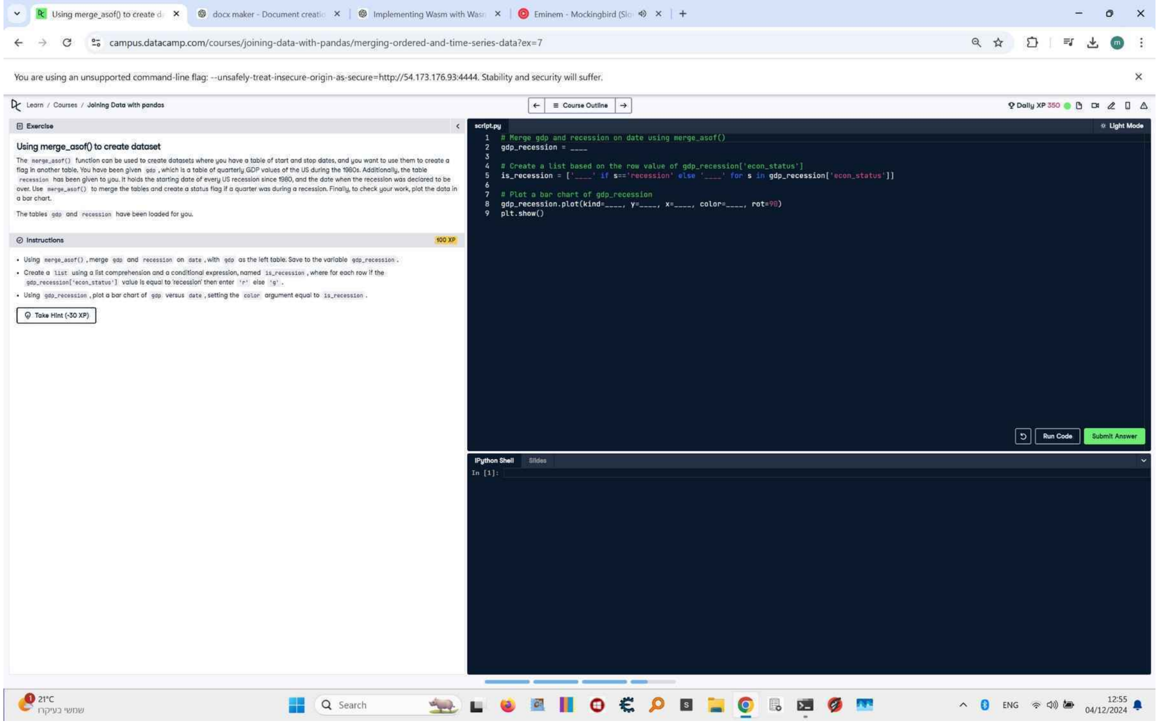
Using merge_asof() to create dataset - Corrected



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Learn / Courses / Joining Data with pandas

Exercise

Using merge_asof() to create dataset

The `merge_asof()` function can be used to create datasets where you have a table of start and stop dates, and you want to use them to create a flag in another table. You have been given `gdp`, which is a table of quarterly GDP values of the US during the 1980s. Additionally, the table `recession` has been given to you. It holds the starting date of every US recession since 1980, and the date when the recession was declared to be over. Use `merge_asof()` to merge the tables and create a status flag if a quarter was during a recession. Finally, to check your work, plot the data in a bar chart.

The tables `gdp` and `recession` have been loaded for you.

Instructions 100 XP

- Using `merge_asof()`, merge `gdp` and `recession` on `date`, with `gdp` as the left table. Save to the variable `gdp_recession`.
- Create a `list` using a list comprehension and a conditional expression, named `is_recession`, where for each row if the `gdp_recession['econ_status']` value is equal to 'recession' then enter `'r'` else `'g'`.
- Using `gdp_recession`, plot a bar chart of `gdp` versus `date`, setting the `color` argument equal to `is_recession`.

script.py

```
# Merge gdp and recession on date using merge_asof()
gdp_recession = ____

# Create a list based on the row value of gdp_recession['econ_status']
is_recession = ['____' if s=='recession' else '____' for s in gdp_recession['econ_status']]

# Plot a bar chart of gdp_recession
gdp_recession.plot(kind=____, y=____, x=____, color=____, rot=90)
plt.show()
```

IPython Shell

```
In [1]:
```

Question:

Using merge_asof(), merge gdp and recession on date, with gdp as the left table. Save to the variable gdp_recession. Create a list using a list comprehension and a conditional expression, named is_recession, where for each row if the gdp_recession['econ_status'] value is equal to 'recession' then enter 'r' else 'g'. Using gdp_recession, plot a bar chart of gdp versus date, setting the color argument equal to is_recession.

Answer:

```
# Merge gdp and recession on date using merge_asof
gdp_recession = pd.merge_asof(
    gdp, recession,
    on='date'
)

# Create a list based on the row value of gdp_recession['econ_status']
is_recession = [
    'r' if s == 'recession' else 'g'
    for s in gdp_recession['econ_status']
]

# Plot a bar chart of gdp_recession
```

```
gdp_recession.plot(
    kind='bar',
    x='date',
    y='gdp',
    color=is_recession,
    rot=90
)
plt.show()
```

Code Explanation:

1. gdp_recession = pd.merge_asof(...):
   This line merges the gdp and recession dataframes on the 'date' column using the 'merge_asof' function. The 'gdp' dataframe is set as the left table, aligning rows based on the nearest previous date.

2. is_recession = [...]:
   This line creates a list comprehension that iterates through each value in the 'econ_status' column of the gdp_recession dataframe. If the value is 'recession', 'r' is added to the list; otherwise, 'g' is added.

3. gdp_recession.plot(...):
   This line creates a bar chart of the 'gdp' values versus 'date' from the gdp_recession dataframe. The 'color' argument is set to the is_recession list, coloring the bars red ('r') or green ('g') based on the economic status.