1. **Call Trends Analytics:**

**SQL Queries:**

-- READ DATA

SELECT \*

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

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-- 1) Total Calls Recieved :

-- 1.1) Overall Calls Received :

SELECT COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

-- 1.2) Total Calls by Topic :

SELECT Topic, COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Topic

-- 1.3) Total Calls by Agent :

SELECT Agent, COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Agent

-- 1.4) Total Calls by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY DATEPART(HOUR, Time)

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-- 2) Total Calls Answered :

-- 2.1) Overall Calls Answered

SELECT COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

-- 2.2) Total Calls Answered by Topic :

SELECT Topic, COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

GROUP BY Topic

-- 2.3) Total Calls Answered by Agent :

SELECT Agent, COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

GROUP BY Agent

-- 2.4) Total Calls Answered by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

GROUP BY DATEPART(HOUR, Time)

---------------------------------------------------------------------------

-- 3) Total Calls Resolved :

-- 3.1) Overall Calls Resolved :

SELECT COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

-- 3.2) Total Calls Resolved by Topic :

SELECT Topic, COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

GROUP BY Topic

-- 3.3) Total Calls Resolved by Agent :

SELECT Agent, COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

GROUP BY Agent

-- 3.4) Total Calls Resolved by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

GROUP BY DATEPART(HOUR, Time)

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-- 4) Speed of Answer :

-- 4.1) Average Speed of Answer :

SELECT AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

-- 4.2) Average Speed of Answer by Topic :

SELECT Topic, AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Topic

-- 4.3) Average Speed of Answer by Agent :

SELECT Agent, AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Agent

-- 4.4) Average Speed of Answer by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY DATEPART(HOUR, Time)

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-- 5) Satisfactory Rating :

-- 5.1) Average Satisfactory Rating :

SELECT AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

-- 5.2) Average Satisfactory Rating by Topic:

SELECT Topic, AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Topic

-- 5.3) Average Satisfactory Rating by Agent:

SELECT Agent, AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Agent

-- 5.4) Average Satisfactory Rating by Hour:

SELECT DATEPART(HOUR, Time) AS DataHour, AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY DATEPART(HOUR, Time)

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-- 6.A) Ratio Calls Answered and Abandoned :

SELECT COUNT(Call\_Id) AS Calls\_Received,

CASE WHEN Answered\_Y\_N = 1 THEN 'Yes' ELSE 'No' END AS Calls\_Answered\_and\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Answered\_Y\_N

-- 6.B) Percentage of Calls Answered and Abandoned :

SELECT

CEILING(SUM(CASE WHEN Answered\_Y\_N = 1 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Answered,

CEILING(SUM(CASE WHEN Answered\_Y\_N = 0 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

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-- 7.A) Ratio of Calls Resolved and Unresolved :

SELECT COUNT(Call\_Id) AS Calls\_Received,

CASE WHEN Resolved = 1 THEN 'Yes' ELSE 'No' END AS Calls\_Resolved\_and\_Unresolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Resolved

-- 7.B) Percentage of Calls Resolved and Unresolved :

SELECT

CEILING(SUM(CASE WHEN Resolved = 1 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Answered,

CEILING(SUM(CASE WHEN Resolved = 0 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

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-- Total Calls Received by Months vs Answered and Abandoned :

SELECT

(CASE WHEN MONTH(Date) = 1 THEN 'Jan'

WHEN MONTH(Date) = 2 THEN 'Feb'

WHEN MONTH(Date) = 3 THEN 'Mar'

ELSE NULL

END) AS Months,

COUNT(Call\_ID) AS Total\_Calls\_Received,

SUM(CASE WHEN Answered\_Y\_N = 1 THEN 1 ELSE 0 END) AS Calls\_Answered,

SUM(CASE WHEN Answered\_Y\_N = 0 THEN 1 ELSE 0 END) AS Calls\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY MONTH(Date)

---------------------------------------------------------------------------

-- Average Talk Duration in Minutes by Calls Answered vs Resolved and Unresolved :

SELECT DATEPART(MINUTE, AvgTalkDuration) AS Avg\_Mins,

SUM(CASE WHEN Answered\_Y\_N = 1 THEN 1 ELSE 0 END) AS Calls\_Answered,

SUM(CASE WHEN Resolved = 1 THEN 1 ELSE 0 END) AS Resolved,

SUM(CASE WHEN Resolved = 0 THEN 1 ELSE 0 END) AS Unresolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE AvgTalkDuration IS NOT NULL

GROUP BY DATEPART(MINUTE, AvgTalkDuration)

**Power Bi DAX:**

1. Total Calls Answered = CALCULATE(COUNT(CallCenterDataset[Answered]), CallCenterDataset[Answered] = "Yes")
2. Total Calls Resolved = CALCULATE(COUNT(CallCenterDataset[Resolved]), CallCenterDataset[Resolved] = "Yes")