Product Owner exam

Project instructions

Your task is to create Epics and User Stories (with technical refinement) to create an MVP for a application (web-based) that allows you to search for Stock Market price. As an additional reference there should be only 3 Epics (API Management (using Yahoo Finance API - A Complete Guide - AlgoTrading101 Blog) - Front End (inc Search and price changes) - Chart). You can create as many User Story as you want for this MVP. (we recommend quality over quantity)

Be as detailed as possible (consider that this also needs refinement). Bear in mind that Development team needs to understand in order to develop/code them. Technical proposal, detail and grooming are key for this position.

Out of Scope: UX / CX / Error handling / Mobile support.

Bonus points: Business Canvas - Process diagram or any other flow/user persona

example:

How to submit

Upload your completed project to your GitHub, and then paste a link to the repository below in the form along with any comments you have about your solution.

Intro

Stock market price search tools definition

Stock market price search tools are online applications or software that enable users to search and retrieve real-time or historical stock market prices for specific stocks or securities. These tools provide users with a convenient way to access up-to-date market data, allowing them to make informed investment decisions or stay updated on the performance of specific stocks.

The main purpose of stock market price search tools is to provide users with quick and easy access to current and historical pricing information for stocks traded on various exchanges. These tools typically integrate with reliable data sources, such as financial market data providers or APIs, to fetch and display the desired stock market prices.

Key features and capabilities of stock market price search tools may include:

1. Search Functionality: Tools often include a search bar or a symbol lookup feature, enabling users to search for specific stocks by their name, symbol, or other identifying information.
2. Real-Time Pricing: The tools display real-time or delayed stock market prices, including the current price, bid-ask spread, volume, and other relevant details.
3. Historical Data: Users can access historical price charts or data for stocks, allowing them to analyze price trends over specific time periods and make informed investment decisions.
4. Additional Information: Some tools provide additional information about stocks, such as company profiles, financial ratios, news, and related market data.
5. Watchlist and Alerts: Users can create personalized watchlists to monitor specific stocks of interest and set up price alerts or notifications for price changes or specific events.
6. User-Friendly Interface: The tools offer a user-friendly interface with intuitive navigation, clear presentation of data, and customizable settings to enhance the user experience.
7. Integration with Other Tools or Platforms: Some stock market price search tools may integrate with portfolio management systems, trading platforms, or financial analysis tools to provide a comprehensive investment solution.

Overall, stock market price search tools are designed to empower investors, traders, and individuals interested in the stock market by providing them with quick and reliable access to current and historical stock market prices, facilitating better decision-making and market analysis.

MVP

Based on the epics and user stories, the MVP for the web-based application would include:

1. API integration to fetch real-time stock market data.
2. Search bar functionality to search for stocks and display current stock prices.
3. Clear and user-friendly presentation of search results.
4. Basic historical price chart displaying key price points for a specified time range.

Epic 1: API Management

- As a developer, I want to integrate with yfinance data API to retrieve accurate stock prices

yfinance documentation here: yfinance

we have to save data in our database and is recommended to cache the timezone for the following reason:

When fetching price data, all dates are localized to stock exchange timezone. But timezone retrieval is relatively slow, so yfinance attemps to cache them in your users cache folder. You can direct cache to use a different location with `set_tz_cache_location()`:

User stories

- As a developer, I want to set up API credentials and ensure secure communication with the yfinance API

we need to connect to yfinance API to retrieve the information

- As a developer, I want to implement API integration to fetch real-time stock market data and save them into a database

we need to fetch the stock market data and store into a database to make them available for a chart.

- As a developer, I want to regularly monitor the API's performance and ensure data accuracy.

we need to make sure that API is responding well cause the nature of data is time-sensitive and any delay can cause loss of money. Is important to have a keep-alive and check accuracy of data stored

Epic 2: Front-end with search and graphic change

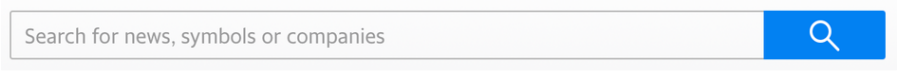
- As a user, I want to search for stock market prices and see real-time changes in prices for specific stocks.

we are defining the front-end offering to platform users the possibility to search for specific stock , check stock price and see price changes

User stories

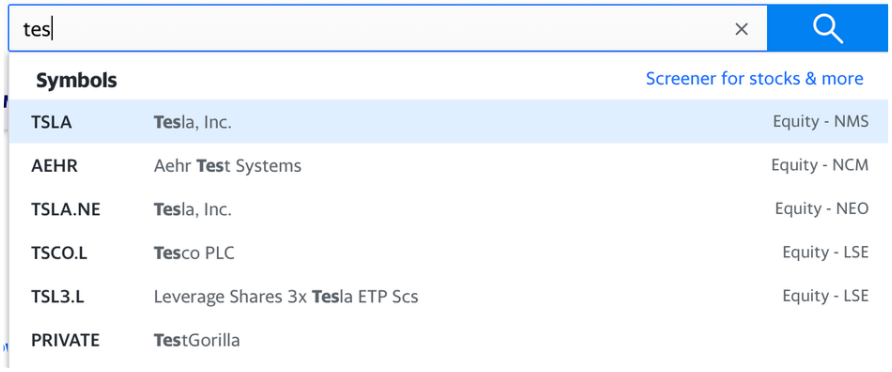
- As a user, I want to see a search bar where I can enter the name or symbol of a stock.

this bar will be used to write the name of stock that user want to check price.



