

Calculating Probabilities - Step 1/3

The screenshot shows a web-based learning interface. At the top, a navigation bar includes a logo, the text 'Learn / Courses / Introduction to Statistics In Python', a 'Course Outline' button, and a 'Daily XP 1206' indicator. The main content area is divided into two columns. The left column, titled 'Exercise', contains the heading 'Calculating probabilities' and a paragraph: 'You're in charge of the sales team, and it's time for performance reviews, starting with Amir. As part of the review, you want to randomly select a few of the deals that he's worked on over the past year so that you can look at them more deeply. Before you start selecting deals, you'll first figure out what the chances are of selecting certain deals.' Below this, it says 'Recall that the probability of an event can be calculated by' followed by the formula
$$P(\text{event}) = \frac{\text{\# ways event can happen}}{\text{total \# of possible outcomes}}$$
 and a note: 'Both pandas as pd and numpy as np are loaded and amir_deals is available.' A progress bar shows 'Instructions 1/3' with a '35 XP' reward and three steps, the first of which is active. A hint button 'Take Hint (-10 XP)' is present. The right column features a code editor with a dark theme, showing a script named 'script.py' with three lines: a comment '# Count the deals for each product', an assignment 'counts = ----', and a print statement 'print(counts)'. Below the editor are buttons for 'Run Code' and 'Submit Answer'. At the bottom of the right column is an 'IPython Shell' window with a 'Slides' tab, showing 'In [1]:' followed by a blank line.

Learn / Courses / Introduction to Statistics In Python

Course Outline

Daily XP 1206

Exercise

Calculating probabilities

You're in charge of the sales team, and it's time for performance reviews, starting with Amir. As part of the review, you want to randomly select a few of the deals that he's worked on over the past year so that you can look at them more deeply. Before you start selecting deals, you'll first figure out what the chances are of selecting certain deals.

Recall that the probability of an event can be calculated by

$$P(\text{event}) = \frac{\text{\# ways event can happen}}{\text{total \# of possible outcomes}}$$

Both pandas as pd and numpy as np are loaded and amir_deals is available.

Instructions 1/3 35 XP 1 2 3

- Count the number of deals Amir worked on for each product type using .value_counts() and store in counts .

Take Hint (-10 XP)

```
script.py
1 # Count the deals for each product
2 counts = ----
3 print(counts)
```

Run Code Submit Answer

IPython Shell Slides

In [1]:

Figure: Screenshot showing the exercise for calculating probabilities by counting the number of deals Amir worked on for each product type.

Question

You're in charge of the sales team, and it's time for performance reviews, starting with Amir. As part of the review, you want to randomly select a few of the deals that he's worked on over the past year so that you can look at them more deeply. Before you start selecting deals, you'll first figure out what the chances are of selecting certain deals.

****Instructions:****

1. Count the number of deals Amir worked on for each product type using `.value_counts()` and store in `counts`.
2. Print the resulting counts to identify the distribution of deals across product types.

Corrected Code Solution

```
import pandas as pd

# Count the deals for each product
counts = amir_deals['product'].value_counts()
print(counts)
```

Answer Explanation

1. ****Using `.value_counts()`:** This method counts the occurrences of each unique value in the `product` column of the `amir_deals` DataFrame. It provides a quick way to summarize the number of deals Amir worked on for each product type.
2. ****Purpose:**** Knowing the distribution of deals is essential for calculating probabilities of selecting deals of specific product types during a random selection process.
3. ****Output:**** The counts are printed, showing the frequency of each product type in Amir's dataset. This forms the basis for subsequent probability calculations.