Project Initialization and Planning Phase

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| Date | 01 October 2024 |
| Team ID | LTVIP2024TMID24963 |
| Project Title | Time Series Analysis For Bitcoin Price Pridiction |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) report**

Develop a time series prediction system using machine learning models to forecast Bitcoin prices, aiming to improve trading insights and help users navigate cryptocurrency market volatility.

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| **Project Overview** | |
| Objective | Develop a time series prediction system using machine learning models to forecast Bitcoin prices, aiming to improve trading insights and help users navigate cryptocurrency market volatility. |
| Scope | The project comprehensively assesses and enhances the loan approval process, incorporating machine learning for a more robust and efficient system. |
| **Problem Statement** | |
| Description | The system will analyze past Bitcoin prices using a dataset of timestamps and closing prices to capture trends and patterns that inform future predictions. |
| Impact | By utilizing machine learning models like Random Forest and Decision Tree, the system can process large amounts of historical data, improving accuracy by capturing non-linear patterns and relationships. |
| **Proposed Solution** | |
| Approach | The proposed system will leverage machine learning algorithms, specifically Random Forest and Decision Tree models, to predict future Bitcoin prices based on historical data. Users will input a specific date (year, month, and day) and receive a predicted price for that date. The system will provide an accessible interface for users with various levels of expertise, enabling them to make data-driven trading decisions. |
| Key Features | - Implementation of a machine learning-based bit assessment model. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | T4 GPU |
| Memory | RAM specifications | 8 GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | Flask |
| Libraries | Additional libraries | scikit-learn, pandas, numpy, matplotlib, seaborn |
| Development Environment | IDE | Google colab Notebook, vscode,anaconda |
| **Data** | | |
| Data | Source, size, format | Kaggle dataset, 4269, csv |