1. **When you are on the data download page, check out the meta data.**

**How many columns are in the data? 16.**

**Which column records what has been done to the request? Note the column name here**

**Status**

**What is the data type for Lat\_Long Location? Plain Text**

1. **How many service request types are there? 202**

**Which service type has the highest frequency of service calls? Code Concern – CCS 92870**

**Is Bike share a significant problem in Dallas? Yes, if more than 500 service calls, or otherwise no No**

**(note that the answers will change as the data updated daily.)**

1. **How many simple service request types are there? 173**

**How many simple service request types are related to water? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

'Water Payments & Billing Inquiry',

'Water Pollution Urgent',

'Water Questions',

'Water/Wastewater Line Locate',

'High Water Flooded Roadway Alarm Warning System',

'Flooding',

'Floodplain Project Inquiry',

**Among the top 10 most calls, how many types are related to sanitation? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

'Sanitation Roll Cart Maintenance/Delivery',

'Sanitation Missed Garbage',

'Sanitation Same Day Missed Collection',

'Sanitation Missed Recycle'

1. **Which month in the data showed the highest number of service calls? June**
2. **Which day in June had the lowest number of service calls? 6/27 124**

**Which month had the least numbers of calls throughout the entire month? September 438**

1. **Challenge (required for graduate students;10 bonus points for undergraduate students who come up with a working solution): Create a table below for analysis.**

**The table presents census tracts with service calls. The Geographic Identification Code is the census tract identifier in the census TIGER file.**

**Note that if the first Geographic Identification Code is <Null>. Look at the Service Calls table. There are many entries with <Null> in address, latitude, and longitude. These calls are without locations. However, there are some calls with addresses and latitudes/longitudes but without GEOID. Plot these points on the map to see why and find solutions to locate these points to corresponding census tracts.**

**Raise your hand or Send me a text in the class TEAM channel if you find the solution. Enter the sequence of tools in your solution (e.g., clip to the city of Dallas boundary, sum the total population over tracts, …)**

Graphical user interface, text, application

Description automatically generated

Table

Description automatically generated

1. **What is the use of fishnet grid in Optimized Hot Spot Analysis and Optimized Outlier Analysis? A (a, b, or c) (a: aggregate service calls, b: assign colors for hot or cold spots, c: rasterization for spatial autocorrelation)**

**Is Fair Park in downtown Dallas a hot spot or cold spot of service calls? Hot Spot**

A map of the world

Description automatically generated with low confidence

**Optimized Hot Spots are statistically based, but Density-based clustering is a learning-based method. Based on the analysis, is the following statement true or false? Both methods catch the major hotspots but the Optimized Hot Spot method identified much more confined smaller hot spots than DBSCAN. F (T or F)**

1. **The darkest shade on the map indicates a greater proportion of sanitation calls than the population portion in census tracts.**

**If the calls are in proportion to population proportion in census tracts, what proportion of calls we would expect for a census tract with 5% of total population in the City of Dallas? 5%**

**Where were the highest calls for sanitation services in the City of Dallas? Adjust the transparency to see the geographic context. 4811306510**

Map

Description automatically generated

**Check out all the service calls, which service call appears relatively confined to central and NE Dallas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Noise**

1. **From the scatter plot matrix, which pairs of service request calls are more linearly correlated? a) Water and Animal, b) Code and Traffic, c) Animal and Code? C (a, b, or c)**

**The scatter plot matrix suggests that noise, compared to other types of service calls, are relatively infrequent in most census tracts. T (T or F)**

**The scatter plot matrix suggest that the frequency of sanitation calls varies widely across census tracts, but relatively few census tracts have many traffic calls. T (T or F)**

1. **Why did the join fail? a) Cannot join fields with different names, b) Cannot join fields with different data types, c) Cannot join a feature class with a table. B (a, b, or c)**

**How to fix the error? a) Change "id" in DF to "Geographic Identification Code", b) Change "id" to the same data type as "Geographic Identification Code", c) Add a new field "geoid" with the same data type as "Geographic Identification Code" and copy the values from id. C (a, b, or c)**

1. **What was the most frequent types of service requests from most of south Dallas? Code**

**What was the most frequent types of service requests from most of north Dallas?**

**Sanitation**