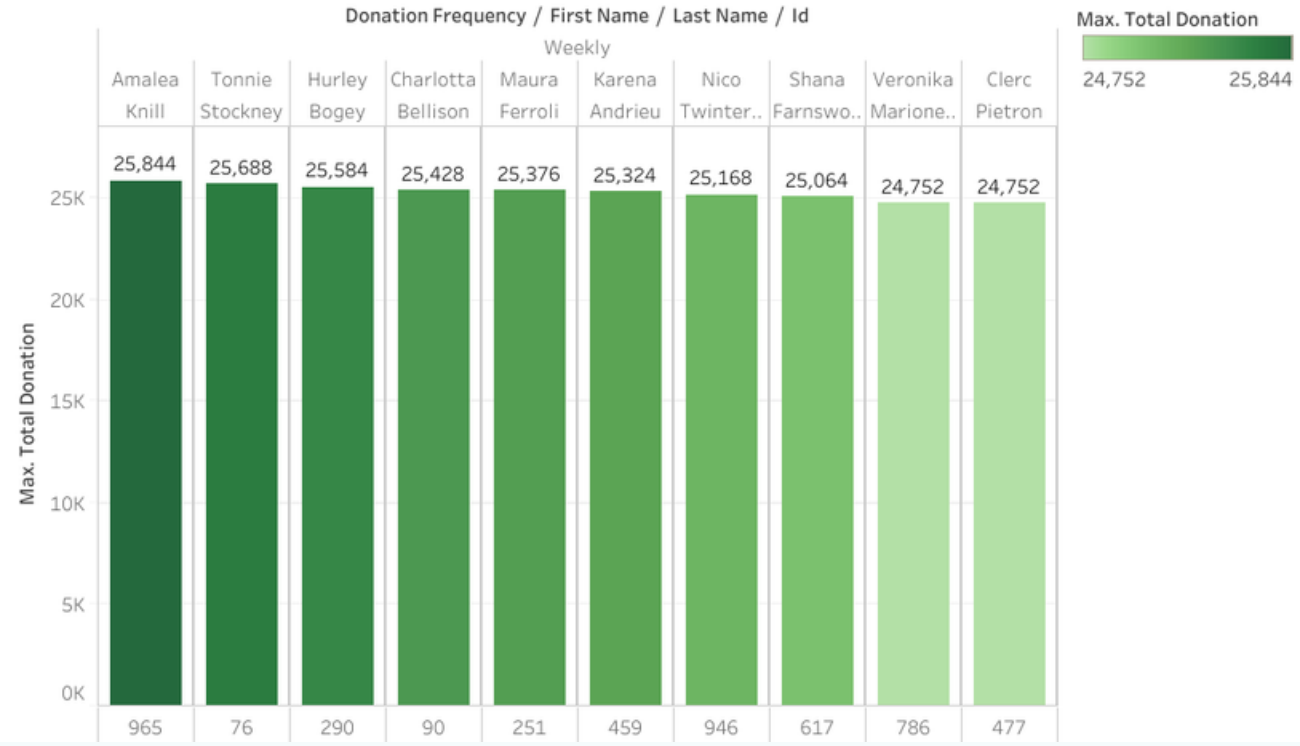
Insights


Highest 5 Donations by Second Language
Total Donation
$3,046,304
Second Language
Czech
Greek
Latvian
New Zealand Sign Language
null

