iNeuron

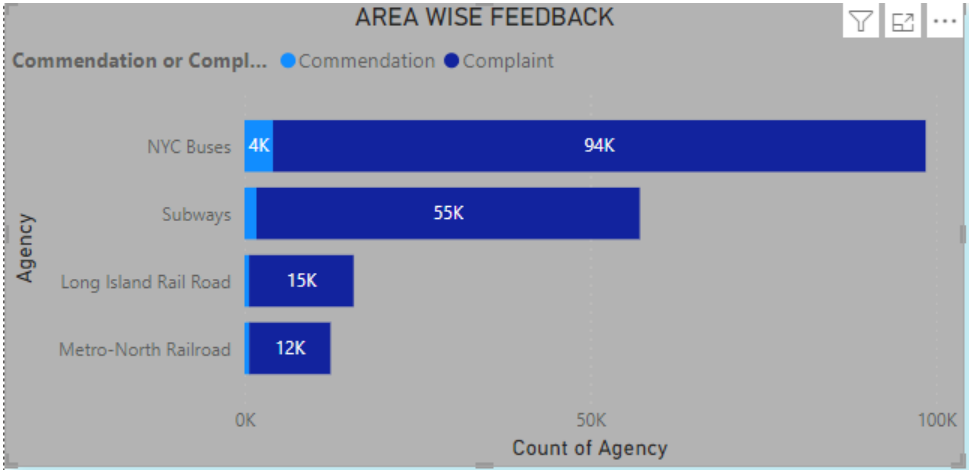
Churn Analytics

Wireframe

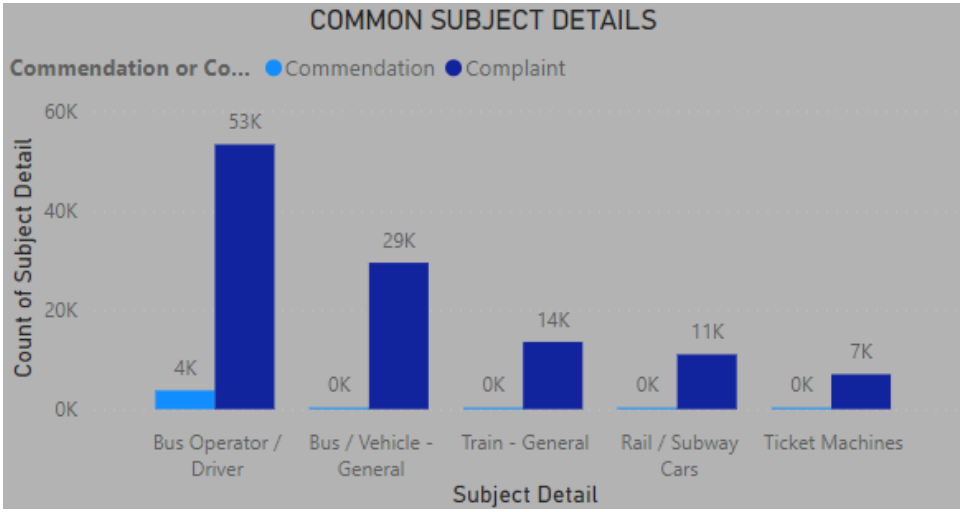
Dashboard

CUSTOMER CHURN PREDICTION ANALYSIS
CHURNING RATE
96.09%
CUST. CHURN COUNT
0K
177K
184K
Year
2014
2016
2015
2017
Quarter
1
3
2
4
AREA WISE FEEDBACK
Commendation or Compl...
Commendation
Complaint
NYC Buses
Subways
Long Island Rail Road
Metro-North Railroad
4K
94K
55K
15K
12K
Agency
0K
50K
100K
Count of Agency
COMMON SUBJECT DETAILS
Commendation or Co...
Commendation
Complaint
60K
40K
20K
0K
Count of Subject Detail
53K
4K
29K
0K
14K
0K
11K
0K
7K
0K
Bus Operator / Driver
Bus / Vehicle - General
Train - General
Rail / Subway Cars
Ticket Machines
Subject Detail
COMMON SUBJECT MATTERS
Commendation or Complaint
