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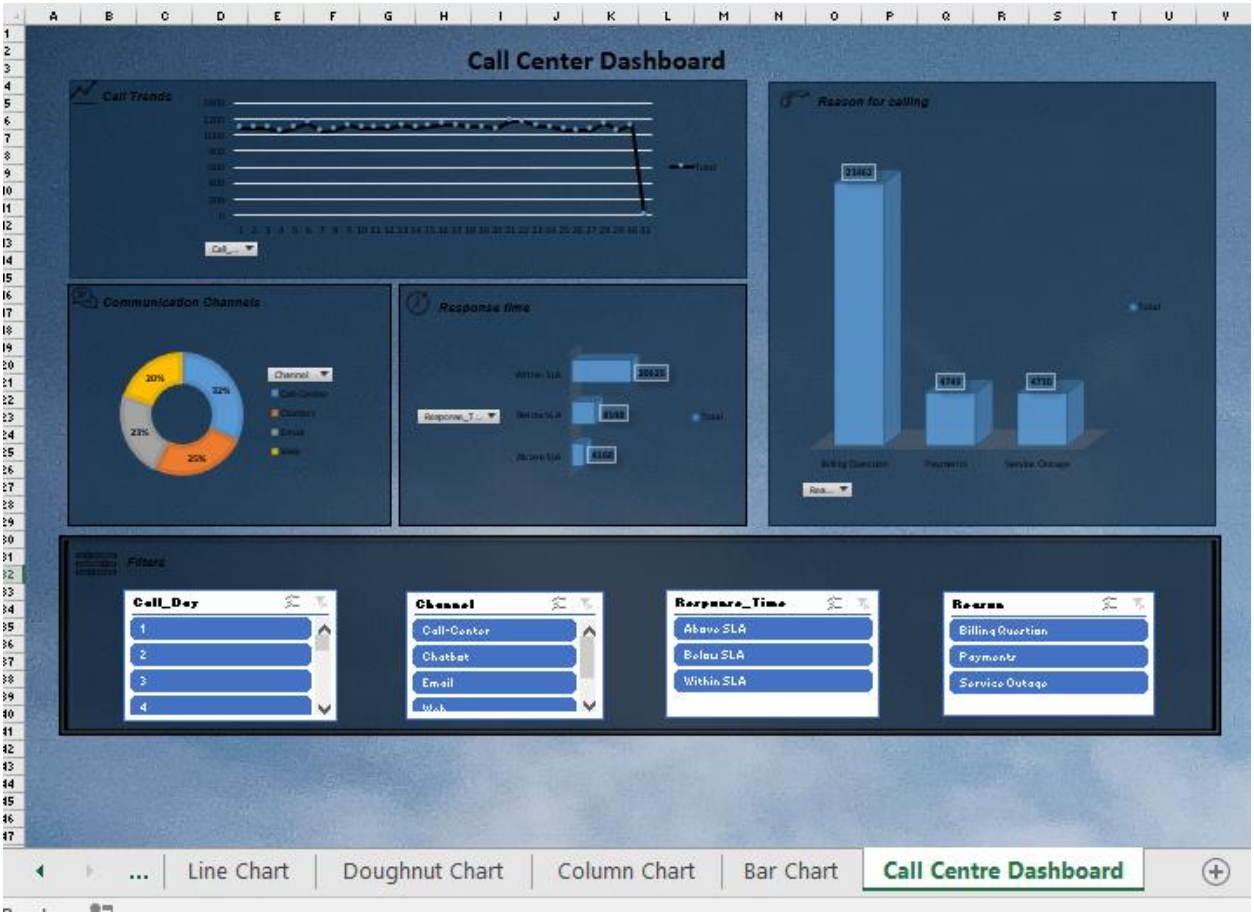
Call Center Dashboard

Background/Scenario

The dataset for this project was obtained from data world. The dashboard was created using Microsoft Excel. The dashboard created showed KPI such as 'Call Trends', "Reason for calling', 'Communication channels' used and the 'Response times'.

Below is a screen shot of the dashboard I created:



Part 1: Explore a Sample Set of Data

Step 1: Download the dataset and open the file.

