DHC-TASK # 1 (Code)

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# Importing libraries
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
# Load the Iris dataset
df = sns.load_dataset("iris")
# Basic dataset information
print("Shape of dataset:", df.shape)
print("Column names:", df.columns.tolist())
print("\nFirst five rows:")
print(df.head())
# Summary statistics
print("\nDataset Info:")
print(df.info())
print("\nSummary Statistics:")
print(df.describe())
# Scatter plot: Sepal length vs Sepal width
plt.figure(figsize=(6, 4),)
sns.scatterplot(x="sepal_length", y="sepal_width", hue="species", data=df)
plt.title("Sepal Length vs Width")
plt.xlabel("Sepal Length (cm)")
plt.ylabel("Sepal Width (cm)")
plt.show()
# Scatter plot: Petal length vs Petal width
plt.figure(figsize=(6, 4))
sns.scatterplot(x="petal_length", y="petal_width", hue="species", data=df)
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plt.title("Petal Length vs Width")
plt.xlabel("Petal Length (cm)")
plt.ylabel("Petal Width (cm)")
plt.show()
# Histograms for all numeric features
df.hist(figsize=(16, 12), bins=20, color='purple',edgecolor='black')
plt.suptitle("Histograms of Features", fontsize=16)
plt.tight_layout()
plt.show()
# Box plots to see distribution and outliers
plt.figure(figsize=(10, 6))
sns.boxplot(data=df)
plt.title("Box Plots of All Features")
plt.xticks(rotation=45)
plt.show()
# Pair plot for a complete feature overview
sns.pairplot(df, hue="species")
plt.suptitle("Pair Plot of Iris Dataset", y=1.02)
plt.show()
```