Roostoo <> KodeKurrent

Problem Statement Title: AI Web3 Trading Bot Hackathon Challenge

Category: Artificial Intelligence, Finance, Trading

Hardware/Software: Software (Exchange Backend APIs), AI Bot, Python or any equivalent tech stack.

Scope:

- The competition will run for a **24-hour live trading window** during the hackathon.
- Teams will have at least **one week** prior to the event to prepare and some dedicated time during the hackathon to finalize, build, and deploy their bots before the competition starts.

Late Join Policy:
A bot can join after the competition begins, but any bot joining **6 hours or more** after the start will face a **3% penalty** on its portfolio return rate.

Problem Description:

Develop an AI-driven **trading algorithm** to compete on our **real-time mock exchange backend.** Using the APIs provided at [Roostoo API Documents] (https://github.com/roostoo/Roostoo-API-Documents), your goal is to design a trading bot that maximizes portfolio returns while minimizing risk, measured through the Sharpe Ratio. This challenge is a unique opportunity to showcase your algorithmic trading and AI skills in an intense, real-time, competitive environment of crypto markets.

Requirements:

- Build a trading bot capable of interfacing with the **Roostoo mock exchange APIs** to fetch market data (using GET requests) and execute trades (using POST requests).
- Use the endpoints provided to retrieve **real-time market prices**, and place trade orders (Refer to [Roostoo API Docs] (https://github.com/roostoo/Roostoo-API-Documents) for technical details.)
- All available coins are listed on the Roostoo App - [app.roostoo.com] (http://app.roostoo.com) or the API docs.
- No trading limitation on the type or amount of coins, as long as they are available in the APIs.
- The bot must autonomously make **buy and sell decisions** based on a pre-defined or adaptive strategy.

Additional remarks:

- ❖ Strategies and bot usages are open ended, there is no limitation or pre-defined rule. One can even copy existing PPO agents or any trading agents and strategies out there to

apply to this bot competition. Or create your own custom from scratch.
❖ Roostoo will also display bot names on the roostoo app as a competition amongst different teams, with real-life leaderboards.

Additional Notes:

- Open-Ended Strategies:
    - Participants are free to copy, design and implement any trading strategy. Whether you leverage an existing **PPO agent**, adapt pre-built trading algorithms, or create your own custom strategy from scratch, the choice is yours.
    - This open-ended approach allows participants to focus on what it matters – select the optimal best way to achieve the best result.

- Leaderboard Visibility:
    - Roostoo will feature a **live leaderboard** in its app, displaying bot names and team rankings in real-time. Compete for the top spot and show off your bot's performance to the entire community.

- Two Evaluation Criteria:
    - Primary – Sharpe Ratio: The bot with the highest (best) Sharpe Ratio wins. It will be used to evaluate the balance between risk and return.

      Sharpe Ratio = Portfolio Return - Risk-Free rate (0.1%) / Standard Deviation of Portfolio's access return (Portfolio snapshot every one hour)
    - Secondary – Portfolio Return:* Additionally, the team/bot with the highest portfolio return also will win the title (if not from the same bot/team that wins the primary metric Sharpe Ratio).