

## **CUSTOMER CHURN PREDICTION**

### **DATA ANALYTICS WITH COGNOS- GROUP2**

#### **Problem statement:**

Predicting customer churn is a critical business problem in a variety of sectors, including telephones, subscription services, e-commerce, and more. Businesses may take proactive steps to retain consumers by utilizing churn prediction to identify customers who are likely to discontinue using their goods or services.

#### **Objectives:**

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The goal of this project is to create a model that can forecast client churn with accuracy. Using data analytics to forecast customer churn and identify variables affecting customer retention might help firms retain more customers.

To begin with, one needs to build a comprehensive picture of the customers and their interactions across a variety of channels, such as store/branch visits, product purchase histories, customer service calls, Web-based transactions, and social media interactions, to name a few.

Therefore, by dealing with churn, these companies may not only maintain their market position but also develop and prosper. The bigger the network size, the cheaper the cost of commencement,

and the higher the profit. As a result, the company's key focus for success

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is reducing client attrition and implementing effective retention strategy.

### **DESIGN THINKING:**

As we discussed earlier we have to find out the solution for how to solve this problem here are the detailed step by step process for designing of the model using Data Analysis.

#### **Step1: Clearly define the problem**

Recognize what your particular definition of "churn" is. Is it when a consumer no longer uses your product, when they terminate their subscription, or another event?

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#### **Step2: Data collection**

Use appropriate data as per the problem defined in the problem statement.

#### **Step3: Preparing of the data**

Data is gathered, and thenThe data should be cleaned and pre-processed to deal with missing values, outliers, and inconsistencies. To provide the model useful information, add new features or change current ones. For the purposes of training and assessing your model, divide the dataset into training, validation, and test sets.

#### **Step4: Exploratory data analysis(EDA)**

Data visualization To investigate data distributions, relationships, and trends, use charts and graphs. Keep an eye out for patterns or abnormalities that might point to possible churn causes. Create theories on the characteristics that could serve as excellent churn predictors.

#### **STEP5:Feature Selection:**

Choose relevant features: To choose the most informative features for your model, use statistical tests, feature importance ratings, or domain expertise.

#### **Step6:Model Selection**

Select the proper algorithms:

Think about various models, such as neural networks, random forests, or gradient boosting.

Basic models: As you study increasingly complicated models, start with a very simple model as a starting point.

#### **Step:7 Model Training and Validation**

Train the models: To train the models you've selected, use the training

dataset. On the validation dataset, evaluate the model performance using the proper metrics (e.g., accuracy, precision, recall, and F1-score).

### **Step8: Model evaluation**

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The model had been evaluated through the different types of accuracy models like confusion matrix etc...

### **Step9:Reporting and Visualization**

To inform stakeholders about churn projections and insights, provide periodical reports or dashboards.

Visualization: To communicate findings and trends to non-technical audiences, use graphs and charts.

### **Step10: Business Action**

Work with business teams to develop and put into action measures to stop churn, such as focused marketing campaigns, individualized offers, or customer support programs, based on the predictions made

by the mode   1.

### **Step 11: Iterate**

Improve model performance and business outcomes by iterating on the entire process continuously and adding fresh data and user feedback.

