Project Proposal on

Predictive Analytics for Telco Customer Churn Mitigation.

Group 5 - Data Detectives

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1. Abstract

Project Title: **Predictive Analytics for Telco Customer Churn Mitigation.**

The purpose of this project is to develop a prediction model that can be used to determine the likelihood of Telco customer attrition using the Telco dataset. Over the course of the 12-week period, the team will concentrate on feature engineering, model development, deployment, and data analysis. The resulting model is expected to enhance customer retention efforts, which will benefit Telco by reducing revenue loss linked to customer attrition and promoting a more stable and customer-friendly telecom industry.

Phase	**Activities**	**timeline**	**Contributors**
Data Collection	Gather customer data and prepare datasets	3 weeks	Jagadeesh, Akshitha, Akash
EDA	Analyze data patterns and correlations	3 weeks	Praneeth, Sathwick, Akshitha
Model Deployment	Build and validate predictive model	3 weeks	Jagadeesh, Sathwick,Akash
Implementation	Deploy model and integrate into systems	3 weeks	Akshitha,Praneeth, Akash,Sathwick, Jagadeesh

2. Statement of Need

Issue Addressed and Importance:

The project addresses the critical issue of telco sector customer turnover. Churn reduction is important due to its effects on economics and customer happiness. While recruiting new customers is costly, proactive retention strategies can be put into practice with the help of a predictive model. Reducing churn is essential due to its financial implications and the impact on customer satisfaction. Acquiring new customers is costly, and a predictive model can help implement proactive retention strategies.

Necessity of Proposal:

This proposal is necessary to develop a predictive model capable of identifying potential churners early on. Proactive customer retention can significantly impact the company's bottom line and improve long-term customer relationships.

Benefits and Public Good:

Telco benefits from the initiative because it increases customer satisfaction and reduces revenue loss. By enhancing the general customer experience, promoting a more reliable and user-friendly telecom industry would serve the public interest.

3. Project Activity, Methodology, and Outcomes

Activities

Data Exploration and Preprocessing (1-2-3 weeks):

- Identify and handle missing values.
- Explore statistical distributions of key variables.

Feature Engineering and Selection (4-5 weeks):

- Create new features to enhance model performance.
- Select relevant features based on importance.

Model Development and Training (6-7-8 weeks):

- Develop a predictive model using machine learning algorithms.

- Train the model on historical data.

Model Evaluation and Fine-tuning (9-10 weeks):

- Assess model performance using accuracy, precision, recall, and F1 score.
- Fine-tune the model based on evaluation results.

Deployment of Predictive Model (11-12 weeks):

- Implement the predictive model for real-time customer churn prediction.

Methodology:

- Use historical data for model training and evaluation.
- Metrics: Accuracy, precision, recall, and F1 score.
- Implement cross-validation to ensure model generalizability.

Outcomes

- A predictive model for Telco customer churn.
- Insights into key factors influencing churn.
- Improved decision-making for customer retention strategies.

4. Evaluation

Success Criteria:

- Achieve a model accuracy of at least 80%.
- Demonstrate improved customer retention rates compared to previous strategies.
- Positive feedback from the customer service department on the model's effectiveness.