Project Proposal: Proactive Customer Retention for Telecom Services

1. Problem Identification & Context

In the competitive telecommunications industry, customer churn significantly impacts profitability due to high acquisition costs. This project aims to shift from a reactive to a proactive retention strategy for a fictional company, "ConnectSphere." The goal is to develop a machine learning model that predicts customer churn, enabling the marketing and retention teams to implement targeted campaigns and optimize their budget. The core question is: **Can we leverage customer data to accurately predict churn and enable timely retention interventions?**

2. Criteria for Success

Success will be measured by three key criteria:

- **Model Performance:** Achieve a predictive accuracy of at least 80% and a recall of 75% to ensure most at-risk customers are identified.
- **Actionable Insights:** Deliver a clear analysis of the key factors driving churn through visualizations and a summary report.
- **Deployment Feasibility:** The final model must be easily interpretable by business stakeholders.

3. Scope, Constraints & Stakeholders

The project scope includes exploratory data analysis (EDA), data preprocessing, building and evaluating several classification models (e.g., Logistic Regression, Random Forest), and generating insights from the best-performing model. The project is constrained by the provided dataset, the bootcamp's timeline, and a preference for interpretable models.

- **Primary Stakeholders:** Marketing and Customer Retention Teams.
- **Secondary Stakeholders:** Executive Leadership and the Data Science Team.

4. Data Source

The project will use the "Telco Customer Churn" dataset from Kaggle, which contains 7,043 customer records with 21 attributes covering demographics, account information, and services used. The data will be downloaded directly from the source.

- **Data Source:** Telco Customer Churn on Kaggle

5. Deliverables

The final deliverables will be:

1. **A GitHub Repository:** Containing all code, data, and project documentation.
2. **A Project Report:** A comprehensive document detailing the methodology, analysis, and conclusions.
3. **A Slide Deck:** A presentation summarizing key findings for a non-technical audience.