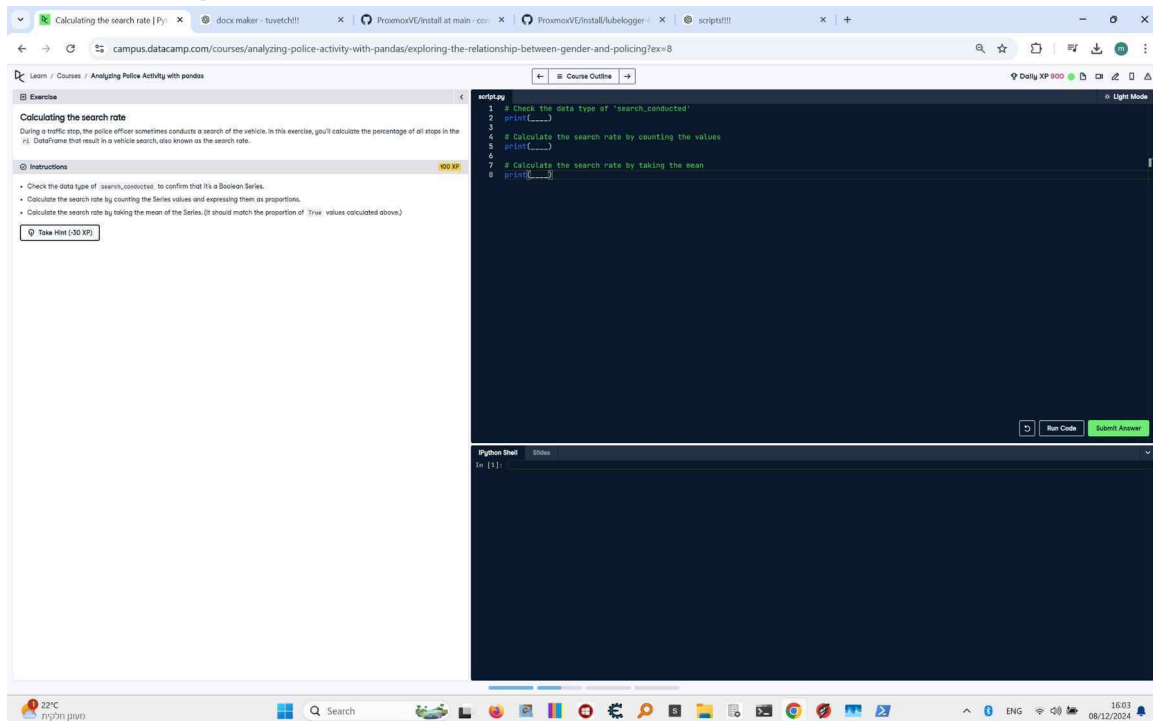


# Calculating the Search Rate



The screenshot shows a web browser window with multiple tabs. The active tab is titled 'Calculating the search rate | Py'. The address bar shows the URL 'campus.datacamp.com/courses/analyzing-police-activity-with-pandas/exploring-the-relationship-between-gender-and-policing/ex=8'. The page content includes an 'Exercise' section with the title 'Calculating the search rate' and instructions. The instructions are as follows:

- Check the data type of 'search\_conducted' to confirm that it's a Boolean Series.
- Calculate the search rate by counting the Series values and expressing them as proportions.
- Calculate the search rate by taking the mean of the Series (it should match the proportion of True values calculated above).

Below the instructions is a 'Take Hint (30 XP)' button. To the right of the instructions is a code editor with a Python script:

```
1 # Check the data type of 'search_conducted'
2 print(ri['search_conducted'].dtype)
3
4 # Calculate the search rate by counting the values
5 print(ri['search_conducted'].value_counts(normalize=True))
6
7 # Calculate the search rate by taking the mean
8 print(ri['search_conducted'].mean())
```

At the bottom of the code editor are buttons for 'Run Code' and 'Submit Answer'. Below the code editor is a 'Python Shell' window showing the output of the first line of code: 'In [1]:'.

## Task Description

1. Check the data type of 'search\_conducted' to confirm that it's a Boolean Series.
2. Calculate the search rate by counting the Series values and expressing them as proportions.
3. Calculate the search rate by taking the mean of the Series (it should match the proportion of True values calculated above).

## Code Solution

```
# Check the data type of 'search_conducted'
print(ri['search_conducted'].dtype)
```

```
# Calculate the search rate by counting the values
print(ri['search_conducted'].value_counts(normalize=True))
```

```
# Calculate the search rate by taking the mean
print(ri['search_conducted'].mean())
```

## Code Explanation

1. The line 'print(ri['search\_conducted'].dtype)' confirms the data type of the 'search\_conducted' column. It should be of Boolean type (True/False values) for proper calculations.

2. The line `print(ri['search_conducted'].value_counts(normalize=True))` calculates the proportion of True and False values in the 'search\_conducted' column. The `normalize=True` argument expresses the counts as proportions.
3. The line `print(ri['search_conducted'].mean())` calculates the mean of the Boolean Series, which represents the proportion of True values (i.e., the search rate). This method provides the same result as the normalized value count.