Project 1 - On an area you are not familiar with

Overview

The idea of this project is to work on a problem in the blockchain/cryptocurrency space that combines data collection, analysis, and machine learning. Your task is to ==collect transaction histories and portfolio data for cryptocurrency wallets, then lay the foundation for building a model that ranks wallets based on their historical performance or activity==.

Why Are We Doing This?

We aim to create a mobile app that provides insights into wallet performance based on historical transactions and portfolio holdings. This app will leverage machine learning to rank wallets by their activity, profitability, or other performance metrics. End users can subscribe to track high-performing wallets, analyze their activity, and use this data for decision-making.

Data Collection

This task focuses on the first step of the project: collecting data about cryptocurrency wallet activities. Specifically, you will:

1. **Identify Wallet History**:
   o Use the list of wallet addresses provided and collect their transaction histories. Focus on extracting this data from crypto ecosystems using blockchain explorers or APIs.
   o For this task, you can use Solana blockchain explorer like Solscan.
2. **Transaction History and Portfolio Data**:
   o For each wallet, gather:
      ▪ **Transaction history**: Details such as timestamps, token transfers, transaction amounts, and counterparties.
      ▪ **Portfolio data**: Snapshot of the assets currently held by the wallet (e.g., token balances, NFT holdings).
   o Ensure the final dataset contains wallet addresses, historical transactions, and portfolio details.
   o Store this data in a structured format (e.g., CSV or database).

Goal for the Next Step

The data you collect will serve as the input for a machine learning model. The goal of the model is to rank wallets based on performance indicators, such as:

- Return on investment (ROI).
- Trading frequency.
- Activity level (e.g., number of transactions, volume).
- Portfolio Volatility (Measure the standard deviation of the wallet's portfolio returns over time).
- Sharpe Ratio (Evaluates risk-adjusted returns by comparing the portfolio's return relative to its volatility).
- Historical Loss Ratios (Calculate the percentage of historical trades resulting in losses).

Submission Guidelines

- Push your code and dataset to GitHub and share the link.
- Include a README file with:
   o A description of your approach.
   o Instructions to run your code.
   o Time spent and any notable challenges or optimizations.
- Be prepared to discuss your solution, alternative approaches, and potential improvements during the follow-up call.