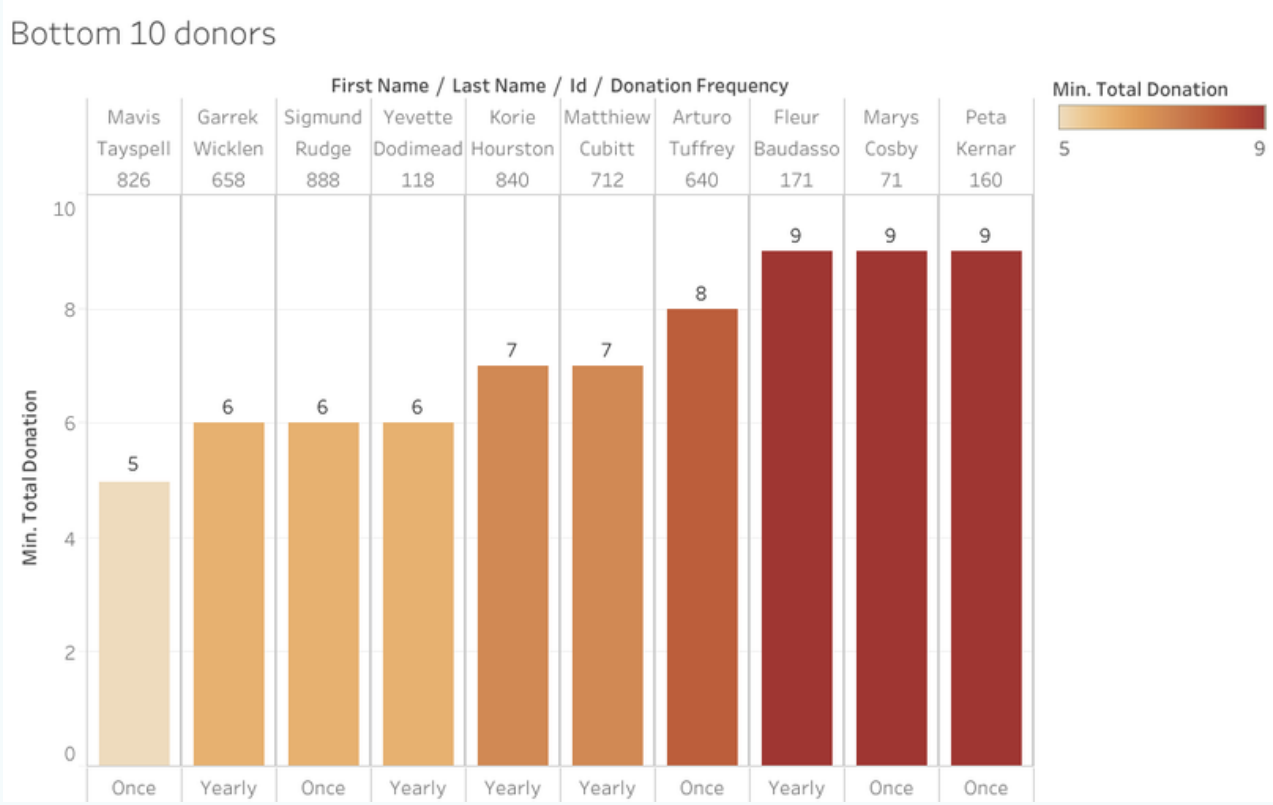

Lowest 5 Donations by Second Language
$60
$99
$23
$144
$212
Total Donation
$538
Second Language
Dhivehi
Dutch
Hebrew
Hiri Motu
Kurdish

