DATA ANALYST: SQL PORTFOLIO

PREPARED BY:

PROFESSIONAL BACKGROUND

- I am a first class graduate of Accounting from Babcock University, Ogun State, Nigeria. I am a member of the Association of Accounting Technicians West Africa (AATWA) and of the Institute of Chartered Accountants in Nigeria (ICAN).
- I started my career as an Audit Intern and over the years I have been able to transition to an Investment Professional by completing the CFA Investments Foundations Program and working with an investment company in Nigeria. A major highlight of my career has been the opportunity to manage a team of 30 with the Big 4 to conclude a quality assurance process for a client in the telecommunication industry within the agreed timeline. My work experience spans across Financial Services, Entertainment, Oil & Gas and Telecommunications industry to mention a few.
- I am skilled in utilizing Tableau, SQL, Microsoft Office and Google Tools to complete Financial & Data Analysis alongside visualizations for presentation to top management. I am a great leader, collaborator and data enthusiast. Having completed the Data Analyst 1 & 2 courses with Entrylevel, I am confident that a Data Analyst Career will be a means to challenge myself and develop my current skillset.

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INTRODUCTION

Project Background

As a Data Analyst for the Education for All Charity, I have been tasked by the Head of Fundraising to present the data on donor insights and donation rates. My objectives are to:

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

The insights gotten from the analysis of the dataset will be used to inform the fundraising strategy for the charity and increase future donations to the charity.

The Process

The data sets Donation_Data and Donor_Data were utilized to answer the business problem and gather insights on the situation. SQL commands such as: JOIN, ORDER BY, WHERE, AND, OR, SUM(), COUNT(), AVG(), & GROUP BY were used to analyze the data. Tableau was used for data visualizations. In addition, a root cause analysis was done to determine the source of the problem and the possible means to resolve it.

Business Problem

The identified problem is that Education for All has not been generating enough revenue from the donations received from donors. To gain a clear view of the problem, certain information were assessed such as: number of donors per state, total donations, donation frequency, top 20 donors etc.

ROOT CAUSE ANALYSIS

Root cause analysis (RCA) is the process of utilizing different approaches, techniques and tools to determine the causes of problems in order to identify appropriate solutions.

Process

The problem is that Education for All has not been generating enough revenue from the donations received from donors. I had to ask some questions in order to delve deeper and determine the cause of the problem. The data analysis will reveal what needs to be done to resolve the problem.

1. Why is Education for all not generating enough revenue? - Because the value of donations received has declined.
2. Why has the value of donations declined? The donation frequency and number of donors has reduced.
3. Why has the donation frequency and number of Donors reduced? - The donors retention strategy was not effective.
4. Why was the donors retention strategy not effective? The public relations team made incorrect assumptions about the factors that affected donor's choices.
5. Why did the public relations team make incorrect assumptions about factors affecting donors choices? The team did not have adequate information about donors demographic.

KEY QUESTIONS & RESULTS

1. What is the sum of total donations received from all donors? Include who the highest donor is, gender, average amount donated and total number of donations.
2. What is the value of total donations made per state? Include what state had the highest donation.
3. How often do donors donate?
4. Does the job field of donors affect how they donate? Include highest donations by job field.
5. Who are the top 20 donors? Include their state, job field, donation frequency and gender.

Results

- Education for All received a total donation of $249,085. Job field had little impact on how donors donated. The charity has a potential to grow.

INSIGHT – 1

1. **What is the value of total donations received from all donors? Include who the highest donor is, gender, amount donated and total number of donations.**

- The datasets were joined using the JOIN function. The value of total donations received was $249,085.

```
SELECT *
FROM Donation_Data
JOIN Donor_Data2
ON Donation_Data.id=Donor_Data2.id;
```

```
SELECT gender,sum(donation)
FROM Donation_Data
WHERE gender='Male' OR gender='Female'
```

```
1 SELECT SUM (donation)
2 FROM Donation_Data;
```

- The highest donor was Beverlie Andriesse, a male with a donation of $500

```
SELECT first_name, last_name, donation, gender
FROM Donation_Data
ORDER BY donation DESC
```

- The total number of donations received was 1000.