Step 2: Expand Datasheet Columns as Necessary

ID	Customer_Name	Sentiment	Csat_Score	Call_Timestamp	Call_Day	Reason	City	State	Channel	Response_Time	Call_Duration in_Minutes	Call_Center
DKK-57076809-w-055481-fU	Analise Gairdner	Neutral	7	10/29/2020	29	Billing Question	Detroit	Michigan	Call-Center	Within SLA	17	Los Angeles/CA
QGK-72219678-w-102139-KY	Crichton Kidsley	Very Positive		10/05/2020	5	Service Outage	Spartanburg	South Carolina	Chatbot	Within SLA	23	Baltimore/MD
GYJ-30025932-A-023015-LD	Averill Brundrett	Negative		10/04/2020	4	Billing Question	Gainesville	Florida	Call-Center	Above SLA	45	Los Angeles/CA
ZJI-96807559-i-620008-m7	Noreen Lafflina	Very Negative	1	10/17/2020	17	Billing Question	Portland	Oregon	Chatbot	Within SLA	12	Los Angeles/CA
DDU-69451719-O-176482-Fm	Toma Van der Beken	Very Positive		10/17/2020	17	Payments	Fort Wayne	Indiana	Call-Center	Within SLA	23	Los Angeles/CA
JVI-79728660-U-224285-4a	Kaylyn Emlen	Neutral	5	10/28/2020	28	Billing Question	Salt Lake City	Utah	Call-Center	Within SLA	25	Baltimore/MD
AZI-95054097-e-185542-PT	Phillipe Bowring	Neutral	8	10/16/2020	16	Billing Question	Tyler	Texas	Chatbot	Within SLA	31	Baltimore/MD
TWX-27007918-I-608789-Xw	Krysta de Tocqueville	Positive		10/21/2020	21	Billing Question	New York City	New York	Chatbot	Below SLA	37	Los Angeles/CA
XNG-44599118-P-344473-ZU	Oran Lifsey	Very Negative		10/03/2020	3	Billing Question	Dallas	Texas	Email	Below SLA	37	Baltimore/MD
RLC-64108207-Z-285141-VS	Port Inggall	Neutral		10/07/2020	7	Billing Question	Cincinnati	Ohio	Chatbot	Within SLA	12	Baltimore/MD
RJF-00263922-O-647027-TB	Ella Cristoforo	Negative		10/09/2020	9	Billing Question	Everett	Washington	Chatbot	Within SLA	35	Los Angeles/CA
ZQN-32874873-e-786499-kJ	Aubrey Surcombe	Negative		10/11/2020	11	Billing Question	Huntington	West Virginia	Web	Within SLA	18	Los Angeles/CA
JDP-35147568-w-630120-3I	Nicolle Fareweather	Very Positive		10/02/2020	2	Billing Question	Portland	Oregon	Call-Center	Within SLA	30	Baltimore/MD
DPT-56483482-P-371409-CQ	Melesa Ricardot	Positive	7	10/10/2020	10	Billing Question	Springfield	Massachusetts	Chatbot	Within SLA	20	Denver/CO
ZOV-95861398-a-333622-9r	Odell Cathesyed	Very Negative		10/06/2020	6	Payments	Hyattsville	Maryland	Call-Center	Below SLA	22	Baltimore/MD
BEJ-69711449-V-758715-cp	Dani Stanfield	Negative	4	10/18/2020	18	Billing Question	New York City	New York	Chatbot	Within SLA	28	Denver/CO
DEC-83767217-S-314070-eR	Margarette Jehaes	Negative		10/11/2020	11	Billing Question	Huntsville	Alabama	Email	Above SLA	36	Baltimore/MD
XNY-04106353-Y-318117-I9	Noni Greatrakes	Neutral		10/30/2020	30	Billing Question	Wichita	Kansas	Call-Center	Above SLA	37	Baltimore/MD
GKH-06532516-2-756137-9w	Gerik Archell	Negative		10/26/2020	26	Billing Question	Lansing	Michigan	Web	Within SLA	41	Baltimore/MD
DJU-19977844-M-356042-cQ	Tammie Bettinson	Very Negative		10/11/2020	11	Payments	Lansing	Michigan	Call-Center	Within SLA	9	Chicago/IL
ADD-82219259-r-882390-EG	Errol Follos	Neutral		10/12/2020	12	Billing Question	Fort Wayne	Indiana	Chatbot	Below SLA	35	Baltimore/MD
YOB-40492230-M-009287-T8	Nanni Doy	Negative	5	10/08/2020	8	Billing Question	Hayward	California	Email	Within SLA	27	Baltimore/MD
GZD-50459522-O-178569-D2	Sophie Kleinerman	Very Negative	2	10/03/2020	3	Billing Question	Santa Barbara	California	Chatbot	Within SLA	20	Chicago/IL

Step 3: Review the Data.

