**NAAN MUDHALAVAN-PHASE 3**

**Data Analytics with Cognos**

**Analysis Objectives:**

The analysis objectives for the customer churn prediction project are to:

* Churn Prediction: Develop a machine learning model to predict customer churn accurately. The model should identify customers who are likely to leave the service based on historical data and relevant features.
* Insight Generation: Gain actionable insights into customer behavior and factors influencing churn. Understand patterns and trends within the dataset to help in strategic decision-making.
* Customer Segmentation: Segment customers based on their characteristics, behavior, and churn probability. This segmentation can provide targeted strategies for different customer groups.
* Feature Importance: Determine which features have the most significant impact on churn prediction. Identify key factors that contribute to customer attrition.
* Retention Strategy: Provide recommendations for customer retention strategies based on the analysis. These strategies could include personalized marketing, improved customer service, or targeted promotions.

**Data Collection:**

* The customer data has been collected from the provided source: Telco Customer Churn Dataset. The dataset contains various customer-related attributes such as customer ID, gender, tenure, monthly charges, contract type, payment method, and churn status.

**DATA CLEA NING AND PROCESSING:**

import pandas as pd

data = pd.read\_csv('telco\_customer\_churn.csv')

print(data.head())

print(data.info())

print("Duplicate Rows:", data.duplicated().sum())

data\_encoded = pd.get\_dummies(data, columns=['gender', 'contract', 'payment\_method'])

data\_encoded.to\_csv('cleaned\_telco\_customer\_churn.csv', index=False)

**IBM COGNOS VISULIZATION:**