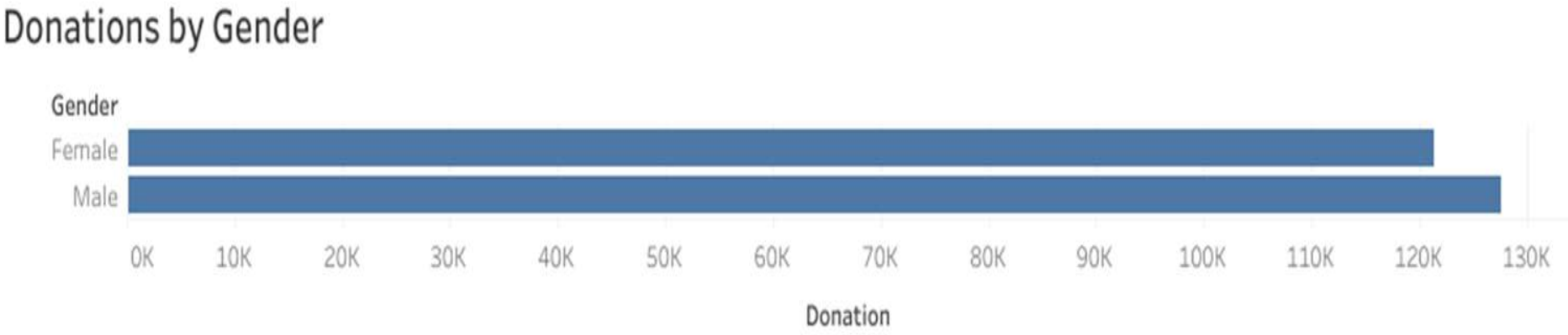
```
SELECT COUNT(donation)
FROM Donation_Data;
```

- The average donation per donor was $249

```
SELECT ROUND(avg(donation))
FROM Donation_Data;
```

```
SELECT avg(donation)
FROM Donation_Data
```

VISUALIZATION - 1



NOTE: The bar chart of the data shows that male donors donated a total of $127,628 while the female donors donated $121,457. A deep dive into the numbers can reveal the reasons for the higher donations from male donors.

INSIGHT – 2

2. What is the number of total donations made per state? Include what state had the highest and least value of donations.

a. California had the highest donations of all the states with a sum of $30,264 while Maine had the least donations of $258. To determine the total donations by state the SUM SQL command below was used.

