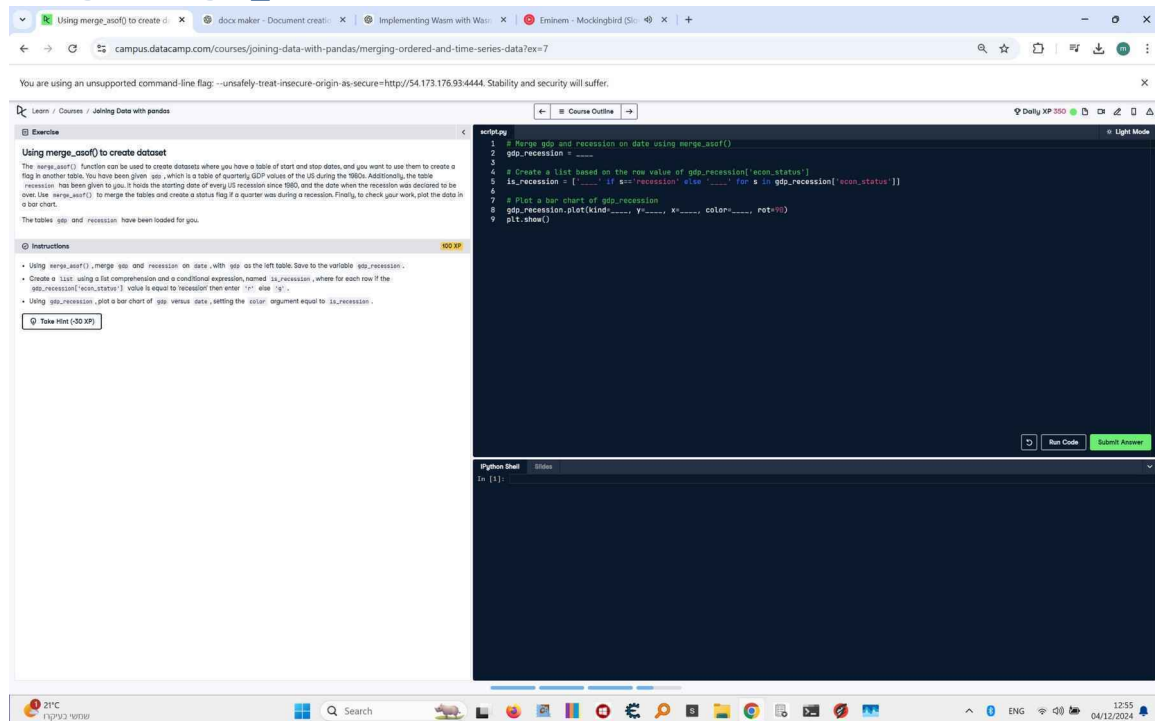


## Using merge\_asof() to create dataset - Corrected



You are using an unsupported command-line flag: --unsafely-treat-insecure-origin-as-secure=http://54.173.176.93:4444. Stability and security will suffer.

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

- 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.

Take Hint (30 XP)

```
1 # Merge gdp and recession on date using merge_asof()
2 gdp_recession = pd.merge_asof(
3     gdp, recession,
4     on='date'
5 )
6 # Create a list based on the row value of gdp_recession['econ_status']
7 is_recession = ['r' if s == 'recession' else 'g' for s in gdp_recession['econ_status']]
8 # Plot a bar chart of gdp_recession
9 gdp_recession.plot(kind='bar', x='date', color=is_recession, rot=90)
10 plt.show()
```

Run Code Submit Answer

Python 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.