Commendation
Complaint
Employees
Travel Disruption / Trip Pr...
Station /Bus Stop /Facility ...
Trains
Buses
6K
69K
0K
40K
0K
29K
0K
13K
0K
7K
Subject Matter
0K
20K
40K
60K
Count of Subject Matter
COMMON ISSUE DETAILS
Commendation or Compl...
Commendation
Complaint
20K
10K
0K
Count of Issue Detail
15K
12K
9K
9K
7K
7K
7K
6K
5K
5K
Late / Delay
Rude / Inappr... Langu...
Flaggi... / Failed To Stop
Other
Reckless Driving
Impro... Functi... Repair...
Failure To Make Sched...
Late / Delay Past
Very Helpful / Frien...
Issue Detail

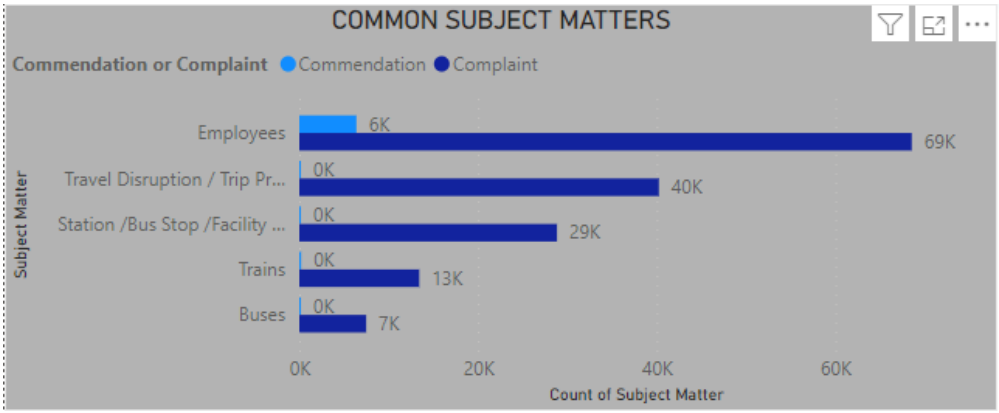
1. Agency-wise Feedbacks:



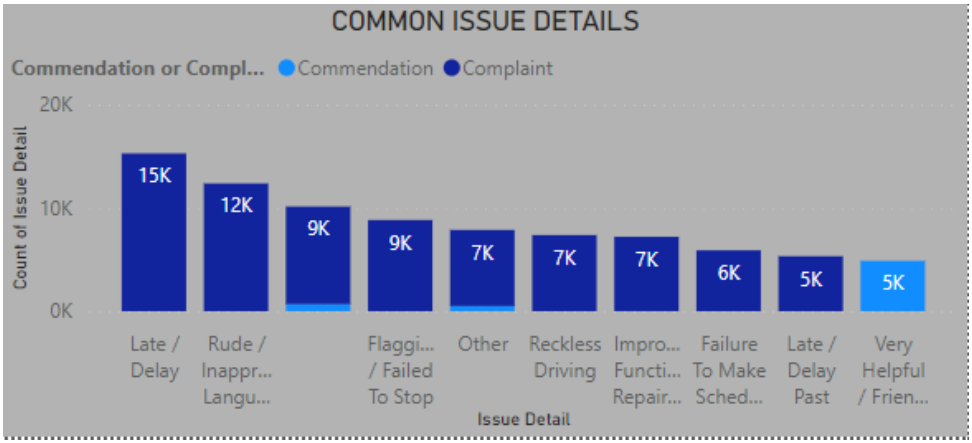
2. Common Subject Details:



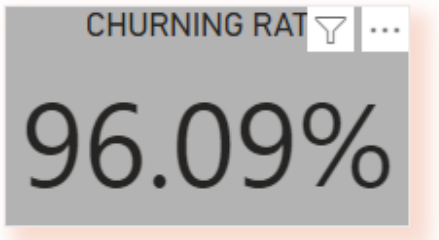
3. Common Subject Matters:

