Python Problem Assessment

Problem Statements

1. Problem Statement:

You have been given a dataset containing sales data for a retail store. The data is stored in a CSV file with the following columns: 'Date', 'Store', 'Department', 'Weekly_Sales'

About the Data:

You are provided with historical sales data for 45 stores located in different regions - each store contains a few departments. The company also runs several promotional markdown events throughout the year. These markdowns precede prominent holidays, the four largest of which are the Super Bowl, Labor Day, Thanksgiving, and Christmas. The weeks including these holidays are weighted five times higher in the evaluation than non-holiday weeks.

Your task is to read the data from the file and perform the following transformations:

1. **Convert the date column into a proper date format and set it as the index of the DataFrame.**
2. **Calculate the daily returns for each day.**
3. **Plot the daily returns using a line plot.**
4. **Present it in one slider ppt for showing the insights gathered. (Optional for additional points)**

Essentials:

- **Dataset Download Link:** assessment\v02\problem_1_data
- **Passing Assessment Criteria: 8/10**
- **Additional pointers: 2 (for extra exploration)**

Completion Time: 30 mins expected

2. Problem Statement:

You have been given a dataset containing daily stock prices of few companies. The data is stored in a CSV file with the following columns: 'Date', 'Close Price'. Your task is to create a class named (e.g. StockData) that performs the following transformations when an instance of the class is created:

About the Data:

The data is the price history and trading volumes of the fifty stocks in the index NIFTY 50 from NSE (National Stock Exchange) India. All datasets are at a day-level with pricing and trading values split across .csv files for each stock along with a metadata file with some macro-information about the stocks itself. The data spans from 1st January, 2000 to 30th April, 2021. Ignore the file **"stock_metadata.csv"** as it contains information on different stocks and possible columns that are present within each csv sheet.

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Your task is to read the data and perform the following operations:

1. **Reads the data from multiple CSV files.**
2. **Converts the date column into a proper date format and sets it as the index of the DataFrame.**
3. **Calculates average exchange volume for all shares.**
4. **Plots the weekly volumes for top 5 shares (compare the last seen prices for all shares) using a line plot.**
5. **Present it in one slider ppt for showing the insights gathered. (Optional for additional points)**

Essentials:

- **Dataset Download Link:** assessment\v02\problem_2_data
- **Passing Assessment Criteria: 8/10**
- **Additional pointers: 2 (for extra exploration)**

Completion Time: 45 mins expected

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