Kai Dumlao

Data Acquisition Project Summary:

The following project uses the application pgAdmin4 and stake a stored database and merges that data with the table of a CSV add on file into tables within the postgreSQL database. The tables are then joined and manipulated with queries in order to output the answer to the research question I have created in part A. The data is based on telecommunication service providers and emphasizes manipulating tables in postgreSQL to create and better answer questions relevant to business needs.

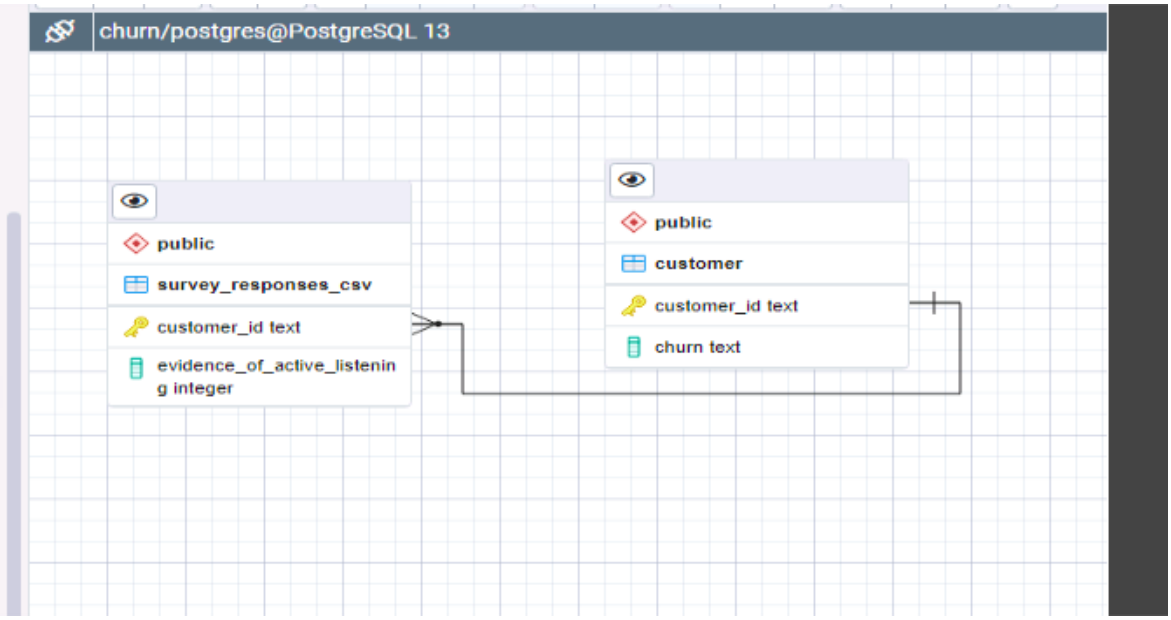
A : Question -

What is the churn rate for customers who report a score of 3 or less in their customer survey responses for rating evidence of active listening of their customer service experience?

A1: Identifying Data -

The original data needed to answer this question comes from two tables. The first table is from the original database named “customer” and needs columns “customer_id” which is a primary key and text datatype. The second column from the customer table is named “churn” which is a text datatype. The added csv table is named “Survey_Responses.csv” and uses the columns “customer_id “as a text datatype which is not null and “evidence_of_active_listening” as an integer datatype which is not null.

B: Entity Relationship Diagram -



B1: Code for the ERD -

--This query generates a table and creates the keys and constraints for the add-on csv file data to be imported into:

```
CREATE TABLE public.survey_responses_csv(
	customer_id text PRIMARY KEY,
	timely_responses integer NOT NULL,
	timely_fixes integer NOT NULL,
	timely_replacements integer NOT NULL,
	reliability integer NOT NULL,
	options integer NOT NULL,
	respectful_response integer NOT NULL,
	courteous_exchange integer NOT NULL,
	evidence_of_active_listening integer NOT NULL
);
```

B2: Loading CSV data -

--This query imports the add-on csv file into the empty table created on the SQL database:

```
COPY survey_responses_csv
FROM 'C:\LabFiles\Survey_Responses.csv'
DELIMITER ','
CSV HEADER;
```

C: SQL Query

--The code creates a cte to be used in the following query to obtain the churn rate for customers who answered the active listening question with a rating of three or less. Additionally, the query filters out ratings of 4 or higher.

```
WITH bet_tbl AS(
        SELECT c.customer_id,
                churn,
                evidence_of_active_listening
        FROM customer as c
        INNER JOIN survey_responses_csv as s
        ON c.customer_id = s.customer_id
        WHERE s.evidence_of_active_listening
        BETWEEN 1 AND 3)
SELECT
        ROUND(((SELECT COUNT(customer_id)
                FROM bet_tbl
                WHERE churn = 'Yes'))/(COUNT(customer_id)*1.00),2)*100
                  AS churn_percent
        FROM bet_tbl;
```

The result of this query creates a CTE and then divides the amount of customers who churn from the entire number of customers who score between a 1 and 3 in the evidence_of_active_listening column of the table. The output is 26 percent which is labeled as the churn_percent. This tells us that customers who feel they receive below adequate active listening during their experience with customer service, 26 percent of these individuals cancel their services. The initial research question has been answered, however, the business can better implement this information through comparison. By comparing this 26 percent to the percentage of those who give active listening a score of 4 or higher, the business could better gage if there is an actual correlation between churn rate and customer service.

D: Add-on File -

Since the data in the csv file is dependent on customers answering a review survey of this service, the file should be updated quarterly to allow time for a substantial amount for survey response collection.

D1: Explanation of Time Period

By updating the file quarterly, the telecommunication providers can take action each quarter and focus on improvements in their customer service, while demonstrating whether they can lower the churn rate by enforcing better business practices of active listening towards customers. Implementing better active listening and checking this quarterly is relevant to the business's needs as the business has demonstrated it is much more difficult to add a new customer than to keep existing customers.