- As a user, I want to receive suggestions or autocomplete options as I type in the search bar.

when user start typing the name in the bar , the system can start searching values available in our database, if there is a match system can show different results and user can click on desired one. If there are no match , will be displayed a message “no results found”



- As a user, I want to view the current stock price, company name, symbol, and latest price change for the searched stock.

when user click on an existing stock, he can see relevant information about stock

most relevant data are stock name , actual price, price difference, price trend in green or red if is positive or negative

From yfinance API we need to collect the relevant data and display the requested information.

optional epics(not for MVP)

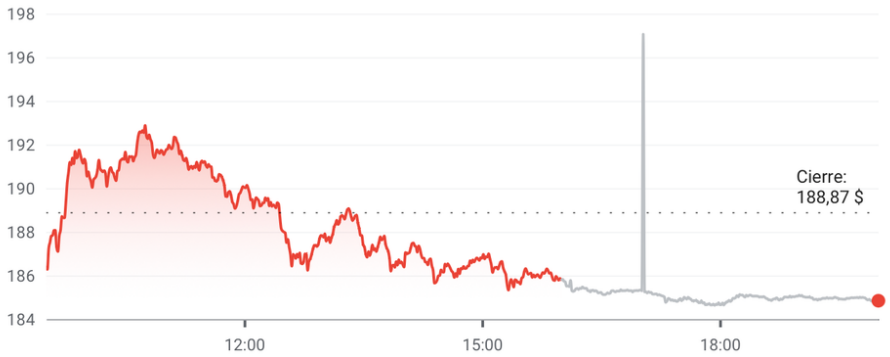
- As a user, I want the search results to be displayed in a clear and user-friendly manner.
- As a user, I want the ability to save stocks to a watchlist for quick access in the future.
- As a user, I want to be notified of real-time price changes for the stocks in my watchlist.
- As a user, I want to be able to remove stocks from my watchlist.

Epic 3: Chart

- As a user, I want to view historical price charts for a specific stock, see different time ranges and perform data analysis like checking value difference in a specific range

User Stories:

- As a user, I want to see a visual representation of historical price data in the form of a chart.



on the x axis there is time and on y axis there is price

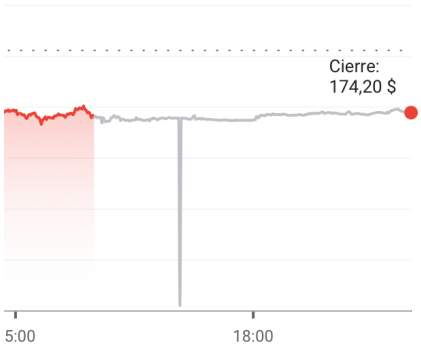
- As a user, I want to be able to specify the time range for the price chart (e.g., 1 day, 1 week, 1 month, etc.).

we can provide different views of price history with different options

we can retrieve the data from api and store in the database. if there is already information available in the database for this stock the system need to compare the data with existing one to confirm that they are correct. in case of discrepancy can be raised an internal warning

- As a user, I want the chart to display key price points (e.g., opening, closing, high, low) for each time interval.

chart can display the previous closing in the day view and we can display the retrieved information from api for the all the time period in a separate tab on the right side of graph



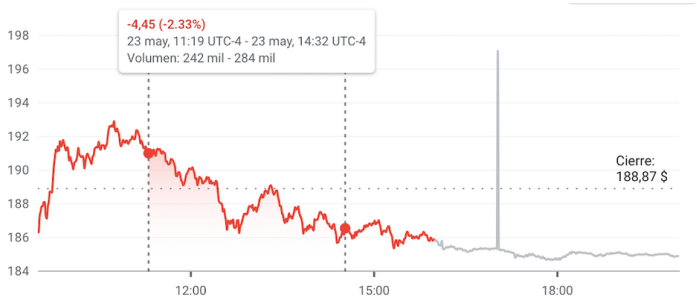
Acción | Valor cotizado en EE. UU. | Sede en EE. UU.

CIERRE ANTERIOR	174,20 $
INTERVALO DIARIO	171,28 $ - 173,38 $
INTERVALO ANUAL	124,17 $ - 176,39 $
CAP. BURSÁTIL	2,70 B USD
VOLUMEN MEDIO	54,50 M
RELACIÓN PRECIO-BENEFICIO	29,15
RENTABILIDAD POR DIVIDENDO	0,56 %
BOLSA DE VALORES PRINCIPAL	NASDAQ

CALIFICACIÓN CLIMÁTICA DE CDP
A-

- As a user, I want the chart to be interactive, allowing me to see price for time selected

and see the price difference between 2 times.



for this implementation we take data from DB and make calculation to have the difference