**Project Design Phase-I**
**Proposed Solution Template**

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| Date | 15 November 2023 |
| Team ID | Team-591961 |
| Project Name | Project - Time Series Analysis For Bitcoin Price Prediction Using Prophet |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

| S.No. | Parameter | Description |
|---|---|---|
| 1. | Problem Statement (Problem to be solved) | • The cryptocurrency market, particularly Bitcoin, is known for its high volatility and dynamic nature. Traders, investors, and financial analysts often face challenges in accurately predicting the future price movements of Bitcoin.<br>• Traditional financial models struggle to capture the intricate patterns and sudden shifts in the cryptocurrency market, making it crucial to explore advanced techniques for forecasting. |
| 2. | Idea / Solution description | • The proposed solution involves building a robust Bitcoin price prediction system using time series analysis and the Prophet library. This system aims to provide accurate forecasts, insights into market trends, and a user-friendly interface for stakeholders to make informed decisions in the dynamic cryptocurrency market. |
| 3. | Novelty / Uniqueness | • The incorporation of a dynamic model updating mechanism ensures that the prediction model stays relevant by adapting to the latest historical data. This feature addresses the evolving nature of the cryptocurrency market, allowing the model to capture new trends and patterns. |
| 4. | Social Impact / Customer Satisfaction | • By providing accurate and transparent predictions of Bitcoin prices, the solution empowers individual investors, financial institutions, and cryptocurrency enthusiasts to make well-informed decisions. This can |

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| | | contribute to more responsible and strategic investments in the cryptocurrency market. |
| 5. | Business Model (Revenue Model) | • Provide tiered subscription plans with varying levels of access and features.<br>• Differentiate plans based on factors such as the frequency of predictions (e.g., daily, weekly), the depth of analysis, and the duration of historical data available. |
| 6. | Scalability of the Solution | • Implement efficient data processing pipelines to handle large volumes of historical and real-time data. Optimize data retrieval, preprocessing, and feature engineering steps to minimize processing times.<br>• Leverage cloud computing services (e.g., AWS, Google Cloud, Azure) for scalability and flexibility. Cloud platforms offer scalable resources, allowing you to adapt to varying workloads and ensure optimal performance. |