

**Project Design Phase – II**  
**Data Flow Diagram & User Stories**

Date	15 November 2023
Team ID	Team-591961
Project Name	Time Series Analysis For Bitcoin Price Prediction Uisng Prophet
Maximum Marks	4 Marks

**DFD(Data Flow Diagram):**

Data Sources:

Bitcoin Price Data: This represents the raw data source, typically obtained from various cryptocurrency exchanges or financial data providers. It includes historical Bitcoin price data.

Preprocessing:

Data Cleaning: This involves cleaning the raw data, handling missing values, outliers, or any inconsistencies.

Data Transformation: It includes steps like normalization, scaling, or feature engineering to prepare the data for time series analysis.

Prophet Model:

Prophet Algorithm: The Prophet model, developed by Facebook, performs time series forecasting based on the prepared data.

Prediction Output:

Forecasted Bitcoin Prices: The output of the Prophet model, providing predicted Bitcoin prices for future time periods.

Explanation:

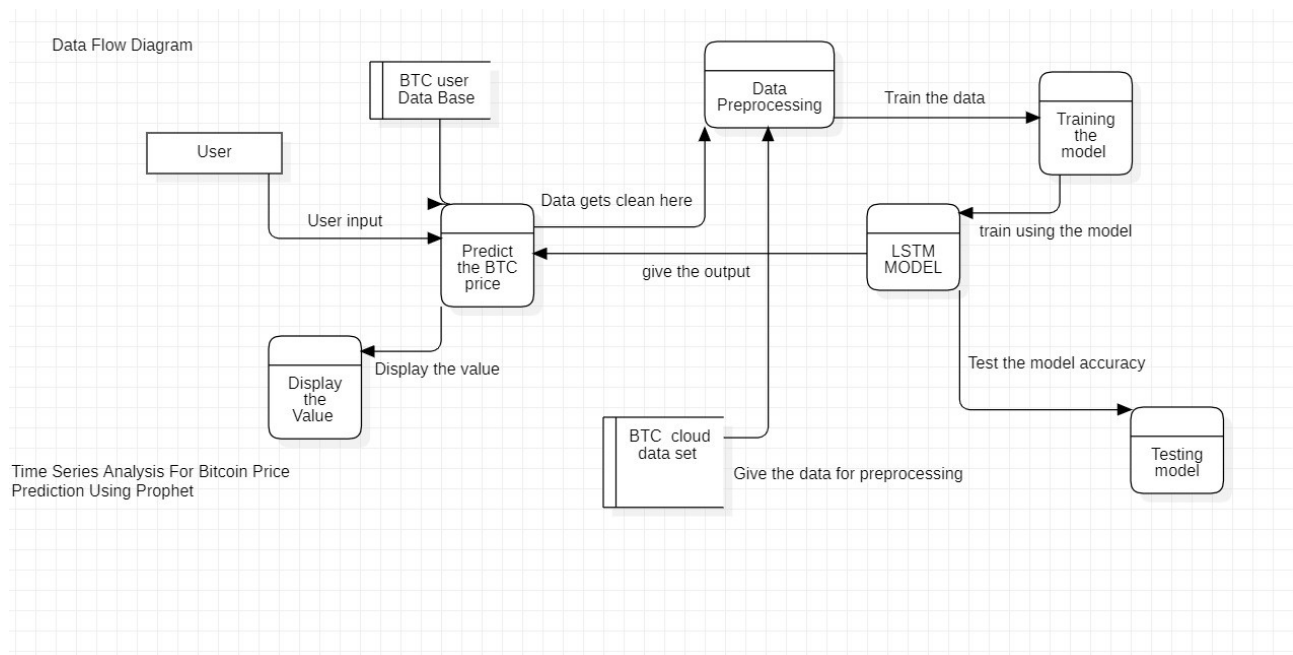
Data Sources: Raw Bitcoin price data is the starting point, sourced from cryptocurrency exchanges or data providers.

Preprocessing: Before analysis, the data needs to be cleaned and transformed into a suitable format for time series analysis. This step involves handling missing values, outliers, and preparing the data for modeling.

Prophet Model: The prepared data is fed into the Prophet algorithm, which applies time series forecasting techniques to predict future Bitcoin prices based on historical patterns.

**Prediction Output:** The forecasted Bitcoin prices are the final output generated by the Prophet model, providing insights into potential future price trends.

This level 0 DFD gives a high-level view of the process, emphasizing the major steps involved without delving into the specific sub-processes or detailed interactions between components.



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User Type	Functional Requirement	User story no	User Story	Acceptance Criteria	Priority
Custo mer	Get insights into future Bitcoin price trends	usno-1	As a customer, I want to use the time series analysis for Bitcoin price prediction using Prophet model to get insights into future Bitcoin price trends.	1. I can access and view the Bitcoin price forecasts generated by the Prophet model. 2. I can understand the trends in Bitcoin prices based on the forecasts. 3. I can use the insights gained from the analysis to make informed decisions about my Bitcoin investments.	High
Data Analyst	Forecast future Bitcoin prices using time series analysis	usno-2	As a data analyst, I want to use the Prophet model to forecast future Bitcoin prices.	1. The Prophet model is trained on historical Bitcoin price data. 2. The model generates forecasts for future Bitcoin prices. 3. The forecasts are accurate and reliable.	Medium
Data Analyst	Visualize Bitcoin price forecasts	usno-3	As a data analyst, I want to visualize the forecasts generated by the Prophet model.	1. The forecasts are visualized in a clear and concise manner. 2. The visualizations are easy to understand and interpret.	Low
Data Analyst	Analyze Bitcoin price trends	usno-4	As a data analyst, I want to analyze the trends in Bitcoin prices using the Prophet model.	1. The Prophet model identifies trends in Bitcoin prices. 2. The trends are analyzed and interpreted. 3. The insights gained from the analysis are used to make informed decisions.	Medium