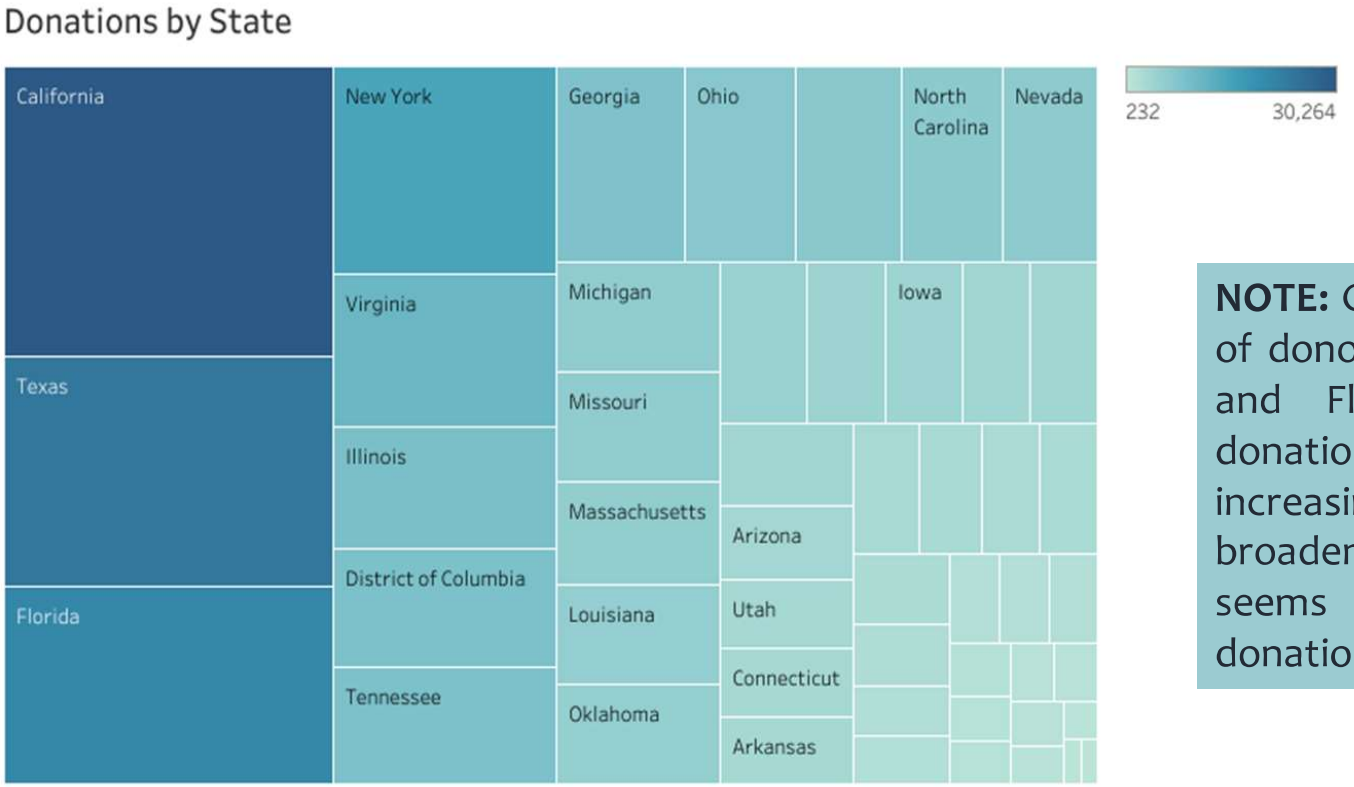
```
SELECT state, sum (donation)
FROM Donation_Data
GROUP BY state
ORDER BY donation DESC
```

```
SELECT state, sum(donation)
FROM Donation_Data
WHERE state ='California'
```

b. California had the most donations from 113 donors while Maine had just one donation. To determine the number of highest and lowest donations, the COUNT function was used below:

```
SELECT state, COUNT (donation)
FROM Donation_Data
GROUP BY state
ORDER BY COUNT (donation) DESC;
```

VISUALIZATION 2



NOTE: California had the highest number of donors and value of donations. Texas and Florida had the next highest donations. The Charity should consider increasing adverts in these states as it can broaden their donor base since there seems to be an existing culture of donations in these states.

INSIGHTS – 3

3. **How often do donors donate? Show count of donations.**

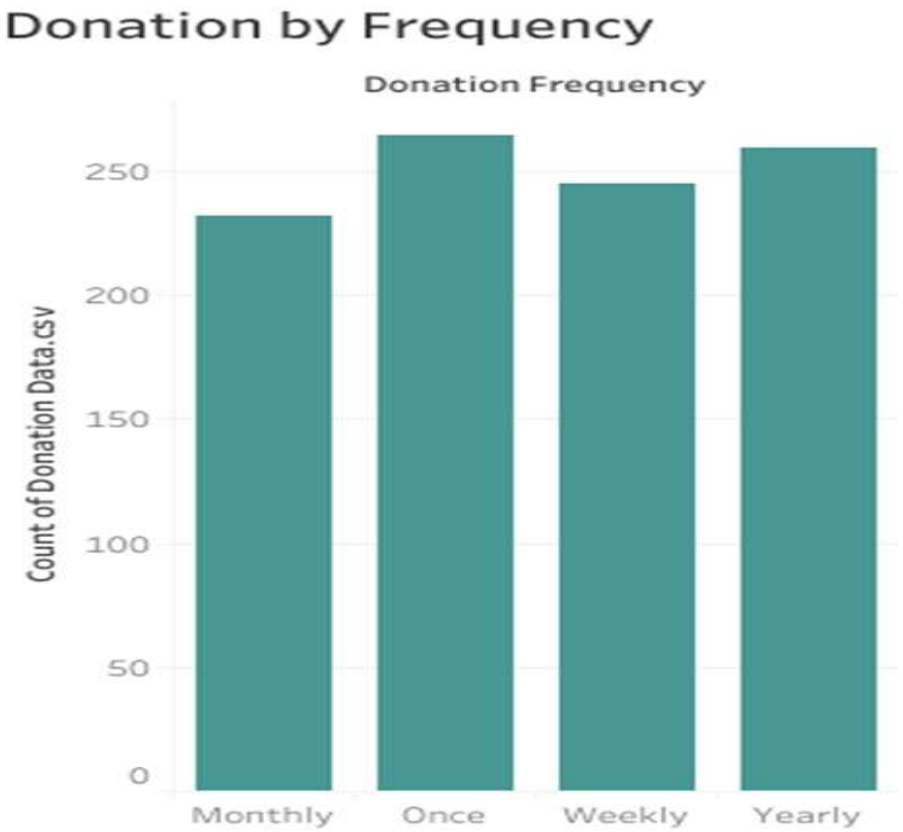
- To determine the rate at which donors donate I used the **COUNT**, **JOIN** and **GROUP BY** functions as highlighted below:

```
SELECT donation_frequency, COUNT (donation)
FROM Donation_Data
JOIN Donor_Data2
GROUP BY donation_frequency;
```