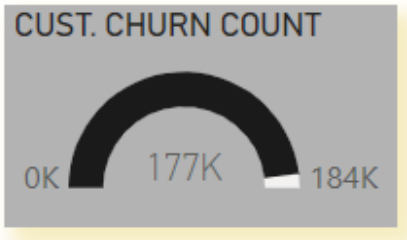


4. Common Issue Details:

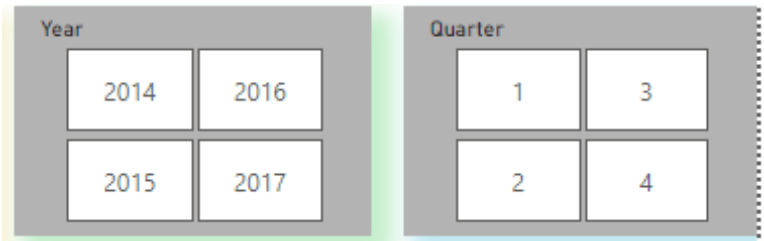


5. Different Metrics:





6. Different Slicers:



7. SQL Queries:

```
29
30  -- Data Cleaning
31  -- Handling null values in the Issue Detail Column
32  UPDATE CHURN_TABLE
33  SET Issue_Detail = CASE WHEN Issue_Detail = '' THEN 'Unspecified' ELSE Issue_Detail END;
34
35  SELECT * FROM CHURN_TABLE;
36  -- The null values have been handled.
37
38  -- Checking duplicate values
39  SELECT DISTINCT *
40  FROM CHURN_TABLE;
41  -- There are duplicate entries in the dataset which need to be removed.
42
```

```
42
43  DROP TABLE IF EXISTS copy_of_CHURN_TABLE;
44  CREATE TABLE copy_of_CHURN_TABLE SELECT DISTINCT * FROM CHURN_TABLE;
45  DROP TABLE CHURN_TABLE;
46  ALTER TABLE copy_of_CHURN_TABLE RENAME TO CHURN_TABLE;
47
48  SELECT * FROM CHURN_TABLE;
49  -- The duplicate values have been removed. The dataset is cleaned now.
50
```

```
51
52  -- 1. How many retained customers are there?
53  SELECT COUNT(Commendation_or_Complaint) AS Retained_Customers_Count
54  FROM CHURN_TABLE
55  WHERE Commendation_or_Complaint = "Commendation" ;
56  -- 3984 Customers out of 86215 Customers gave positive feedback for the services. It seems that the churning rate of customers is very high.
57
```

	Retained_Customers_Count
▶	3984

```
57
58  -- 2. What is the Churn Rate of the customers?
59  WITH Complaints_CTE AS
60   (SELECT COUNT(Commendation_or_Complaint) AS Number_of_Complaints
61   FROM CHURN_TABLE WHERE Commendation_or_Complaint = 'Complaint')
62  SELECT CONCAT(ROUND(((Number_of_Complaints)*100/(SELECT COUNT(Commendation_or_Complaint) FROM CHURN_TABLE)), 2), "%") AS Churning_Rate_of_Customers
63  FROM Complaints_CTE;
64    -- The churning rate of customers is very high i.e. approximately 95.38%.
65    -- The company needs to focus highly on the quality of services it provides.
66
```

	Churning_Rate_of_Customers
▶	95.38%

```sql
-- 3. What is the count of the churned customers?
SELECT COUNT(Commendation_or_Complaint) AS Churned_Customers_Count
FROM CHURN_TABLE
WHERE Commendation_or_Complaint = "Complaint" ;
-- 82231 customers out of 86215 customers are churning customers.
-- The company is going to face a huge loss because of this, if not tackled immediately.
```

