SQL Queries for Customer Churn Analysis

Count of Customers by Gender

SELECT Gender, COUNT(Gender) AS total_values ,

COUNT(Gender) * 100.0 / (SELECT COUNT(*) FROM stg_churn) AS percentage

FROM stg_churn

GROUP BY Gender;

	Gender	total_values	percentage
1	Male	2370	36.927391710813
2	Female	4048	63.072608289186

Count of Customers by Contract Type

SELECT Contract, COUNT(Contract) AS total_values ,

COUNT(Contract) * 100.0 / (SELECT COUNT(*) FROM stg_churn) AS percentage

FROM stg_churn

GROUP BY Contract;

	Contract	total_values	percentage
1	Month-to-Month	3286	51.199750701153
2	One Year	1413	22.016204425054
3	Two Year	1719	26.784044873792

Revenue Contribution by Customer Status
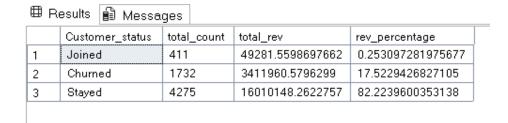
```sql
SELECT
 Customer_status,
 COUNT(Customer_status) AS total_count,
 SUM(Total_Revenue) AS total_rev,
 SUM(Total_Revenue) / (SELECT SUM(Total_revenue) FROM stg_churn) * 100 AS rev_percentage
FROM stg_churn
GROUP BY Customer_status;
```

⊞ Results   📄 Messages

	Customer_status	total_count	total_rev	rev_percentage
1	Joined	411	49281.5598697662	0.253097281975677
2	Churned	1732	3411960.5796299	17.5229426827105
3	Stayed	4275	16010148.2622757	82.2239600353138

Customer Distribution by State

```sql
SELECT State, COUNT(State) AS Total_Count,
COUNT(State) * 100.0/ (SELECT COUNT(*) FROM stg_churn ) AS Percentage
FROM stg_churn
GROUP BY State
ORDER BY Percentage DESC;
```

⊞ Results | 📄 Messages

	State	Total_Count	Percentage
1	Uttar Pradesh	629	9.800560922405
2	Tamil Nadu	600	9.348706762231
3	Maharashtra	504	7.852913680274
4	Karnataka	470	7.323153630414
5	Haryana	398	6.201308818946
6	Andhra Pradesh	395	6.154565285135
7	West Bengal	368	5.733873480835
8	Punjab	342	5.328762854471
9	Bihar	336	5.235275786849
10	Gujarat	335	5.219694608912
11	Jammu & Kashmir	320	4.985976939856
12	Madhya Pradesh	288	4.487379245870
13	Telangana	281	4.378311000311
14	Rajasthan	259	4.035525085696
15	Kerala	200	3.116235587410
16	Odisha	152	2.368339046431
17	Assam	139	2.165783733250
18	Delhi	127	1.978809598005
19	Jharkhand	113	1.760673106886
20	Uttarakhand	62	0.966033032097
21	Chhattisgarh	59	0.919289498286
22	Puducherry	41	0.638828295419

