

Frappe Activity: Mobile Phone Activity Classification

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

Customers often face issues with generic and impersonal interactions with mobile applications and services. Without understanding the specific activities and preferences of users, businesses cannot effectively tailor their offerings, leading to suboptimal user satisfaction and engagement.

Mobile Phone Activity Classification Problem Statement Report: [Click here](#)

Activity 2: Project Proposal (Proposed Solution)

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Mobile Phone Activity Project Proposal Report: [Click here](#)

Activity 3: Initial Project Planning

Develop a mobile app to classify activity using Bagging Classifier, Train Classifier to integrate models into mobile application. Ensure data privacy and Security. Optimize app for Low Battery consumption. Model D

evolpment and Training using bagging Classifier. After Risk Mangage

Mobile Phone Activity 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 loan

application 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 "Mobile Phone Activity Classification" is sourced from Kaggle. It includes applicant details and financial metrics. Data quality is ensured through thorough verification, addressing missing values, and maintaining adherence to ethical guidelines, establishing a reliable foundation for predictive modeling.

Mobile Phone Activity Data Collection Report: [Click Here](#)

Activity 2: Data Quality Report

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Mobile Phone Activity Data Quality Report: [Click Here](#)

Activity 3: Data Exploration and Preprocessing

Data Exploration involves analyzing the loan applicant 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 loan approval project.

Mobile Phone Activity Data Exploration and Preprocessing Report: [Click Here](#)

Milestone 3: Model Development Phase

The Model Development Phase entails crafting a predictive model for loan approval. It encompasses strategic feature selection, evaluating and selecting models (Bagging Classifier, Random Forest, Decision Tree, KNN, XGB), 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 rationale behind choosing specific features (e.g., item, daytime, homework).target Variable Homework. Measure the dependency between features and the target Variable. Track metrics such as accuracy, Precision, recall and recall.

Mobile Phone Activity Classification 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 XGB models for mobile phone activity 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.

Mobile Phone Activity 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 Mobile phone Activity approval dataset, setting 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 mobile phone activity outcomes.

Mobile Phone Activity 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 Gradient Boosting model was selected for its superior performance, exhibiting high accuracy during hyperparameter tuning. Its ability to handle complex relationships, minimize overfitting, and optimize predictive accuracy aligns with project objectives, justifying its selection as the final model.

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 Bagging Classifier model. This assessment provides a clear understanding of the refined predictive capabilities achieved through hyperparameter tuning.

Activity 3: Final Model Selection Justification

The Final Model Selection Justification articulates the rationale for choosing Bagging Classifier as the ultimate model. Its exceptional accuracy, ability to handle complexity, and successful hyperparameter tuning align with project objectives, ensuring optimal Mobile Phone Activity predictions.

Mobile Phone Activity 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.