# Telecom Churn Project

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# DATASET OVERVIEW

- **File Name:** **Telecom_churn_data.csv**
- **Content:** The dataset contains information about telecom customers, including their mobile numbers, usage patterns, recharge behavior, and other related metrics over four months (June to September 2014).
- **Purpose:** The dataset is likely used for analyzing customer behavior, predicting churn, and understanding usage patterns.

## Key Columns:

| SR No. | Feature | Description |
|---|---|---|
| 1 | customer_id | Unique identifier for each customer. |
| 2 | circle_id | Identifier for the telecom circle (region). |
| 3 | mou_op | Outgoing and incoming call minutes (MOU) to other operators. |
| 4 | last_date_june | Last date of the month for June 2014. |
| 5 | last_date_july | Last date of the month for July 2014. |
| 6 | last_date_august | Last date of the month for August 2014. |
| 7 | last_date_september | Last date of the month for September 2014. |
| 8 | arpu | Average Revenue Per User for each month. |
| 9 | onnet_mou | On-net (within the same network) call minutes. |
| 10 | offnet_mou | Off-net (to other networks) call minutes. |
| 11 | roam_ic_mou | Incoming roaming call minutes. |
| 12 | roam_og_mou | Outgoing roaming call minutes. |

## Key Columns:

| SR No. | Feature | Description |
|---|---|---|
| 13 | loc_t2t_mou | Local outgoing calls to landline (T2T) minutes. |
| 14 | loc_t2m_mou | Local outgoing calls to mobile (T2M) minutes. |
| 15 | loc_t2f_mou | Local outgoing calls to fixed lines (T2F) minutes. |
| 16 | loc_t2c_mou | Local outgoing calls to call centers (T2C) minutes. |
| 17 | loc_og_mou | Total local outgoing call minutes. |
| 18 | std_t2t_mou | STD outgoing calls to landline (T2T) minutes. |
| 19 | std_t2m_mou | STD outgoing calls to mobile (T2M) minutes. |
| 20 | std_t2f_mou | STD outgoing calls to fixed lines (T2F) minutes. |
| 21 | std_t2c_mou | STD outgoing calls to call centers (T2C) minutes. |
| 22 | std_og_mou | Total STD outgoing call minutes. |
| 23 | isd_og_mou | ISD (International) outgoing call minutes. |
| 24 | spl_og_mou | Special outgoing call minutes. |

## Key Columns:

| SR No. | Feature | Description |
|---|---|---|
| 25 | other_og_mou | Other outgoing call minutes. |
| 26 | total_og_mou | Total outgoing call minutes. |
| 27 | loc_ic_t2t_mou | Local incoming calls from landline (T2T) minutes. |
| 28 | loc_ic_t2m_mou | Local incoming calls from mobile (T2M) minutes. |
| 29 | loc_ic_t2f_mou | Local incoming calls from fixed lines (T2F) minutes. |
| 30 | loc_ic_mou | Total local incoming call minutes. |
| 31 | std_ic_t2t_mou | STD incoming calls from landline (T2T) minutes. |
| 32 | std_ic_t2m_mou | STD incoming calls from mobile (T2M) minutes. |
| 33 | std_ic_t2f_mou | STD incoming calls from fixed lines (T2F) minutes. |
| 34 | std_ic_t2o_mou | STD incoming calls from other operators (T2O) minutes. |
| 35 | std_ic_mou | Total STD incoming call minutes. |
| 36 | total_ic_mou | Total incoming call minutes. |

## Key Columns:

| SR No. | Feature | Description |
|---|---|---|
| 37 | spl_ic_mou | Special incoming call minutes. |
| 38 | isd_ic_mou | ISD (International) incoming call minutes. |
| 39 | other_ic_mou | Other incoming call minutes. |
| 40 | total_rech_num | Total number of recharges. |
| 41 | total_rech_amt | Total recharge amount. |
| 42 | max_rech_amt | Maximum recharge amount. |
| 43 | last_rech_date | Date of the last recharge. |
| 44 | last_day_rech_amt | Recharge amount on the last day of the month. |
| 45 | last_data_rech_date | Date of the last data recharge. |
| 46 | total_data_rech_amt | Total data recharge amount. |
| 47 | max_data_rech_amt | Maximum data recharge amount. |
| 48 | num_2g_rech | Number of 2G recharges. |

## Key Columns:

| SR No. | Feature | Description |
|---|---|---|
| 49 | num_3g_rech | Number of 3G recharges. |
| 50 | avg_data_rech_amt | Average data recharge amount. |
| 51 | monthly_2g_data | 2G data usage in MB. |
| 52 | monthly_3g_data | 3G data usage in MB. |
| 53 | arpu_3g | ARPU for 3G users. |
| 54 | arpu_2g | ARPU for 2G users. |
| 55 | night_pack | Indicates if the user has a night package (1 for yes, 0 for no). |
| 56 | sachet_2g_data | Sachet (small pack) 2G data usage in MB. |
| 57 | sachet_3g_data | Sachet (small pack) 3G data usage in MB. |
| 58 | fb_user | Indicates if the user is a Facebook user (1 for yes, 0 for no). |
| 59 | age_on_network | Age on Network (in days). |
| 60 | bundle_3g | Voice and data bundle consumption for 3G users. |

# Observations

•Data Size:

Rows:-99999 Rows
Columns:-226 Columns

- The dataset contains detailed information about customer usage patterns, including call minutes (local, STD, ISD, roaming), data usage (2G, 3G), and recharge behavior.
- The data is segmented by month (June to September 2014), allowing for temporal analysis of customer behavior.
- The dataset includes both outgoing and incoming call details, as well as data usage and recharge patterns.
- The presence of ARPU (Average Revenue Per User) and other financial metrics suggests that the dataset can be used for revenue analysis and churn prediction.
- The dataset also includes information about special packages (night packages, Facebook usage), which could be useful for targeted marketing and customer segmentation.

# Used Potential Cases

- **Churn Prediction:** Analyze customer behavior to predict which customers are likely to churn.
- **Customer Segmentation:** Segment customers based on usage patterns, recharge behavior, and other metrics.
- **Revenue Analysis:** Analyze ARPU and other financial metrics to understand revenue trends.
- **Targeted Marketing:** Use data on special packages and usage patterns to design targeted marketing campaigns.
- **Network Optimization:** Analyze call and data usage patterns to optimize network resources.