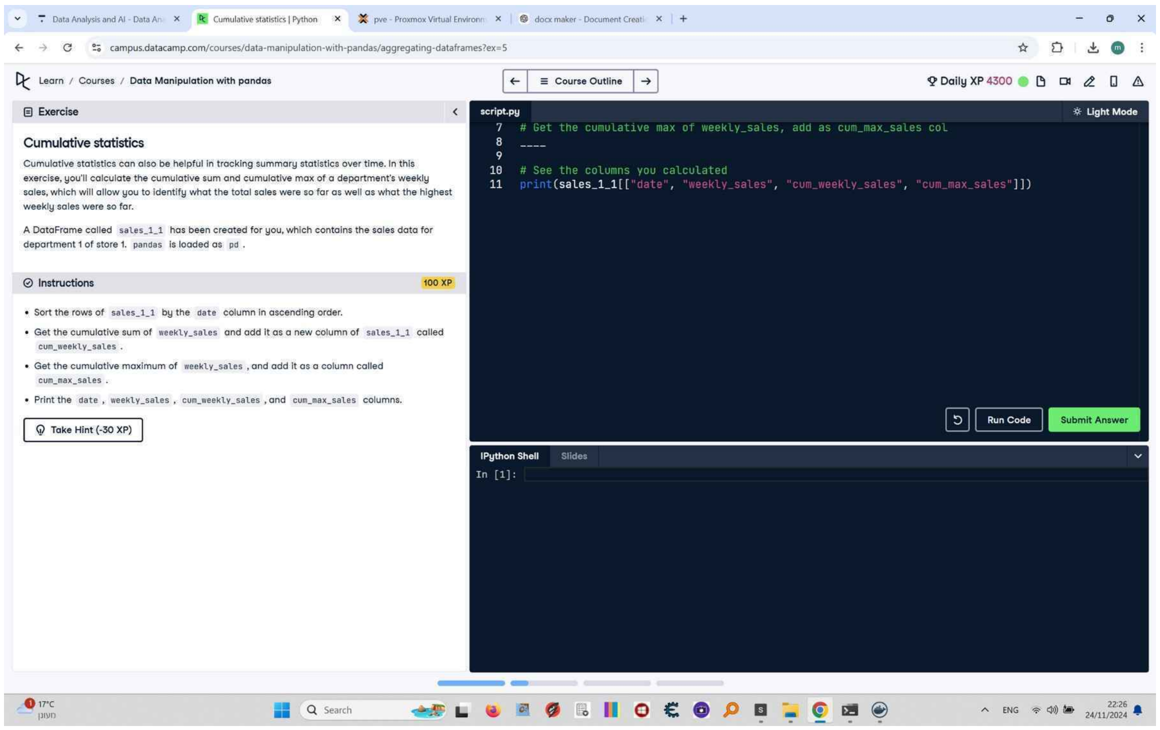
Cumulative Statistics (Solution)

This document includes the question, the solution, and a breakdown of the code provided in the screenshot.

Uploaded Screenshot

Below is the screenshot of the task:



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campus.datacamp.com/courses/data-manipulation-with-pandas/aggregating-dataframes?ex=5
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Slides

Cumulative statistics

Cumulative statistics can also be helpful in tracking summary statistics over time. In this exercise, you'll calculate the cumulative sum and cumulative max of a department's weekly sales, which will allow you to identify what the total sales were so far as well as what the highest weekly sales were so far.

A DataFrame called `sales_1_1` has been created for you, which contains the sales data for department 1 of store 1. `pandas` is loaded as `pd`.

Instructions

- Sort the rows of `sales_1_1` by the `date` column in ascending order.
- Get the cumulative sum of `weekly_sales` and add it as a new column of `sales_1_1` called `cum_weekly_sales`.
- Get the cumulative maximum of `weekly_sales`, and add it as a column called `cum_max_sales`.
- Print the `date`, `weekly_sales`, `cum_weekly_sales`, and `cum_max_sales` columns.

```python
# Get the cumulative max of weekly_sales, add as cum_max_sales col
----

# See the columns you calculated
print(sales_1_1[["date", "weekly_sales", "cum_weekly_sales", "cum_max_sales"]])
```

```
In [1]:
```

Question

1. Sort the rows of `sales_1_1` by the `date` column in ascending order.
2. Get the cumulative sum of `weekly_sales` and add it as a new column of `sales_1_1` called `cum_weekly_sales`.
3. Get the cumulative maximum of `weekly_sales` and add it as a column called `cum_max_sales`.
4. Print the `date`, `weekly_sales`, `cum_weekly_sales`, and `cum_max_sales` columns.

Answer

# Sort rows by date
sales_1_1 = sales_1_1.sort_values('date')

Get the cumulative sum of weekly_sales
sales_1_1['cum_weekly_sales'] = sales_1_1['weekly_sales'].cumsum()

```
# Get the cumulative maximum of weekly_sales
sales_1_1['cum_max_sales'] = sales_1_1['weekly_sales'].cummax()

# Print the specified columns
print(sales_1_1[['date', 'weekly_sales', 'cum_weekly_sales',
'cum_max_sales']])
```

Code Explanation

# Explanation of the code:

1. `sales_1_1.sort_values('date')`: Sorts the `sales_1_1` DataFrame by the `date` column in ascending order.

2. `sales_1_1['cum_weekly_sales'] = sales_1_1['weekly_sales'].cumsum()`: Calculates the cumulative sum of the `weekly_sales` column and adds it as a new column called `cum_weekly_sales`.

3. `sales_1_1['cum_max_sales'] = sales_1_1['weekly_sales'].cummax()`: Calculates the cumulative maximum of the `weekly_sales` column and adds it as a new column called `cum_max_sales`.

4. `print(sales_1_1[['date', 'weekly_sales', 'cum_weekly_sales', 'cum_max_sales']])`: Prints the `date`, `weekly_sales`, `cum_weekly_sales`, and `cum_max_sales` columns from the `sales_1_1` DataFrame.