# Individual Project – Designing Advanced Architectures for Business Intelligence by Shamin Chokshi

# 311 Kansas City Call centers requests data

## Observations and inferences after Tableau and PowerBI visualisations

1. In 2018 the number of service requests have been pretty much the same throughout the year  
   in 2019 the number of service requests have gradually declined over the months  
   In 2020 they declined from jan to April bot rose from April to July and again started to decline till December  
   In 2021 the number of service requests have declined drastically over the months
2. We see that roughly 77% of requests are made by phones and 13.5% are made from the web and other sources constitute very less percentages
3. NHS has the most number of Service Requests followed by public works and so on
4. Basd on the visualization You get top 10 cases with least response time- 2 slicers for type and category are included.
5. The top 10 Areas (Zip Codes) with most service requests are:   
   64110, 64111, 64114, 64119, 64127, 64128, 64130, 64131, 64132, 64134
6. Most number of service Requests are received by NHS Neighbourhood Preservation work group and by the NHS Department
7. Department which has the most average response time is NCS. There are A few outliers as inconsistencies and the “DAYS TO CLOSE” column has a 29 negative values which does not make sense.
8. Wee see that the number of resolved tickets is the highest throughout 2018 to 2021
9. Category “WEEDS” has the most avg. days to close. I filtered out “Data not available” category as that is not a proper category in the visualization even though it had the biggest chunk of service requests
10. NCS has the most avg days to close and NHS has the most workload (Service requests)

## SQL Queries for validation:

1. Select YEAR([CREATION DATE]) AS YEAR, MONTH([CREATION DATE]) AS MONTH, Count([CASE ID]) AS COUNT\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE where YEAR([CREATION DATE])>=2018 and YEAR([CREATION DATE])<=2021 GROUP BY YEAR([CREATION DATE]), MONTH([CREATION DATE]) ORDER BY YEAR([CREATION DATE]), MONTH([CREATION DATE]);  
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   Description automatically generated
2. Select SOURCE, Count([CASE ID]) as Count\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE Group by SOURCE Order by Count([CASE ID]) DESC;  
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3. Select DEPARTMENT, YEAR([CREATION DATE]), Count([CASE ID]) as Count\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE Group by Department, YEAR([CREATION DATE]) Order by DEPARTMENT, YEAR([CREATION DATE]);

Select DEPARTMENT, Count([CASE ID]) as Count\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE Group by Department Order by COUNT([CASE ID]) desc;  
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1. Select TOP 10 [CASE ID], [DAYS TO CLOSE], CATEGORY1,[TYPE] from CALL\_CENTER\_SERVICE\_TABLE WHERE [DAYS TO CLOSE]>0 AND CATEGORY1='Animal' AND TYPE='Bite' ORDER BY [DAYS TO CLOSE];  
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   Description automatically generated  
   **Please Note: I have bite animal as category 1 and bite as type For validation you can put any among the options**
2. Select TOP 10 [ZIP CODE], Count([CASE ID]) as Count\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE Group by [ZIP CODE] Order by COUNT([CASE ID]) desc;  
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3. Select DEPARTMENT, Count([CASE ID]) as Count\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE Group by Department Order by COUNT([CASE ID]) desc;  
     
   Select [WORK GROUP], Count([CASE ID]) as Count\_OF\_SERVICE\_REQUESTS from CALL\_CENTER\_SERVICE\_TABLE Group by [WORK GROUP] Order by COUNT([CASE ID]) desc;  
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4. Select DEPARTMENT, AVG([DAYS TO CLOSE]) as AVG\_Response\_time from CALL\_CENTER\_SERVICE\_TABLE Group by Department Order by AVG([DAYS TO CLOSE]) desc;  
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5. Select [STATUS] ,YEAR([CREATION DATE]) AS YEAR, COUNT([CASE ID]) as COUNT\_OF\_SERVICE\_REQ from CALL\_CENTER\_SERVICE\_TABLE Group by [STATUS],YEAR([CREATION DATE]) Order by [STATUS],YEAR([CREATION DATE]) desc;  
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6. Select TOP 10 CATEGORY1, AVG([DAYS TO CLOSE]) as AVG\_Response\_time from CALL\_CENTER\_SERVICE\_TABLE where CATEGORY1!='Data Not Available' Group by CATEGORY1 Order by AVG([DAYS TO CLOSE]) desc;  
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   Description automatically generated
7. For-EFFICIENCY(AVG RESPONSE TIME)  
     
   Select DEPARTMENT, AVG([DAYS TO CLOSE]) as AVG\_Response\_time from CALL\_CENTER\_SERVICE\_TABLE Group by Department Order by AVG([DAYS TO CLOSE]) desc;

FOR- WORKLOAD (NUMBER OF SERVICE REQUESTS)  
  
Select DEPARTMENT, COUNT([CASE ID]) as [SERVICE REQUEST COUNT (WORKLOAD)] from CALL\_CENTER\_SERVICE\_TABLE Group by Department Order by COUNT([CASE ID]) desc;  
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