

# CALL LOG ANALYSIS

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# PROBLEM STATEMENT



The city government of New York City is tasked with:

- Allocating finite resources towards a seemingly infinite set of problems.
- Overseeing many different tasks that touch every aspect of resident's lives

NYC 3-1-1 is a service channel that allows New Yorkers to access government services and to file complaints via multiple platforms:

- Phone calling
- Texting
- Other social media (About NYC311).

Each call creates a wealth of data but it is not readily usable in the raw format.

# PROPOSAL



## CLIENT:

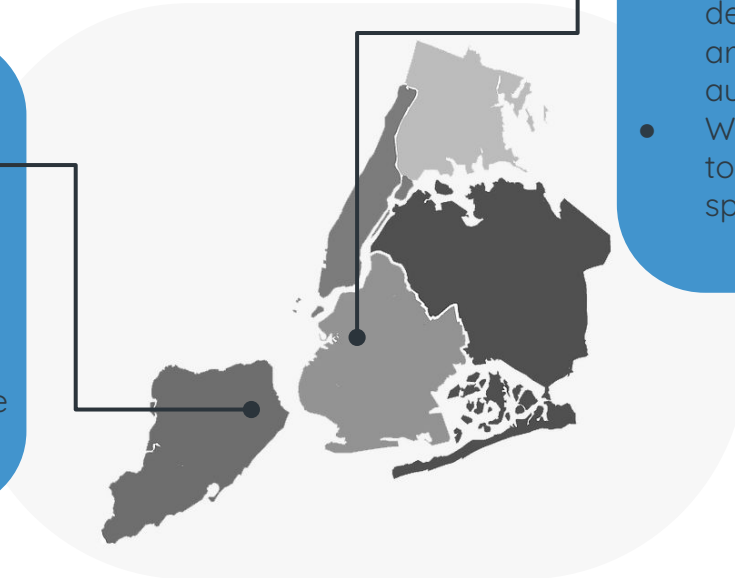
New York City Municipal  
Government

## Our team aims to help the NYC government to:

- relieve the stress of the call center
- allocate public resources efficiently
- maintain quality of service by incorporating tools such as call automation.
- Help managers, and executives make informed decisions

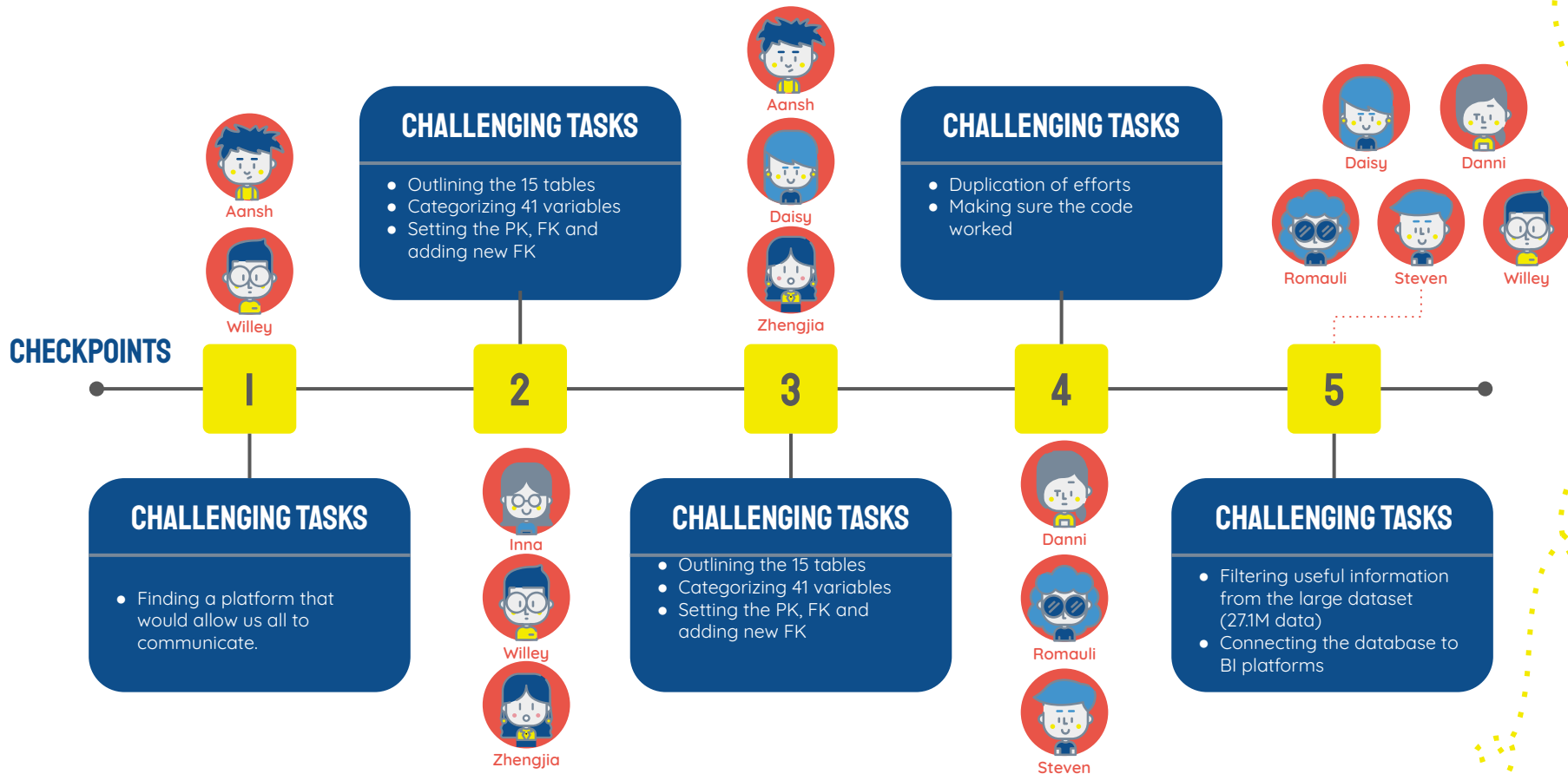
## Focus on three dimensions:

- Understand if there are specific categories that have a high rate of problem solving in a short duration.
- Using that information to decide on categories which are suitable to incorporate automation.
- Work with the departments to decide on budget and spends



# TEAM STRUCTURE AND TIMELINE

Each member took the lead on the checkpoint they volunteered for. Also, a timeline of activities highlighting the most challenging tasks.



