DATA ANALYTICS WITH COGNOS

TEAM MEMBER

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Phase - 1 :Document Submission

Project : Telecommunication prediction



TELECOMMUNICATION USING DATA ANALYSTICS WITH COGNOS COGNOS COCOCOKJJJFAJFJCCCCOGNOSCOGNOS

ANALYTICS OBJECTIVES :

The Objective of this project is predicting a customer churn,such as identifying potential churners and

understanding the key factors contributing to churn.It identify the churn patterns,Create predictive models,feature

selection,customer segmentation,etc.By proactively identifying and addressing churn risk factors, businesses can

improve their long-term sustainability and success.

PHASE 1 : Data collection and Feature Engineering

1.DATA SOURCE

Telecommunication companies collect a data from a wide range of sources includes a network

equipment,call detail records,customer relationship management system,billing system,network monitoring tools .

Dataset link : ( <https://www.kaggle.com/datasets/blastchar/telco-customer-churn> )

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Customer ID | gender | SeniorCitizen | Partner | Dependents | tenure | PhoneService | MultipleLines |
| 7590-VHVEG | Female | 0 | Yes | No | 1 | No | No phone service |
| 5575-GNVDE | Male | 0 | No | No | 34 | Yes | No |
| 3668-QPYBK | Male | 0 | No | No | 2 | Yes | No |
| 7795-CFOCW | Male | 0 | No | No | 45 | No | No phone service |
| 9237-HQITU | Female | 0 | No | No | 2 | Yes | No |
| 9305-CDSKC | Female | 0 | No | No | 8 | Yes | Yes |
| 1452-KIOVK | Male | 0 | No | Yes | 22 | Yes | Yes |
| 6713-OKOMC | Female | 0 | No | No | 10 | No | No phone service |
| 7892-POOKP | Female | 0 | Yes | No | 28 | Yes | Yes |
| 6388-TABGU | Male | 0 | No | Yes | 62 | Yes | No |
| 9763-GRSKD | Male | 0 | Yes | Yes | 13 | Yes | No |
| 7469-LKBCI | Male | 0 | No | No | 16 | Yes | No |
| 8091-TTVAX | Male | 0 | Yes | No | 58 | Yes | Yes |
| 0280-XJGEX | Male | 0 | No | No | 49 | Yes | Yes |
| 5129-JLPIS | Male | 0 | No | No | 25 | Yes | No |
| 3655-SNQYZ | Female | 0 | Yes | Yes | 69 | Yes | Yes |
| 8191-XWSZG | Female | 0 | No | No | 52 | Yes | No |
| 9959-WOFKT | Male | 0 | No | Yes | 71 | Yes | Yes |
| 4190-MFLUW | Female | 0 | Yes | Yes | 10 | Yes | No |
| 4183-MYFRB | Female | 0 | No | No | 21 | Yes | No |
| 8779-QRDMV | Male | 1 | No | No | 1 | No | No phone service |
| 1680-VDCWW | Male | 0 | Yes | No | 12 | Yes | No |
| 1066-JKSGK | Male | 0 | No | No | 1 | Yes | No |
| 3638-WEABW | Female | 0 | Yes | No | 58 | Yes | Yes |
| 6322-HRPFA | Male | 0 | Yes | Yes | 49 | Yes | No |
| 6865-JZNKO | Female | 0 | No | No | 30 | Yes | No |
| 6467-CHFZW | Male | 0 | Yes | Yes | 47 | Yes | Yes |
| 8665-UTDHZ | Male | 0 | Yes | Yes | 1 | No | No phone service |
| 5248-YGIJN | Male | 0 | Yes | No | 72 | Yes | Yes |

1. DATA COLLECTION :

In the first step of context of telecommunications or any other industry, data collection is typically

Typically performed using other specialized tools and systems. Here's an overview of how data collection in

telecommunications works, with Cog-nos playing a role in data analysis and reporting not used for direct

collection of data in telecommunications or any other industry.Data collection in telecommunications involves a

complex process of gathering, storing, and processing data from various sources, and specialized tools and systems

are used for each stage of this process. Cog-nos comes into play after the data has been collected and prepared for

analysis, providing a means to visualize and report on the insights gained from the data.

1. VISUALIZATION STRATEGY :

A well-executed visualization strategy can empower telecommunications to make informed decisions,

optimize network performance, enhance customer satisfaction, and drive business growth. It enables stakeholders to

quickly grasp complex data trends and patterns, facilitating more effective decision-making.

1. PREDICTIVE MODELLING :

Predictive modeling in the field of telecommunications involves using historical data and statistical algorithms

to make predictions about future events or outcomes. Data analysts and data scientists in the telecommunications

industry can leverage predictive modeling techniques to address various challenges and opportunities.

PYTHON PROGRAM:

#Import necessary libraries

# Function to predict churn based on inputs

def predict\_churn(customer\_id, gender, senior\_citizen, partner, dependents, phone\_service, tenure, multiple\_lines):

# You would typically use a machine learning model for such predictions

# This is a simplified example and does not use a real model

# Convert binary values (yes/no) to 1/0

partner = 1 if partner.lower() == "yes" else 0

dependents = 1 if dependents.lower() == "yes" else 0

phone\_service = 1 if phone\_service.lower() == "yes" else 0

multiple\_lines = 1 if multiple\_lines.lower() == "yes" else 0

# Example of a simple rule-based prediction

if (senior\_citizen == 1 and tenure < 12) or (partner == 0 and dependents == 0 and tenure < 6):

churn\_prediction = "Yes"

else:

churn\_prediction = "No"

# Print the prediction

print("Customer ID:", customer\_id)

print("Churn Prediction:", churn\_prediction)

# Input values (you can replace these with user input or actual data)

customer\_id = "9237-HQITU"

gender = "Female"

senior\_citizen = 0 # 1 for yes, 0 for no

partner = "Yes" # Yes or No

dependents = "No" # Yes or No

phone\_service = "Yes" # Yes or No

tenure = 2 # Number of months

multiple\_lines = "No" # Yes or No

# Call the predict\_churn function with input values

predict\_churn(customer\_id, gender, senior\_citizen, partner, dependents, phone\_service, tenure, multiple\_lines)

OUTPUT:

Customer ID: 9237-HQITU

Churn Prediction: No

CONCLUSION :

In Phase 1,we have established a clear understanding of our project to predict the churn customer values by using

Data Analytic with Cog-nos.We outlined a structured approach that data collection,predictive modeling,visualization

Modeling.This sets the stage for our projects successfully execution in subsequent phases.