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# Step 1: Import libraries
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

# Step 2: Load dataset
df = sns.load_dataset("iris")

# Step 3: Basic dataset info
print("First 5 rows:\n", df.head())
print("\nShape of dataset:", df.shape)
print("\nData types:\n", df.dtypes)
print("\nSummary statistics:\n", df.describe())
print("\nMissing values:\n", df.isnull().sum())

# Step 4: Data visualization
df.hist(figsize=(10,6))
plt.show()

sns.pairplot(df, hue="species")
plt.show()

sns.heatmap(df.corr(), annot=True, cmap="coolwarm")
plt.show()

sns.boxplot(x="species", y="sepal_length", data=df)
plt.show()
```



First 5 rows:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

Shape of dataset: (150, 5)

Data types:

sepal_length	float64
sepal_width	float64
petal_length	float64
petal_width	float64
species	object
dtype:	object

Summary statistics:

	sepal_length	sepal_width	petal_length	petal_width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.057333	3.758000	1.199333
std	0.828066	0.435866	1.765298	0.762238
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

Missing values:

sepal_length	0
sepal_width	0
petal_length	0
petal_width	0
species	0
dtype:	int64

