

Project Title: Python Console-Based Stock Trading Simulator - "PyTrade Sim"

Project Description:

"PyTrade Sim" is a console-based stock trading simulator designed to teach students Python programming through the implementation of real-world concepts like financial markets and trading strategies. This project will help students enhance their understanding of Python data structures, file handling, and basic mathematical computations used in financial analysis.

Game Rules:

1. The simulator starts with a set amount of virtual money that players can use to buy and sell stocks.
2. Players can choose from a list of available stocks to trade, with prices updating each "day" of simulation based on predefined volatility or randomly generated changes.
3. Players can buy stocks if they have enough virtual money, or sell stocks they currently own.
4. The goal is to maximize the portfolio value through strategic buying and selling.
5. The simulation runs for a fixed number of days, or until the player decides to end the simulation.

Key Features:

- A daily update function that simulates stock price changes and provides new prices at the start of each trading day.
- Portfolio management functions to buy, sell, and view current stock holdings and available cash.
- A function to calculate total portfolio value, including cash and the market value of held stocks.
- Basic financial indicators for stocks to aid in decision-making, such as price-to-earnings ratio, daily percentage change, etc.