Insights

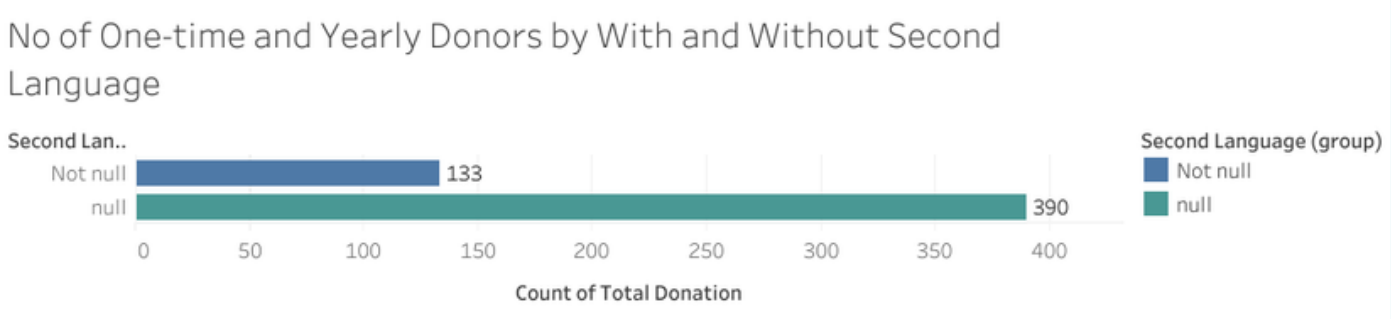
Top 10 donors and their details

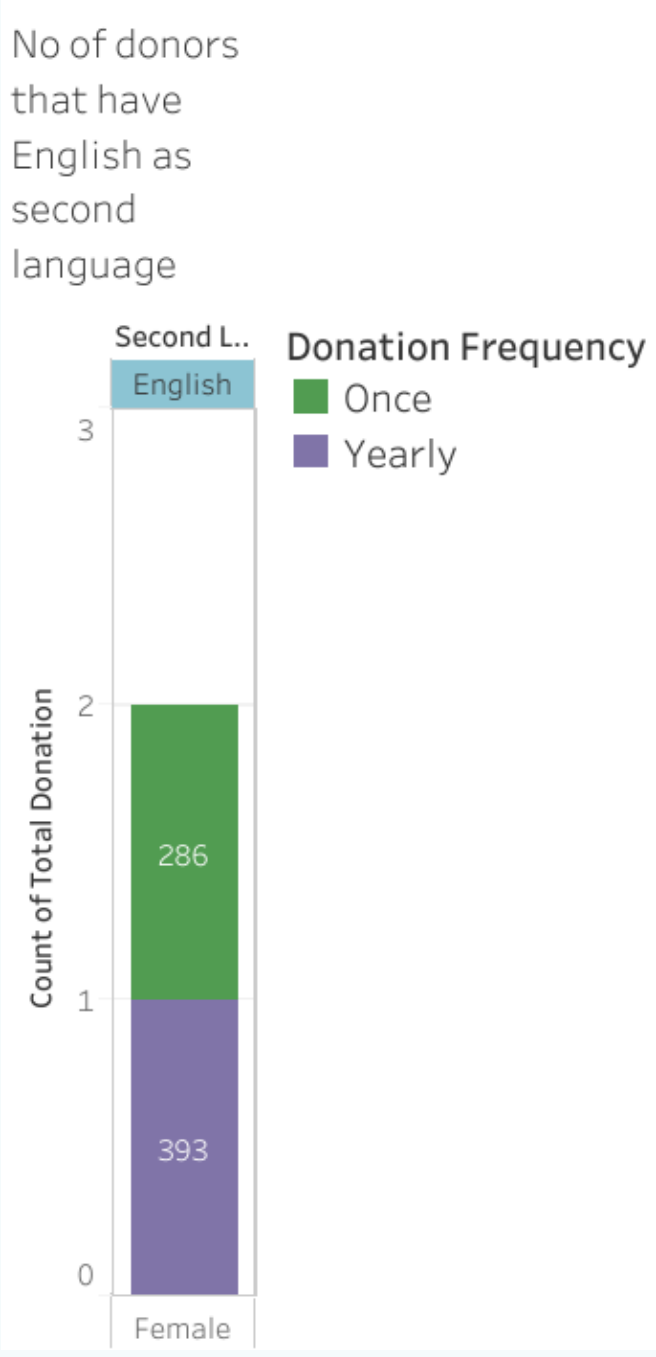


Bottom 10 donors



Insights


No of One-time and Yearly Donors by With and Without Second Language
Second Lan..
Not null
null
133
390
0
50
100
150
200
250
300
350
400
Count of Total Donation
Second Language (group)
Not null
null


No of donors that have English as second language
Second L..
English
Donation Frequency
Once
Yearly
3
2
1
0
Count of Total Donation
286
393
Female

Findings and Recommendations

The findings from this analysis show that majority of the donors bring little donations to the charity and this is because most donate once in the donating period (year). It was also discovered that majority of the non-returning donors(donation frequency of either one-time or yearly) do not have a second language, with only 2 people in this category having English as their second language. This brings up various assumptions and possibilities about their first language and how well the charity's information is being communicated to people in this category. To increase its donors and convert its current one-time donors based on the datasets to frequent donors, it is recommended that the Charity does further investigations to determine the most common languages amongst its donors. This would create further insights on whether their goal is being well understood and passed across to the population of its target market. Furthermore it is recommended that the charity amplifies its fundraising strategy by adding major inclusions such as extending its reach out with social media considerably, encouraging staffs to spread the word about the event, boosting its marketing plans by word-of-mouth, creating many more advertisement and communication strategies in order to be able to attract donors from every category in the country and far beyond.

Conclusion

"Education for all" Charity organization has the ability to achieve all its fundraising objectives in the following year. Identifying and understanding the problem and its causes is the principal stage, but these problems have to be solved, so implementing the right solutions will determine how much improvement and successes the organization will make. In this report data analytics tools, hard and soft skills are used to provide answers and recommendations to the business problem.

In the process, I got to understand the importance of using data and how it widely helps in achieving data-driven business decisions because the root cause would not have been discovered without interpreting, analyzing and going through the data. I was able to display my understanding of SQL used to query and request data from the dataset, Tableau used as a business intelligence tool for visualizing data and also my research ability was not left out in this project. It actively involved my problem solving, critical thinking and analytical skills to carry out the root cause analysis and come up with recommendations to aid business decisions.

The experience, awareness and knowledge I have gotten from working on this project will help me in knowing how to handle setbacks and in fostering my growth and exploring various other business tasks with the aim of successfully finding suitable solutions.