Churned_Customers_Count
82231

```sql
-- 4. Which agency has the largest number of complaints from the customers?
SELECT Agency, COUNT(Agency) AS Agency_Count
FROM CHURN_TABLE
WHERE Commendation_or_Complaint = 'Complaint'
GROUP BY Agency
ORDER BY Agency_Count DESC;
-- The NYC Buses agency has the maximum number of complaints, followed by Subways.
-- These agencies are not providing good services to the customers.
```

Agency	Agency_Count
NYC Buses	47781
Subways	21401
Long Island Rail Road	8231
Metro-North Railroad	4818

```sql
-- 5. What are the most common subject matters?
SELECT Subject_Matter, COUNT(*) AS Count_of_Customers
FROM CHURN_TABLE
WHERE Commendation_or_Complaint = 'Complaint'
GROUP BY Subject_Matter
ORDER BY Count_of_Customers DESC;
-- Mostly customers are disappointed with the Employees and Station/Bus Stop/Facility/structure services.
-- These need to be tackled in order to decrease the churning rate of customers.
```

Subject_Matter	Count_of_Customers
Employees	34314
Station /Bus Stop /Facility /Structure	15876
Travel Disruption / Trip Problem	12704
Buses	5795
Trains	5613
Telephone / Website / Mobile Apps	2258
Policies, Rules & Regulations	2111
Schedules / Reservations	1376
MetroCard/Tickets/E-Zpass & Tolls	1346

```sql
-- 6. What are the most common subject details?
SELECT Subject_Detail, COUNT(*) AS Count_of_Customers
FROM CHURN_TABLE
WHERE Commendation_or_Complaint = 'Complaint'
GROUP BY Subject_Detail
ORDER BY Count_of_Customers DESC;
-- Mostly customers face problems with the Bus Operator or Driver and Vehicles.
```

Subject_Detail	Count_of_Customers
Bus Operator / Driver	26957
Bus / Vehicle - General	12335
Rail / Subway Cars	4015
Station - General	2994
Train - General	2974
Train Conductor	2453
Platforms	2016
Ticket Machines	1842
No Value	1666

```sql
-- 7. What are the most common issue details?
SELECT Issue_Detail, COUNT(*) AS Count_of_Customers
FROM CHURN_TABLE
WHERE Commendation_or_Complaint = 'Complaint'
GROUP BY Issue_Detail
ORDER BY Count_of_Customers DESC;
-- Specifically, the customers get bothered by the rude behavior or inappropriate language used by the drivers
-- and malfunctioning of the vehicles, other than the reasons unspecified.
-- The company should seriously take action against such drivers and
-- also repair the malfunctioned vehicles in order to increase the customer retention rate.
```

Issue_Detail	Count_of_Customers
Unspecified	4963
Other	4373
Rude / Inappropriate Language	3689
Improper Function/Needs Repair/Damaged	3329
Late / Delay	3185
Flagging / Failed To Stop	2779
Failure To Make Scheduled Stop	2726
Reckless Driving	2644
Not Helpful	2310

```sql
-- 8. What is the year-wise trend of the customers?
SELECT Year, COUNT(*) AS Count_of_Customers
FROM CHURN_TABLE
GROUP BY Year
ORDER BY Year DESC;
-- It is clear that the customers are not liking the services since year 2015 as the number of customers starts decreasing since year 2015.
-- The number of customers drastically decreases in the year 2017.
-- The customers count in the year 2017 became even lesser than half of the count in the year 2016.
-- The maximum churning of customers has taken place in the year 2017.
```

Year	Count_of_Customers
2017	9502
2016	28302
2015	35455
2014	12956

```sql
-- 9. What is the quarter-wise trend of the customers?
SELECT Quarter, COUNT(*) AS Count_of_Customers
FROM CHURN_TABLE
WHERE Commendation_or_Complaint = 'Complaint'
GROUP BY Quarter
ORDER BY Count_of_Customers DESC;
-- The maximum churning of customers has taken place in the 3rd and 4th quarters (approximately 25% in each quarter).
```

Quarter	Count_of_Customers
3	23814
4	23705
2	18176
1	16536