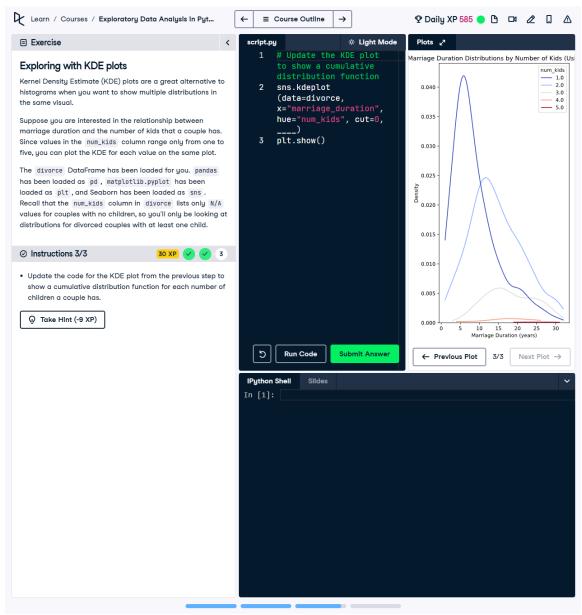
Updating KDE Plot to Show Cumulative Distribution Function



Question

Update the code for the KDE plot from the previous step to show a cumulative distribution function for each number of children a couple has.

Explanation of the Question

This task involves modifying the KDE plot to represent cumulative distribution functions (CDFs) instead of density estimates. A CDF shows the probability that a variable takes a value less than or equal to a specific value.

Answer

```
# Update the KDE plot to show cumulative distribution function import seaborn as sns import matplotlib.pyplot as plt

sns.kdeplot(
    data=divorce,
    x="marriage_duration",
    hue="num_kids",
    cumulative=True, # Enable cumulative distribution
    cut=0, # Restrict KDE smoothing to the data range
    palette="coolwarm"
)
plt.title("Cumulative Distribution of Marriage Duration by Number of Kids")
plt.xlabel("Marriage Duration (years)")
plt.ylabel("Cumulative Probability")
plt.show()
```

Explanation of the Answer

The code enables the cumulative distribution function (CDF) in the KDE plot by setting cumulative=True. This converts the density plot into a cumulative plot, showing the proportion of data points below each value. Other enhancements like cut and labels improve clarity and visualization.