## Our original data consists of: 41 columns and 27.1M+ rows

### DATA SCHEMA



Unique Key	Created Date	Closed Date	Agency	Agency Name	Complaint Type	Descriptor	Location Type	Incident Zip	Incident Addr.	Street Name	Cross Street 1	Cross Street 2	Intersection Street	Intersection Street
52775285	12/12/2021 12:00:00 PM		DSNY	Department of Sanitation	Derelict Vehicles	Derelict Vehicles	Street	10035	100 EAST 118 STREET	EAST 118 STREET	FF WILLIAM E WOODL...	LEXINGTON AVENUE		
52774204	12/12/2021 08:06:17 AM		DOT	Department of Transportation	Street Condition	Pothole		10038	547 WEST 181 STR...	WEST 181 STREET	AUGUBON AVENUE	ST NICHOAS AVENUE		
52770974	12/12/2021 01:00:24 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	11249	43 NORTH 3 STREET	NORTH 3 STREET	KENT AVENUE	WYTHE AVENUE	KENT AVENUE	WYTHE AVENUE
52768808	12/12/2021 01:00:20 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	10016	350 EAST 30 STREET	EAST 30 STREET	2 AVENUE	1 AVENUE	2 AVENUE	1 AVENUE
52775230	12/12/2021 01:00:16 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	11206	10 MONTIETH STR...	MONTIETH STREET	BUSHWICK AVENUE	STANWIX STREET	BUSHWICK AVENUE	STANWIX STREET
52773511	12/12/2021 01:00:04 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	11212	285 EAST 91 STREET	EAST 91 STREET	CLARKSON AVENUE	LENOX ROAD	CLARKSON AVENUE	LENOX ROAD
52772305	12/12/2021 12:59:31 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	11360	17 AVENUE	17 AVENUE	201 STREET	17 AVENUE	201 STREET	201 STREET
52772396	12/12/2021 12:59:29 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	10011	250 WEST 14 STREET	WEST 14 STREET	7 AVENUE	8 AVENUE	7 AVENUE	8 AVENUE
52771873	12/12/2021 12:59:00 AM		DOT	Department of Transportation	Street Light Condition	Bracket Arm Loose		10011					EDDY STREET	VICTORY BOULEVARD
52769717	12/12/2021 12:59:39 AM		NYPD	New York City Police Department	Noise - Residential	Loud Music/Party	Residential Building/House	11238	951 FULTON STREET	FULTON STREET	WASHINGTON AVENUE	ST JAMES PLACE	WASHINGTON AVENUE	ST JAMES PLACE
52773344	12/12/2021 12:58:08 AM		NYPD	New York City Police Department	Noise - Residential	Banging/Pounding	Residential Building/House	11372	94-06 34 AVENUE	34 AVENUE	94 STREET	JUNCTION BOULEVARD	94 STREET	JUNCTION BOULEVARD
52768256	12/12/2021 12:58:01 AM		NYPD	New York City Police Department	Illegal Parking	Blocked hydrant	Streets/Sidewalk	10687	3447 OLIVILLE AV...	OLIVILLE AVENUE	WARRING AVENUE	MAICE AVENUE	WARRING AVENUE	MAICE AVENUE
52771809	12/12/2021 12:57:54 AM		NYPD	New York City Police Department	No Access	Blocked Driveway	Streets/Sidewalk	11208	2577 BITHUN AVENUE	BITHUN AVENUE	MILFORD STREET	LOGAN STREET	MILFORD STREET	LOGAN STREET
52774183	12/12/2021 12:57:53 AM		NYPD	New York City Police Department	Noise - Commercial	Loud Music/Party	Store/Commercial	11385	60-03 70 AVENUE	70 AVENUE	60 STREET	60 LAINE	60 STREET	60 LAINE

1NF

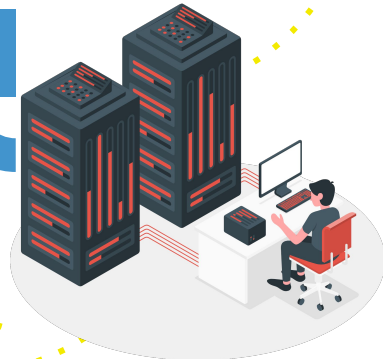
2NF

3NF

- 41 columns to start
- Separated into four big categories:
  - Service request
  - Responding agency
  - Complaint details
  - Location
- Separated categories into more tables specific to the four big categories
- Separated location fields down to 10 more tables

### ETL process

For the etl process, we decided to use python notebook as the insertion method. Some difficulties we encountered were getting the code to work.



# CUSTOMER INTERACTION PLAN

## ANALYST

- Access to views/schemas
- Direct querying in database or PowerBI dashboard search.

## MANAGER

- Direct querying in database or PowerBI dashboard search
- Department based with internal information connected.
- Summarized data with ability to drill into more information

## ANALYST

- Big picture /summary level reports
- Overview of department
- Future recommendations include adding financial data