- The data revealed that donors mostly donated once (264 times). This implies that they had no further subscription or commitment to the charity. This could be one of the reasons the revenue generated from donations is no longer enough to enable the charity carry out its activities smoothly.

VISUALIZATION – 3

- The chart shows that Donors preferred to make a one-time donation. Education for all should consider a subscription system to automate the payments so those who pay annually can do so once they want to. A subscription will also encourage repeat donations.



INSIGHTS – 4

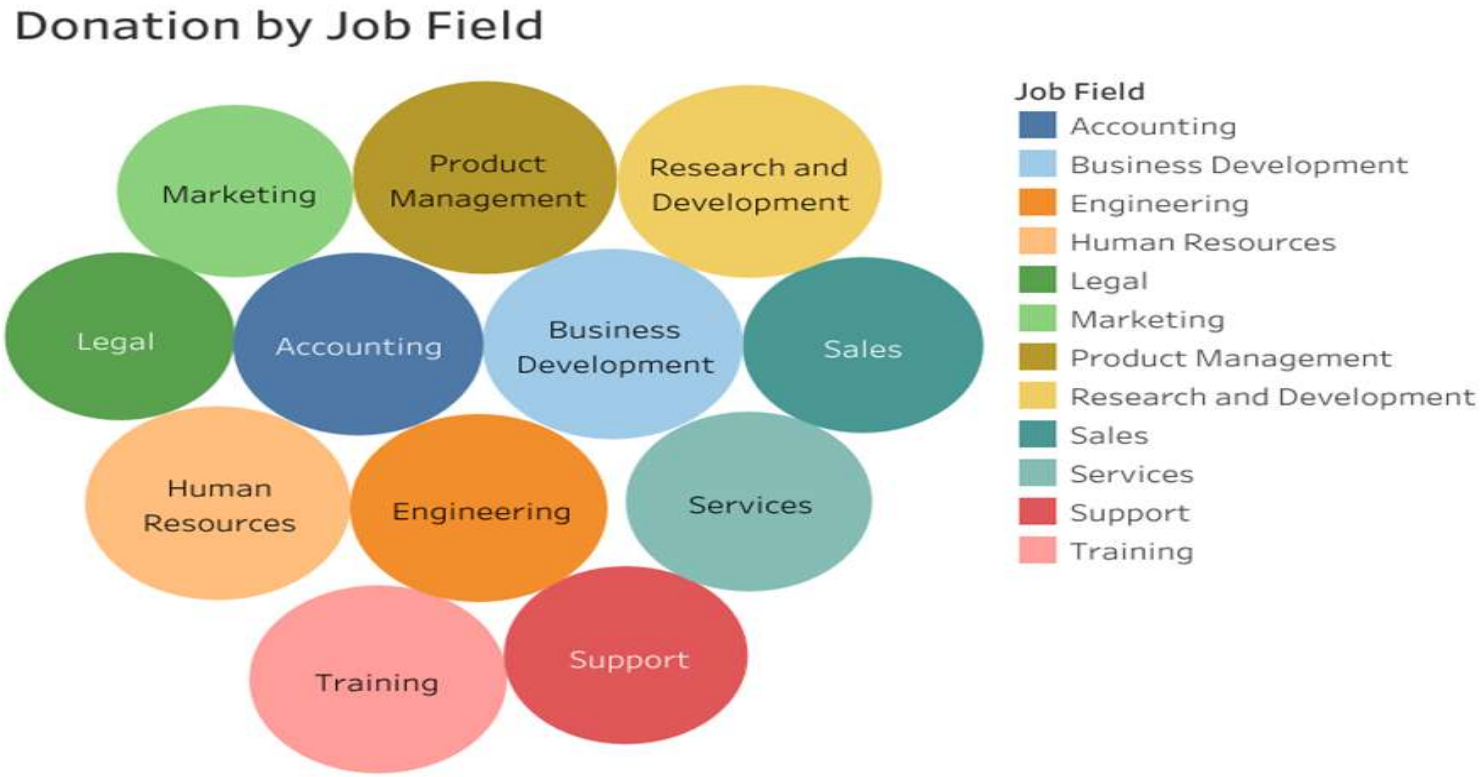
1. **Does the job field of donors affect how they donate?**

