**GROUP PROJECT PROPOSAL**

Project Members:

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1. **Title of the Project**

“Predictive Modeling of Cryptocurrency Prices Using Regression Analysis”

1. **Business Problem or Question**

The purpose of this project is to create a prediction model that can accurately forecast future cryptocurrency prices. This forecast can help traders, investors, and analysts in making informed decisions within the dynamic and volatile cryptocurrency market.

1. **Data Sources**

We’ll largely use historical cryptocurrency price data from the Yahoo Finance database, specifically the ‘BTC-USD’ (Bitcoin), ‘ETH-USD’ (Ethereum), and ‘ADA-USD’ (Cardano) pairs. This dataset will include daily price statistics, trade volumes, and other key aspects that influence the market dynamics of cryptocurrency.

1. **Type of Modeling Approach**

When predicting cryptocurrency prices, regression modeling is the preferred method because it is well-suited for estimating continuous numerical values such as price. Different regression techniques like time series and polynomial regression are used to capture the intricate patterns found in cryptocurrency price data that change over time and are not linear. This approach enables accurate predictions by considering multiple factors and historical price trends based on extensive past data.

1. **Project Approach**

For this project, we will use the Cross-Industry Standard Process for Data Mining (CRISP-DM) technique.

The phases of the CRISP-DM framework are as follows:

Business Understanding: Define the project’s objectives and problem statement.

Data Understanding: Explore and assess the quality of all the datasets.

Data Preparation: Clean and transform the data for model training.

Modeling: Develop machine learning models to predict Bitcoin prices.

Evaluation: Assess model performance and fine-tune as needed.

Deployment: Implement the model for real-world use.

This method will allow us to address each component of the project in a systematic manner and provide a well-structured solution.

1. **Significant Assumptions or Constraints**

* We believe that prior price trends and patterns in cryptocurrency will continue to have some predictive ability.
* We recognize that cryptocurrency markets are very volatile and influenced by a variety of external factors, making it difficult to attain high prediction accuracy.
* This project may not consider unforeseen events or news that can have a rapid and major influence on cryptocurrency values.

1. **Adapting Existing Work**

This project does not directly modify previously published work but rather expands on earlier research and applications in the field of cryptocurrency price prediction. To improve on existing predictive models, we will use the most recent machine learning techniques and tools.

1. **Deviations from Project Requirements**

We do not wish to deviate from the project specifications given in the syllabus. We will follow the directions provided and complete the project within the timeframe specified.

The accuracy of my cryptocurrency price predictions and the model's usefulness for real-world applications will determine the project's success. We hope to provide significant insights into the unpredictable world of cryptocurrency trading and investment by combining historical data and powerful machine learning algorithms.