Attached zip file contains daily prices for stocks like AAPL, MSFT, NFLX and TSLA. The csv file for each stock has the following structure –

Date,Open,High,Low,Close,Adj Close,Volume

The first column is the date

The second column is the open price for the day

The third column is the highest price on the day

The fourth column is the lowest price on the day

The fifth column is the closing price for the day

Please ignore the sixth and seventh columns.

Problem statement

Write a program to provide the following information –

1. For a given stock (AAPL, MSFT, NFLX, TSLA) and year, read the corresponding csv file and write a function to compute the maximum profit you can earn by buying and selling the stock once in the given year.

Assumptions

1. You need to buy the stock first and then sell the stock.
2. You can't buy and sell the stock on the same day.
3. Profit is the difference between buy and sell prices.
4. You can only buy once and sell once.
5. If the price of stock is continuously decreasing over the year, then the max profit will be zero. Essentially profit is >= 0.

Expected Functions and Output

1. Create a function maxProfit that will take 2 arguments (stock name and year, like AAPL and 2024). We need to parse the csv file for AAPL (AAPL.csv). The output should be a resource object(RO) that contains the following fields –
    a. Buy date
    b. Buy price
    c. Sell date
    d. Sell price
    e. Profit
2. Create a main function that will take 2 arguments (stock name and year, like AAPL and 2024) and delegate to maxProfit function. Get the response RO from maxProfit function and print the following –
    a. Buy date
    b. Buy price
    c. Sell date

> d. Sell price
> e. Profit

3. In main function, print only non-null fields.
4. Write unit tests for the maxProfit function. Please ensure proper unit test coverage accounting for various scenarios.
5. Please ensure proper null & exception handling.

Code delivery

1. You can use any programming language (with Java being the preferred language). You can prefer to use any open source packages (like to parse csv files).
2. If you are using third party packages, please provide instructions on how to build and run the code in a README.txt file.
3. Please provide instructions on how to build and run the code (including unit tests).
4. Zip the code (along with instructions) and email back within 48 hours.