**Project Proposal for Group 4: Analysis of Telecom Customer Churn**

**1. Team members – Group 4**

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**2. Rationale for selection**

We want to analyse **customer churn** for a Telecom company. We would like to evaluate several factors to understand why customers might leave. Here are some key reasons we want to evaluate:

* Pricing Dissatisfaction (Monthly charges).
* Contract Type.
* Tenure.
* Generation (Senior citizen).
* Dependents reliance.
* Service Features (Additional services).

**3. Hypothesis Testing**

We have stated a hypothesis for each of the key reasons we will be evaluating and at the end of our analysis, this will be either rejected or accepted.

**Hypothesis 1: Monthly Charges and Churn**

* + *Statement*: Customers with higher monthly charges are more likely to churn.
  + *Reasoning*: Higher monthly charges might lead to customer dissatisfaction, prompting them to seek cheaper alternatives.

**Hypothesis 2: Contract Type and Churn**

* + *Statement*: Customers with month-to-month contracts are more likely to churn compared to those with longer-term contracts.
  + *Reasoning*: Month-to-month contracts provide more flexibility, allowing customers to switch providers more easily.

**Hypothesis 3: Tenure and Churn**

* + *Statement*: Customers with a shorter tenure are more likely to churn.
  + *Reasoning*: New customers may not have formed a strong attachment to the service yet and might be more open to trying other providers.

**Hypothesis 4: Senior Citizens and Churn**

* + *Statement*: Senior citizens are less likely to churn compared to younger customers.
  + *Reasoning*: Senior citizens might have more established routines and be less inclined to switch providers.

**Hypothesis 5: Dependents, Partner and Churn**

* + *Statement: Customers with dependents are less likely to churn compared to those without dependents.*
  + *Reasoning: Families or households may have more entrenched usage and commitments to telecom services, leading to lower churn*.

**Hypothesis 6: Additional Services and Churn**

* + *Statement*: Customers who subscribe to multiple additional services (e.g., streaming TV, device protection) are less likely to churn.
  + *Reasoning*: Customers using multiple services may find more value in their subscription and be less likely to leave.

**4. Objectives**

The main objectives of this project are:

1. **Explore and understand** the key factors influencing customer churn in the telecom industry.
2. **Perform data processing** to clean and prepare the dataset for analysis.
3. **Conduct data analysis** to uncover trends, correlations, and patterns in the data.
4. **Evaluate the data** to classify customers who are likely to churn or stay

**5. Methodology**

**5.1 Data Collection**

* The dataset will be obtained from Kaggle: **Telecom Customer Churn** dataset.

Kaggle Dataset - [**Telco Customer Churn**](https://www.kaggle.com/datasets/blastchar/telco-customer-churn)

* The dataset contains customer demographics, service features, and churn status.

**5.2 Data Cleaning**

* Handling missing values and inconsistencies.
* Converting categorical variables into Boolean format (e.g., using 1,0 for Yes and No)
* Standardizing or normalizing numerical variables.

**5.3 Exploratory Data Analysis (EDA)**

* Summary statistics and data visualization using **Pandas, Matplotlib, Scipy**.
* Distribution analysis of churned vs. non-churned customers.
* Correlation analysis to determine the most influential features.

**5.4 Insights and Recommendations**

* Identifying high-risk customer segments.
* Suggesting strategies for customer retention.
* Presenting key findings through visualization and interpretation.

**6. Expected Outcomes**

* A detailed analysis of customer churn patterns.
* A predictive model capable of identifying customers likely to churn.
* Business recommendations to minimize churn rates.