

SYNOPSIS

Project- Telecom Customers data analysis using Google COLAB and MS Excel

TEAM MEMBERS :-

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1. OBJECTIVE:

Data Analytics for JIO Customer Analytics and Churn Prediction using Excel (MS) and Python (GOOGLE COLAB)

2. INTRODUCTION:

The telecom industry is one of the fastest-growing sectors, with millions of users generating large volumes of data daily. Understanding customer behavior, usage patterns, and churn (customer loss) is crucial for improving service quality and retaining users.

This project focuses on analyzing telecom customer data using **Excel** and **Python (Pandas)** to gain insights into factors influencing customer retention and service usage trends.

3. PROBLEM STATEMENT:

The project addresses the problem of **customer churn in the telecom industry**, where companies struggle to retain users due to high charges or poor service.

It aims to **analyze customer data** to identify factors influencing churn using Excel and Python.

The goal is to generate **data-driven insights** that help improve customer retention and satisfaction.

4. OBJECTIVE:

- To analyze telecom customer data and identify patterns in customer usage.
- To study the relationship between factors such as **internet service type, tenure, charges, and churn rate**.
- To visualize customer trends using **Excel charts and Python visualizations**.

- To provide insights that can help reduce churn and improve customer satisfaction.

5. DATASET DETAILS

- Source:** Kaggle – Telco Customer Churn Dataset
- Records:** 7,043 customers (subset of ~1,000 used for analysis)
- Key Fields:**
 - customerID
 - gender
 - tenure (months with the company)
 - InternetService
 - MonthlyCharges
 - TotalCharges
 - Churn (Yes/No)

6. TOOLS AND TECHNOLOGIES

Tool	Purpose
Microsoft Excel	Data cleaning, pivot analysis, and charts
Python (Pandas, Matplotlib, Seaborn)	Data analysis and visualization
Jupyter Notebook / VS Code/COLAB	Python coding environment

7. METHODOLOGY

- Data Collection:**
Download dataset from Kaggle and import into Excel and Python.
- Data Cleaning:**
 - missing values
 - Convert data types (e.g., TotalCharges to numeric)
 - Handle Remove duplicate or irrelevant records
- Exploratory Data Analysis (EDA):**
 - Analyze tenure, monthly charges, and service usage
 - Study churn rate across gender, contract type, and payment method

Visualization:

- Excel charts: bar, pie, and line graphs
- Python visualizations: histograms, heatmaps, box plots

Insight Generation:

- Identify high-risk churn groups
- Suggest retention strategies (e.g., discounts for short-tenure users)

8. EXPECTED OUTCOMES

- Clear visualization of **customer churn trends**.
- Identification of **key factors** leading to churn (like high monthly charges or short tenure).
- Actionable insights to help telecom providers improve customer loyalty.
- Demonstration of how **Excel and Python** can complement each other for business data analytics.

9. CONCLUSION

This project demonstrates how data analytics techniques can be applied in the telecom industry to improve decision-making. By analyzing customer data using Excel and Python, we can uncover valuable insights about user behavior, service quality, and churn prediction. Such insights can help companies retain customers and optimize operational strategies.

10. REFERENCES

- Kaggle Dataset: Telco Customer Churn
- Python Pandas Documentation: <https://pandas.pydata.org/>
- Microsoft Excel Official Documentation: <https://support.microsoft.com/excel>

