Finance/Data Science Projects with Python

- Beginner:
- Simple Stock Price Tracker: Build a script that uses a library like yfinance to fetch real-time or historical stock prices and display them. You can use libraries such as pandas for data manipulation and matplotlib for basic charting. - 1 week (estimates)

- Budget and Expense Tracker: Create a command-line application that allows a user to input their expenses and income. The script should save the data to a CSV file and display summaries, perhaps broken down by category. - 2 weeks

- Exploratory Data Analysis (EDA): Use a public financial dataset from a source like Kaggle to perform an EDA. Analyze things like GDP data, company financial reports, or historical stock data to create visualizations and uncover initial insights. - 2 weeks

- Analyze Financial Reports: Use web scraping tools like BeautifulSoup to extract data from a company's financial reports. You can then use pandas to analyze key metrics like revenue, profit, and earnings per share. - 2 weeks

- Intermediate:
- Stock Market Time-Series Forecasting: Use historical stock price data and apply time-series models like ARIMA or LSTM networks to predict future prices. Visualize your model's predictions against the actual data to evaluate its performance. - 3 weeks

- Financial News Sentiment Analyzer: Scrape financial news headlines from a site like Reuters or a financial news API. Use Natural Language Processing (NLP) techniques to perform sentiment analysis to determine if market sentiment is positive, negative, or neutral. - 3 weeks

- Advanced:
- Financial Risk Analysis with Monte Carlo Simulations: For a given portfolio, use Monte Carlo simulations to model the potential future performance and estimate risk. This involves simulating thousands of possible market scenarios to create a probability distribution of future outcomes. - 5 weeks