Data Quality Check – Null Value Analysis

```sql
SELECT

 SUM(CASE WHEN Customer_ID IS NULL THEN 1 ELSE 0 END) AS Customer_ID_Null_Count,

 SUM(CASE WHEN Gender IS NULL THEN 1 ELSE 0 END) AS Gender_Null_Count,

 SUM(CASE WHEN Age IS NULL THEN 1 ELSE 0 END) AS Age_Null_Count,

 SUM(CASE WHEN Married IS NULL THEN 1 ELSE 0 END) AS Married_Null_Count,

 SUM(CASE WHEN State IS NULL THEN 1 ELSE 0 END) AS State_Null_Count,

 SUM(CASE WHEN Number_of_Referrals IS NULL THEN 1 ELSE 0 END) AS
Number_of_Referrals_Null_Count,

 SUM(CASE WHEN Tenure_in_Months IS NULL THEN 1 ELSE 0 END) AS Tenure_in_Months_Null_count,

 SUM(CASE WHEN Value_Deal IS NULL THEN 1 ELSE 0 END) AS Value_Deal_Null_Count,

 SUM(CASE WHEN Phone_Service IS NULL THEN 1 ELSE 0 END) AS Phone_Service_Null_Count,

 SUM(CASE WHEN Multiple_Lines IS NULL THEN 1 ELSE 0 END) AS Multiple_Lines_Null_Count,

 SUM(CASE WHEN Internet_Service IS NULL THEN 1 ELSE 0 END) AS Internet_Service_Null_Count,

 SUM(CASE WHEN Internet_Type IS NULL THEN 1 ELSE 0 END) AS Internet_Type_Null_Count,

 SUM(CASE WHEN Online_Security IS NULL THEN 1 ELSE 0 END) AS Online_Security_Null_Count,

 SUM(CASE WHEN Online_Backup IS NULL THEN 1 ELSE 0 END) AS Online_Backup_Null_Count,

 SUM(CASE WHEN Device_Protection_Plan IS NULL THEN 1 ELSE 0 END) AS
Device_Protection_Plan_Null_Count,

 SUM(CASE WHEN Premium_Support IS NULL THEN 1 ELSE 0 END) AS Premium_Support_Null_Count,

 SUM(CASE WHEN Streaming_TV IS NULL THEN 1 ELSE 0 END) AS Streaming_TV_Null_Count,

 SUM(CASE WHEN Streaming_Movies IS NULL THEN 1 ELSE 0 END) AS
Streaming_Movies_Null_Count,

 SUM(CASE WHEN Streaming_Music IS NULL THEN 1 ELSE 0 END) AS Streaming_Music_Null_Count,

 SUM(CASE WHEN Unlimited_Data IS NULL THEN 1 ELSE 0 END) AS Unlimited_Data_Null_Count,

 SUM(CASE WHEN Contract IS NULL THEN 1 ELSE 0 END) AS Contract_Null_Count,

 SUM(CASE WHEN Paperless_Billing IS NULL THEN 1 ELSE 0 END) AS Paperless_Billing_Null_Count,

 SUM(CASE WHEN Payment_Method IS NULL THEN 1 ELSE 0 END) AS Payment_Method_Null_Count,
```

```sql
    SUM(CASE WHEN Monthly_Charge IS NULL THEN 1 ELSE 0 END) AS Monthly_Charge_Null_Count,

    SUM(CASE WHEN Total_Charges IS NULL THEN 1 ELSE 0 END) AS Total_Charges_Null_Count,

    SUM(CASE WHEN Total_Refunds IS NULL THEN 1 ELSE 0 END) AS Total_Refunds_Null_Count,

    SUM(CASE WHEN Total_Extra_Data_Charges IS NULL THEN 1 ELSE 0 END) AS
Total_Extra_Data_Charges_Null_Count,

    SUM(CASE WHEN Total_Long_Distance_Charges IS NULL THEN 1 ELSE 0 END) AS
Total_Long_distance_Charges_Null_Count,

    SUM(CASE WHEN Total_Revenue IS NULL THEN 1 ELSE 0 END) AS Total_Revenue_Null_Count,

    SUM(CASE WHEN Customer_Status IS NULL THEN 1 ELSE 0 END) AS Customer_Status_Null_Count,

    SUM(CASE WHEN Churn_Category IS NULL THEN 1 ELSE 0 END) AS Churn_Category_Null_Count,

    SUM(CASE WHEN Churn_Reason IS NULL THEN 1 ELSE 0 END) AS Churn_Reason_Null_Count

FROM stg_churn;
```

Data Cleaning – Handle Nulls & Insert into Production Table

```sql
SELECT Customer_ID,

Gender,

Age,

Married,

State,

Number_of_Referrals,

Tenure_in_Months,

ISNULL(Value_Deal, 'None') AS Value_Deal,

Phone_Service,

ISNULL(Multiple_Lines, 'None') AS Multiple_Lines,

Internet_Service,

ISNULL(Internet_Type, 'None') AS Internet_Type,

ISNULL(Online_Security, 'No') AS Online_Security,

ISNULL(Online_Backup, 'No' ) AS Online_Backup,

ISNULL(Device_Protection_Plan, 'No')  AS Device_Protection_Plan,

ISNULL(Premium_Support, 'No') AS Premium_Support,

ISNULL(Streaming_TV, 'No') AS Streaming_TV,

ISNULL(Streaming_Movies, 'No') AS Streaming_Movies,

ISNULL(Streaming_Music, 'No') AS Streaming_Music,

ISNULL(Unlimited_Data, 'No') AS Unlimited_Data,

Contract,

Paperless_Billing,

Payment_Method,

Monthly_Charge,

Total_Charges,

Total_Refunds,
```

```sql
    Total_Extra_Data_Charges,

    Total_Long_Distance_Charges,

    Total_Revenue,

    Customer_Status,

    ISNULL(Churn_Category, 'Others') AS Churn_Category,

    ISNULL(Churn_Reason, 'Others') AS Churn_Reason

INTO [churn_db].[dbo].[Prod_churn]

FROM [churn_db].[dbo].[stg_churn];
```

Power BI Views Creation

Churn vs Stayed Customers

```sql
CREATE VIEW VW_ChurnData AS
 SELECT * FROM Prod_churn WHERE Customer_Status IN ('Churned', 'Stayed')
```

Newly Joined Customers

```sql
CREATE VIEW VW_JoinData AS
 SELECT * FROM Prod_churn WHERE Customer_Status = 'Joined'
```