

# WINTER ANALYTICS'24

## Analytics Presentation

**Robust exploratory analysis, rich with business insights & data driven proposals to add value to the Company**



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# Case

## Scenario:

In the telecommunications sector, company Zela faces the challenge of maintaining its customer base in a highly competitive market. The company has noticed an unsettling trend of increased customer churn, which is the rate at which customers discontinue their service. If churn increases by only one point, then it directly affects the business in a negative perspective. High Churn rates compound very fast that can have a massive loss to the company. This trend threatens the company's market share, impacts its revenue and long-term sustainability.

## Problem Statement:

To address the issue of high churn rates, the company has embarked on a data-driven approach to understand the underlying factors contributing to customer churn. By analyzing customer data, the company aims to identify patterns and predictors of churn, which could include usage patterns, service charges, and customer service interactions. The goal is to leverage these insights to develop targeted strategies that improve customer retention. This could involve adjusting pricing models, enhancing service features, or improving customer service. The success of this initiative is critical for the company to stabilize its customer base, optimize its service offerings, and secure a competitive edge in the market.



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## The Dataset:

The training dataset contains 3467 samples. Each sample contains 19 features and 1 boolean variable "churn" which indicates the class of the sample. The 19 input features and 1 target variable are:

Dataset Link:

<https://drive.google.com/drive/u/1/folders/1x4--wO9Tw87c2-R28l2v1NWNiUZbwhE1>

Features	Description
State	2- letter code of US state of customer residence
account_length	No.of months the customer has been the provider
area_code	3-digit area code
international_plan	if customer has international plan
voice_mail_plan	if customer has voice mail plan
number_vmail_messages	if customer has voice-mail messages
avg_day_mins	average minutes of day calls
avg_day_calls	average minutes of day calls
avg_day_charge	average minutes of evening calls
avg_eve_mins	average minutes of evening calls
avg_eve_calls	average number of evening calls



Features	Description
avg_eve_charge	average charge of evening calls
average_night_mins	average minutes of night calls
avg_night_calls	average number of night calls
avg_night_charge	average charge of night calls
avg_intl_mins	average minutes of international calls
avg_intl_calls	average number of international calls
avg_intl_charge	average charge of international calls
no_customer_service_calls	no. of calls to customer service
churn	customer churn (target variable)

## Deliverables

- Analyze the distribution of customer demographics such as state, area code, and account length to see if there are any trends in churn rates.
- Perform a correlation analysis to identify any strong predictors of churn among the numerical features.
- Perform Exploratory Data Analysis (EDA) to identify patterns and factors that are indicative of customer churn.



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# Deliverables

- Use a machine learning model to predict churn based on the features and identify the most important features that contribute to churn for the test dataset.

## Delivery

- **Round 1 (14th January):** For this round submit your colab files. Create a flowchart of the steps you have followed in the code. *(sample given in the resource document)*
- **Round 2 (25th January):** Create a 6-7 slide deck based on the insights derived from data analysis and suggest steps the company should take in order to retain its valuable customer base and make up for its losses. Do the prediction analysis of the churn rates for the test case.

## Instructions

- Submit your data analysis either in **colab** or **.ipynb**.
- Comment the steps that you are performing in your collab file for better understanding. Your file should be clean and in a systematic format. This would be considered while judging.
- **6-7 slide deck**, (excluding Intro, Executive Summary, Thank You, & Appendix) explaining your insights and the measures that needs to be taken
- Submit the deck and flowchart in .pdf format.
- Prepare a **5 minute** presentation based on the deck.