Review the raw data to locate any data that could skew the data analysis. Check for data types.

List any issues in the data that can affect your analysis.

Note: There are a number of missing 'csat_score' values

Part 2: Data Preparation and Cleaning

Step 1: Check for alignment of data (data in 'call_timestamp' column is aligned to the left and the data type is changed from 'General' to 'Short Date')

Step 2: Next up is converting the csat_score and the call duration in minutes' columns to 'Number' because they are 'General' too and it will get in the way when I try to aggregate the data.

Step 3: Data Parsing from Text to Column

Next, the 'day' is extracted out of the 'call_timestamp' column so that it can be used in a line chart later. It's already known that all of the data is collected throughout October 2020 so there is no need to keep using the full date format. So I added an extra column called 'Call_Day' that has the day of the call in it. The new column's data was also changed to 'Number'.

E	F
Call_Timestamp	Call_Day
10/29/2020	29
10/05/2020	5
10/04/2020	4
10/17/2020	17
10/17/2020	17
10/28/2020	28

This is done using the 'Data > Text to Columns' feature.

Step 4: Embolden and convert the first letter of the column headings to uppercase e.g. 'city' becomes '**City'**, this is done to make the headings more legible.

Additionally, 'wrap text' and 'top align' the headings.

J	K	L	M	N
Channel	Response_Time	Call_Duration in_Minutes	call_center	

That's it for preparing our data.

Part 3: Data Visualization using Pivot Tables and build Charts.

In this step I will build my charts and Pivot tables that I will later use in the dashboard. Out of convenience, each of the charts will be created in a separate tab to keep things tidy. The following charts will be created:

1. Line Chart for the call trends.
2. A doughnut chart for the Call channel.
3. A column chart for the reason of calling.
4. A bar chart for the response time.

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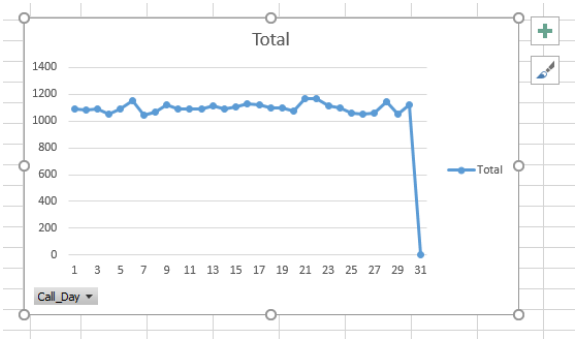
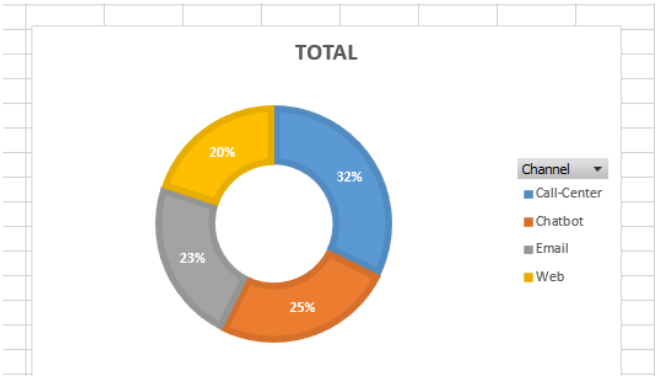
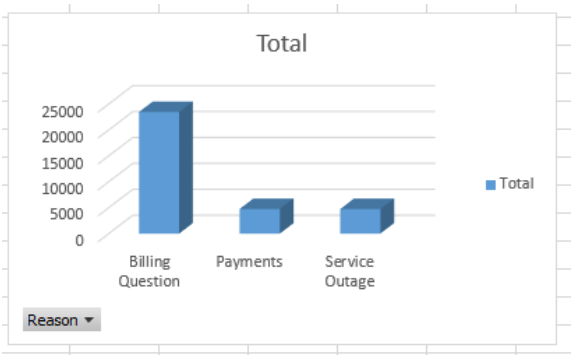
Step 1: Creating a line chart. This chart will basically show the trends of calls by listing the count of calls for each day. A new tab, named 'Line Chart' is created.



