TELECOM CUSTOMER CHURN PREDICTION

Milestone 1: Project Initialization and Planning Phase

The "Project Initialization and Planning Phase" marks the project's outset, defining goals, scope, and stakeholders. This crucial phase establishes project parameters, identifies key team members, allocates resources, and outlines a realistic timeline. It also involves risk assessment and mitigation planning. Successful initiation sets the foundation for a well-organized and efficiently executed machine learning project, ensuring clarity, alignment, and proactive measures for potential challenges.

Activity 1: Define Problem Statement

Problem Statement A leading telecom company is experiencing increasing customer churn rates despite competitive pricing and marketing efforts. The company aims to identify key factors contributing to churn and develop a predictive model to identify customers at high risk of leaving, to implement targeted retention strategies and reduce churn rates.

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Telecom customer churn prediction Problem Statement Report: Click Here

Activity 2: Project Proposal (Proposed Solution)

The proposed project, "Telecom customer churn prediction," aims to develop a predictive model for a telecom company to identify and reduce customer churn rates. By analyzing extensive customer data, the project will uncover key factors influencing churn and implement targeted retention strategies. The objectives include comprehensive data collection, machine learning model development, deployment in operational environments, and achieving measurable improvements in customer retention and business performance.

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Telecom customer churn prediction Project Proposal Report: Click Here

Activity 3: Initial Project Planning

Initial Project Planning involves outlining key objectives, defining scope, and identifying customers for telecom customer churn prediction. It encompasses setting timelines, allocating resources, and determining the overall project strategy. During this phase, the team establishes a clear understanding of the dataset, formulates goals for analysis, and plans the workflow for data processing. Effective initial planning lays the foundation for a systematic and well-executed project, ensuring successful outcomes.

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Telecom customer churn prediction Project Planning Report: Click Here

Milestone 2: Data Collection and Preprocessing Phase

The Data Collection and Preprocessing Phase involves executing a plan to gather relevant Telecom customer data from Kaggle, ensuring data quality through verification and addressing missing values. Preprocessing tasks include cleaning, encoding, and organizing the dataset for subsequent exploratory analysis and machine learning model development.

Activity 1: Data Collection Plan, Raw Data Sources Identified, Data Quality Report

The dataset for "Telecom customer churn prediction" is sourced from Kaggle. It includes customer details. Data quality is ensured through thorough verification, addressing missing values, and maintaining adherence to ethical guidelines, establishing a reliable foundation for predictive modeling.

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Telecom customer churn prediction Data Collection Report: Click Here

Activity 2: Data Quality Report

The dataset for "Telecom customer churn prediction" is sourced from Kaggle. It includes customers details. Data quality is ensured through thorough verification, addressing missing values, and maintaining adherence to ethical guidelines, establishing a reliable foundation for predictive modeling.

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Telecom customer churn prediction Data Quality Report: Click Here

Activity 3: Data Exploration and Preprocessing

Data Exploration involves analyzing the Telecom customer dataset to understand patterns, distributions, and outliers. Preprocessing includes handling missing values, scaling, and encoding categorical variables. These crucial steps enhance data quality, ensuring the reliability and effectiveness of subsequent analyses in the Telecom customer churn prediction project.

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Telecom customer churn prediction Data Exploration and Preprocessing Report: Click Here

Milestone 3: Model Development Phase

The Model Development Phase entails crafting a predictive model for Telecom Customer churn prediction. It encompasses strategic feature selection, evaluating and selecting models (Random Forest, Decision Tree, KNN, SVM), initiating training with code, and rigorously validating and assessing model performance for informed decision-making in the lending process.

Activity 1: Feature Selection Report

The Feature Selection Report outlines the rational behind choosing specific features (e.g., Gender, Geography, Credit History) for the Telecom customer churn prediction model. It evaluates relevance, importance, and impact on predictive accuracy, ensuring the inclusion of key factors influencing the model's ability to predict churn .

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Telecom Customer Churn Prediction Feature Selection Report: Click Here

Activity 2: Model Selection Report

The Model Selection Report details the rationale behind choosing Random Forest, Decision Tree, KNN, and SVM models for Telecom customer churn prediction. It considers each model's strengths in handling complex relationships, interpretability, adaptability, and overall predictive performance, ensuring an informed choice aligned with project objectives.

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Telecom Customer Churn Prediction Model Selection Report: Click Here

Activity 3: Initial Model Training Code, Model Validation and Evaluation Report

The Initial Model Training Code employs selected algorithms on the Telecom dataset, settig the foundation for predictive modeling. The subsequent Model Validation and Evaluation Report rigorously assesses model performance, employing metrics like accuracy and precision to ensure reliability and effectiveness in predicting churn outcomes.

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Telecom Customer Churn Prediction Model Development Phase Template: Click Here

Milestone 4: Model Optimization and Tuning Phase

The Model Optimization and Tuning Phase involves refining machine learning models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

Activity 1: Hyperparameter Tuning Documentation

The Random Forest model was selected for its superior performance.

Activity 2: Performance Metrics Comparison Report

The Performance Metrics Comparison Report contrasts the baseline and optimized metrics for various models, specifically highlighting the enhanced performance of the Random Forest model.

Activity 3: Final Model Selection Justification

The Final Model Selection Justification articulates the rationale for choosing Random Forest as the ultimate model. Its exceptional accuracy, ability to handle complexity, and successfully align with project objectives, ensuring optimal Telecom Customer churn Prediction.

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Telecom Customer Churn Prediction Model Optimization and Tuning Phase Report: Click Here

Milestone 5: Project Files Submission and Documentation

For project file submission in Github, Kindly click the link and refer to the flow. Click Here

For the documentation, Kindly refer to the link**.** Click Here

Milestone 6: Project Demonstration

In the upcoming module called Project Demonstration, individuals will be required to record a video by sharing their screens. They will need to explain their project and demonstrate its execution during the presentation.