

Inspecting a DataFrame - Descriptive Statistics

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:

The screenshot shows a web-based learning environment. On the left, the 'Exercise' panel for 'Inspecting a DataFrame' provides instructions and context. It states that `.head()` returns the first few rows, `.info()` shows column information, `.shape` returns row and column counts, and `.describe()` calculates summary statistics. It also defines the `homelessness` DataFrame with columns: `region`, `state`, `individuals`, `family_members`, and `state_pop`. The task instruction is to 'Print some summary statistics that describe the homelessness DataFrame.' A 'Take Hint (-7 XP)' button is present.

On the right, the 'script.py' editor contains the following code:

```
1 # Print the head of the homelessness data
2 print(homelessness.head())
3
4 # Print information about homelessness
5 print(homelessness.info())
6
7 # Print the shape of homelessness
8 print(homelessness.shape)
9
10 # Print a description of homelessness
11 print(_____)
```

Below the code editor, the 'iPython Shell' displays the output of the first two commands:

```
Data columns (total 5 columns):
# Column      Non-Null Count  Dtype
---
0 region      51 non-null    object
1 state       51 non-null    object
2 individuals  51 non-null    float64
3 family_members  51 non-null    float64
4 state_pop   51 non-null    int64
dtypes: float64(2), int64(1), object(2)
memory usage: 2.4+ KB
None
(51, 5)
```

The prompt 'In [1]:' is visible at the bottom of the shell.

Question

Print some summary statistics that describe the homelessness DataFrame.

Answer

```
# Print the head of the homelessness data
print(homelessness.head())
```

```
# Print information about homelessness
print(homelessness.info())
```

```
# Print the shape of homelessness
print(homelessness.shape)
```

```
# Print a description of homelessness
print(homelessness.describe())
```

Code Explanation

Explanation of the code:

1. ``print(homelessness.head())``: Displays the first five rows of the DataFrame for a quick preview.
2. ``print(homelessness.info())``: Provides detailed information about the columns, including data types and non-null counts.
3. ``print(homelessness.shape)``: Outputs a tuple ``(number_of_rows, number_of_columns)`` representing the DataFrame dimensions.
4. ``print(homelessness.describe())``: Computes and prints summary statistics for the numeric columns in the DataFrame, such as mean, standard deviation, min, max, and quartiles.