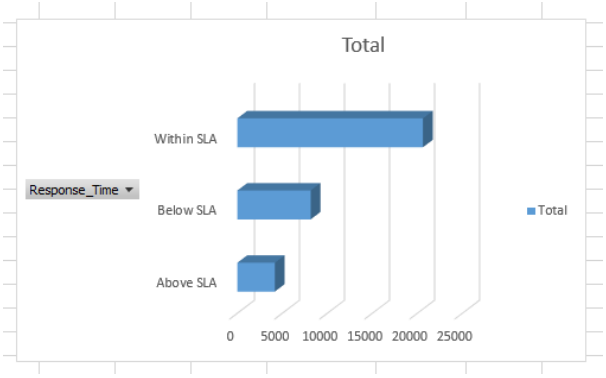
Step 2: Creating a doughnut chart. This chart will basically show the proportion of the different channels of communication being used by the clients. A new tab, named 'Doughnut Chart' is created.



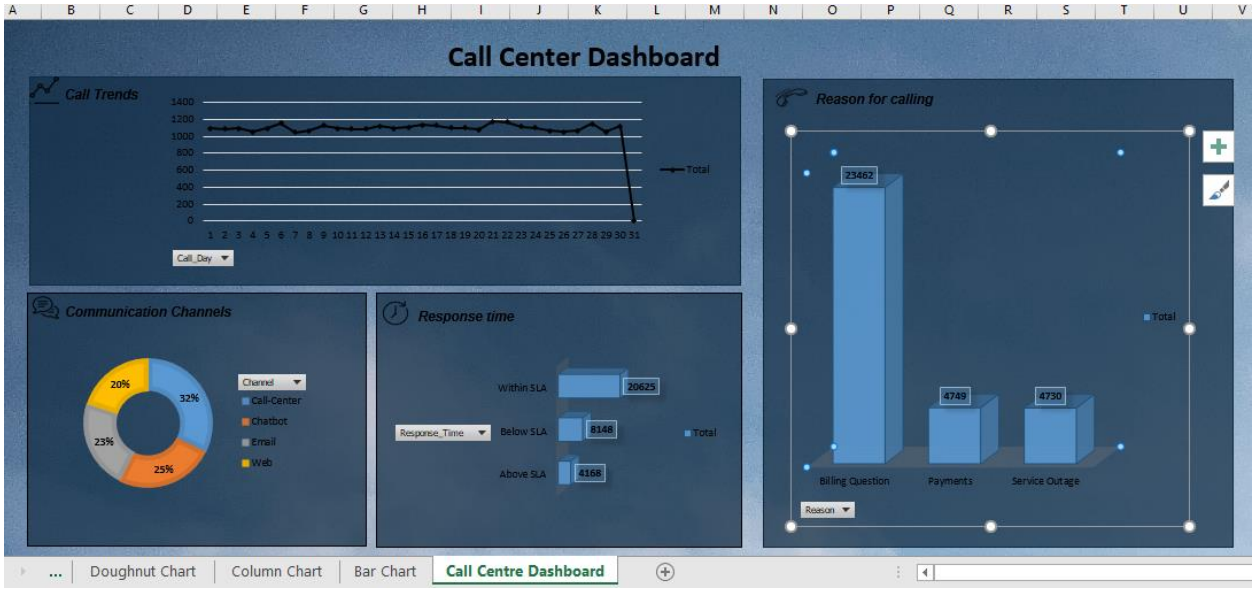
Step 3: Creating a Column chart indicating the reason for calling. A new tab, named 'Column Chart' is created.



Step 4: Creating a bar chart for the which will indicate the categories in which the response times fall in. A new tab, named 'Bar Chart' is created.



Step 5: Creating a dashboard. A new tab, 'Call Center Dashboard' is created.



Step 6: Insert slicers to filter data on the dashboard.

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Final Result