

Programming for AI - Final Project Journal

Multi-Crypto Price Analysis: Comparative Study and Unified Insights

Group M: Muhammad Adeel Iqbal (23380225)

GitHub link : https://github.com/iAnisdev/final_ms_ai_pai.git

Task	Activity/Work	Contributions	Tools/Technologies Used	Date/Time
Initial meeting	Project communication and setup	Discuss the goals of the project. Identify the project topic.	MS Teams	02/12/2024 2 hours and 09/12/2024 1 hours
Research	Research on cryptocurrency price prediction using LSTM	<ul style="list-style-type: none">- Conducted comparative analysis of BTC, ETH, BNB, and SOL prices.- Explored trends and forecasted prices using machine learning.- Developed insights for financial forecasting.	Python, LSTM, Time-series Analysis	13/12/2024
Project Development	Implementation of a database for cryptocurrency analysis	<ul style="list-style-type: none">- Designed and created tables for cryptocurrencies (Bitcoin, Ethereum, Binance, Solana).- Inserted sample data into tables.- Ensured robust structure with conflict handling.	PostgreSQL, asyncpg, Python	16/12/2024 to 20/12/2024

Development	Built a Python script for database management	<ul style="list-style-type: none"> - Automated table creation and data insertion. - Utilized asynchronous database connectivity for better performance. - Integrated exception handling. 	Python, asyncpg, PostgreSQL	21/12/2024 to 28/12/2024
Literature Review	Researched advanced methods for cryptocurrency forecasting	<ul style="list-style-type: none"> - Analyzed past studies leveraging statistical and machine learning approaches. - Explored hybrid techniques combining sentiment analysis and deep learning models. 	Research Papers, Internet Sources	21/12/2024 to 28/12/2024
Machine Learning	Applied LSTM to predict cryptocurrency trends	<ul style="list-style-type: none"> - Implemented recurrent neural networks to process time-series data. - Compared results with traditional models for accuracy and efficiency. 	LSTM, Python, TensorFlow	21/12/2024 to 28/12/2024
Database Operations	Designed and tested database queries to support data retrieval	<ul style="list-style-type: none"> - Developed SQL scripts for efficient data insertion and retrieval. - Validated data accuracy through timestamp handling and normalization. 	SQL, PostgreSQL	21/12/2024 to 28/12/2024
Testing and Debugging	Validated the database and application functionality	<ul style="list-style-type: none"> - Debugged connection issues and ensured smooth database integration. - Added test datasets to validate functionality and assess robustness. 	Asyncpg, PostgreSQL	28/12/2024
Report Writing	Write the complete report and merge into the final group report	Contributed into introduction and Literature Review in details.	Microsoft word & PDF	30/12/2024
Video Record	Recorded the video of my work	Recorded all my work and contributions in the project	Laptop/Mobile/Video Editors	06/01/2025