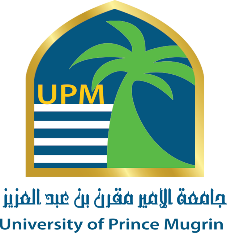
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**Project Report**

**Bitcoin Price Predictor**

**Data Mining – AI306**

**Team Members**

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# Abstract

* Brief overview of the study’s objective: predicting Bitcoin prices
* Summary of methodology: data sources, models used
* Key findings and implications

# Introduction

* Background on Bitcoin and its market significance
* Motivation for accurate price prediction
* Research objectives and questions

# Literature Review (Related Work)

* Overview of existing Bitcoin price prediction approaches
* Summary of traditional statistical methods (e.g., ARIMA)
* Review of machine learning and deep learning models used in prior studies
* Identification of research gaps and challenges

# Experiments

## a- Data Description

* Source(s) of Bitcoin price data
* Timeframe covered
* Features collected (e.g., open, close, volume, technical indicators)

## b- Data Preprocessing

* Handling missing values and outliers
* Feature engineering (e.g., lag features, moving averages)
* Data normalization or scaling
* Splitting data into training and test sets

## c- Models Built

* Description of baseline models (e.g., Linear Regression, ARIMA)
* Advanced models (e.g., Random Forest, LSTM, GRU)
* Hyperparameter tuning strategies

## d- Results

* Evaluation metrics (e.g., RMSE, MAE, R²)
* Comparative performance of models
* Visualization of predictions vs. actual prices

# Interpretation & Discussion

* Analysis of model performance
* Discussion of factors influencing prediction accuracy
* Limitations of the study
* Implications for traders and researchers

# Conclusion

* Recap of main findings
* Contributions to the field
* Suggestions for future work

# References

* List of all academic papers, datasets, and tools cited in the report