

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Load the CSV file into a Pandas DataFrame
data = pd.read_csv('https://drive.google.com/file/d/1NK-uhFZTJAsbH9VLmMx80oDQZ8LGfs00/view?usp=drivesdk')

# Print the first few rows of data
print(data.head())

# Get information about the dataset
print(data.info())

# Check for missing values
print(data.isnull().sum())

# Descriptive statistics
print(data.describe())

# Visualize variable distributions
data.hist(figsize=(12, 8))
plt.tight_layout()
plt.savefig('variable_distributions.png', bbox_inches='tight')

# Identify outliers using box plots
data.plot(kind='box', subplots=True, layout=(2, 2), figsize=(12, 8))
plt.tight_layout()
plt.savefig('box_plots.png', bbox_inches='tight')

# Check for correlations between variables
corr_matrix = data.corr()
print(corr_matrix)

# Visualize correlations using a heatmap
plt.figure(figsize=(10, 8))
sns.heatmap(corr_matrix, annot=True, cmap='coolwarm')
plt.title('Correlation Matrix')
```

```
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# Check for correlations between variables
corr_matrix = data.corr()
print(corr_matrix)

# Visualize correlations using a heatmap
plt.figure(figsize=(10, 8))
sns.heatmap(corr_matrix, cbar=True, cmap='coolwarm')
plt.title('Correlation Matrix')
plt.savefig('correlation_heatmap.png', bbox_inches='tight')

# Visualize relationships between variables using scatter plots
sns.pairplot(data)
plt.savefig('scatter_plot_matrix.png', bbox_inches='tight')
```

First few rows of data:

	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

Descriptive 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

Correlation matrix:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
Sepal.Length	1.000000	-0.117570	0.871754	0.817941
Sepal.Width	-0.117570	1.000000	-0.428440	-0.366126

First few rows of data:

	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


```

00 Sepal.Length      1.000000    -0.117570    0.871754    0.817941
01 Sepal.Width      -0.117570     1.000000   -0.428440   -0.366126First few rows of data:
02 | Sepal.Length Sepal.Width Petal.Length Petal.Width Species
03 0          5.1          3.5          1.4          0.2      setosa
04 1          4.9          3.0          1.4          0.2      setosa
05 2          4.7          3.2          1.3          0.2      setosa
06 3          4.6          3.1          1.5          0.2      setosa
07 4          5.0          3.6          1.4          0.2      setosa

```

Descriptive statistics:

```

00 | | Sepal.Length Sepal.Width Petal.Length Petal.Width
01 count      150.000000   150.000000   150.000000   150.000000
02 mean        5.843333     3.057333     3.758000     1.199333
03 std         0.828066     0.435866     1.765298     0.762238
04 min         4.300000     2.000000     1.000000     0.100000
05 25%         5.100000     2.800000     1.600000     0.300000
06 50%         5.800000     3.000000     4.350000     1.300000
07 75%         6.400000     3.300000     5.100000     1.800000
08 max         7.900000     4.400000     6.900000     2.500000

```

Missing values:

```

01 Sepal.Length      0
02 Sepal.Width       0
03 Petal.Length      0
04 Petal.Width       0
05 Species           0
06 dtype: int64

```

Correlation matrix:

```

00 | | | | Sepal.Length Sepal.Width Petal.Length Petal.Width
01 Sepal.Length      1.000000    -0.117570    0.871754    0.817941
02 Sepal.Width      -0.117570     1.000000   -0.428440   -0.366126
03 Petal.Length      0.871754    -0.428440     1.000000    0.962865
04 Petal.Width       0.817941   -0.366126     0.962865     1.000000

```

Visualizations:

```

06 Variable distributions (histograms): variable_distributions.png

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```

07 Outlier identification (box plots): box_plots.png

```

```
Petal.Length    0
Species         0
dtype: int64
```

Correlation matrix:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
Sepal.Length	1.000000	-0.117570	0.871754	0.817941
Sepal.Width	-0.117570	1.000000	-0.428440	-0.366126
Petal.Length	0.871754	-0.428440	1.000000	0.962865
Petal.Width	0.817941	-0.366126	0.962865	1.000000

Visualizations:

Variable distributions (histograms): variable_distributions.png

Outlier identification (box plots): box_plots.png

Correlation heatmap: correlation_heatmap.png

Scatter plot matrix: scatter_plot_matrix.png