- The donors with Job field of human resources made the highest donations of $23,060 while donors in legal had the least donations of $17,309.

```
SELECT first_name, last_name, gender, job_field, donation, donation_frequency
FROM SQLite
GROUP BY job_field
ORDER BY donation DESC;
```

- Although, there is a $5,751 difference between the highest and lowest donations by job field, the % difference between them is not as significant. This could signal that the job fields do not have such a huge impact on how donors donate.

VISUALIZATION – 4



INSIGHTS – 5

5. Who are the top 10 donors? Include their state, job field, donation frequency and gender.

- Of the top 10 donors, 7 of them are males. 50% of them donate monthly and they all donated between $490 to $500

first_name	last_name	gender	state	job_field	donation	donation_frequency
Beverlie	Andriesse	Male	Michigan	Support	500	Yearly
Wallie	Leather	Male	New York	Product M	500	Monthly
Clevie	Camilletti	Female	Virginia	Legal	499	Yearly
Peder	Rilton	Female	Delaware	Sales	499	Yearly
Worthy	Le feaver	Male	Wisconsin	Sales	498	Monthly
Amalea	Knill	Male	New York	Research	497	Weekly
Tonnie	Stockney	Male	California	Support	494	Weekly
Corbett	Lansdale	Female	California	Product M	494	Monthly
Nathaniel	McGenn	Male	California	Human Re	494	Monthly
Beverlee	Camacke	Male	Maryland	Product M	493	Monthly

```
SELECT first_name, last_name, gender, state, job_field, donation, donation_frequency
FROM Donation_Data
JOIN Donor_Data2
ON Donation_Data.id=Donor_Data2.id
ORDER BY donation DESC
LIMIT 10;
```

FINDINGS

- From the root cause analysis, I ascertained that lack of adequate data about donors are a major cause for the lack of sufficient revenue.
- The analysis of the data revealed the Education for All received a total donation of $249,085. The male donors donated more than the female donors.
- California had the most donations of all the states. Maine had the least donations. Donors preferred to make donations once and yearly. A subscription system and periodic checkups will help ramp up the numbers.
- The job fields of donors has a little impact on how they donate.

RECOMMENDATIONS

1. Education for all should update the database on all donors. Having adequate information is the first step to solving the problems.
2. To increase the number of donors adverts and outreaches should be done by the charity. Volunteers would make this a success.
3. To increase the donation frequency of donors, there should be a subscription system that donors can subscribe to and make payments with. It should come with an automated payment system and reminder prompts.
4. To increase overall donations, donors behaviors and patterns should be observed. Contacts should especially be maintained for high paying donors.

CONCLUSION

- Education for all has the potential to expand its donor base and revenue generated as long as it adopts the right strategies to achieve these goals. Additional information on donors' behaviors can inform strategies to be adopted to increase the necessary figures.
- The data analysis process has enabled me to challenge my thought processes.
- In addition, I have been able to sharpen my problem detection and solving skills. Discussions with my team has also made me a better collaborator. I am more open to learning now and it is easier to support others who need my help.