```
# Import necessary libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.datasets import load_iris
from sklearn.preprocessing import StandardScaler
from pandas.plotting import parallel_coordinates


# Load the Iris dataset
iris = load_iris()


# Convert the dataset into a DataFrame for easier manipulation
df = pd.DataFrame(data=iris.data, columns=iris.feature_names)


# Add the target variable (species) to the DataFrame
df['species'] = pd.Categorical.from_codes(iris.target, iris.target_names)


# Display the first few rows to get an overview of the dataset
df.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	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

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```
# Standardizing the features to bring them to the same scale
scaler = StandardScaler()
```

```
# Create a new DataFrame to store the scaled data
df_scaled = df.copy()

# Apply scaling to the features (exclude the target variable 'species')
df_scaled[df.columns[:-1]] = scaler.fit_transform(df[df.columns[:-1]])

# Display the scaled data
df_scaled.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	species
0	-0.900681	1.019004	-1.340227	-1.315444	setosa
1	-1.143017	-0.131979	-1.340227	-1.315444	setosa
2	-1.385353	0.328414	-1.397064	-1.315444	setosa
3	-1.506521	0.098217	-1.283389	-1.315444	setosa
4	-1.021849	1.249201	-1.340227	-1.315444	setosa

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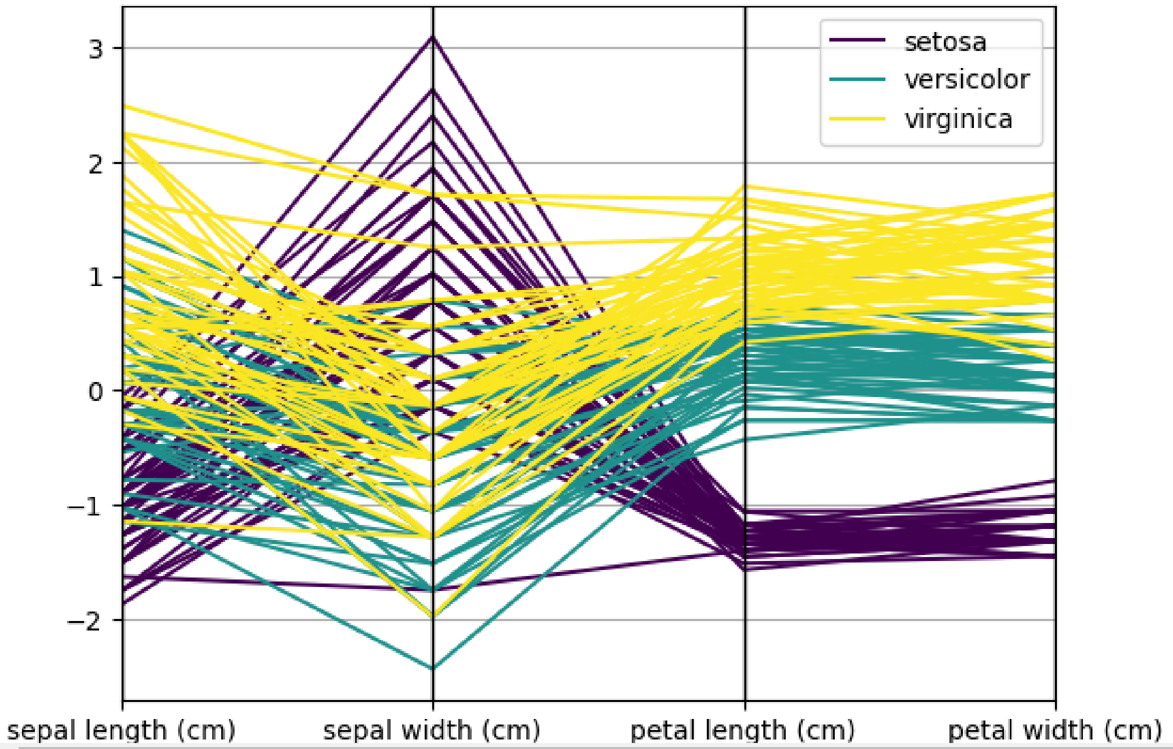
```
# Plot the parallel coordinates
plt.figure(figsize=(12, 6))
```

```
<Figure size 1200x600 with 0 Axes>
<Figure size 1200x600 with 0 Axes>
```

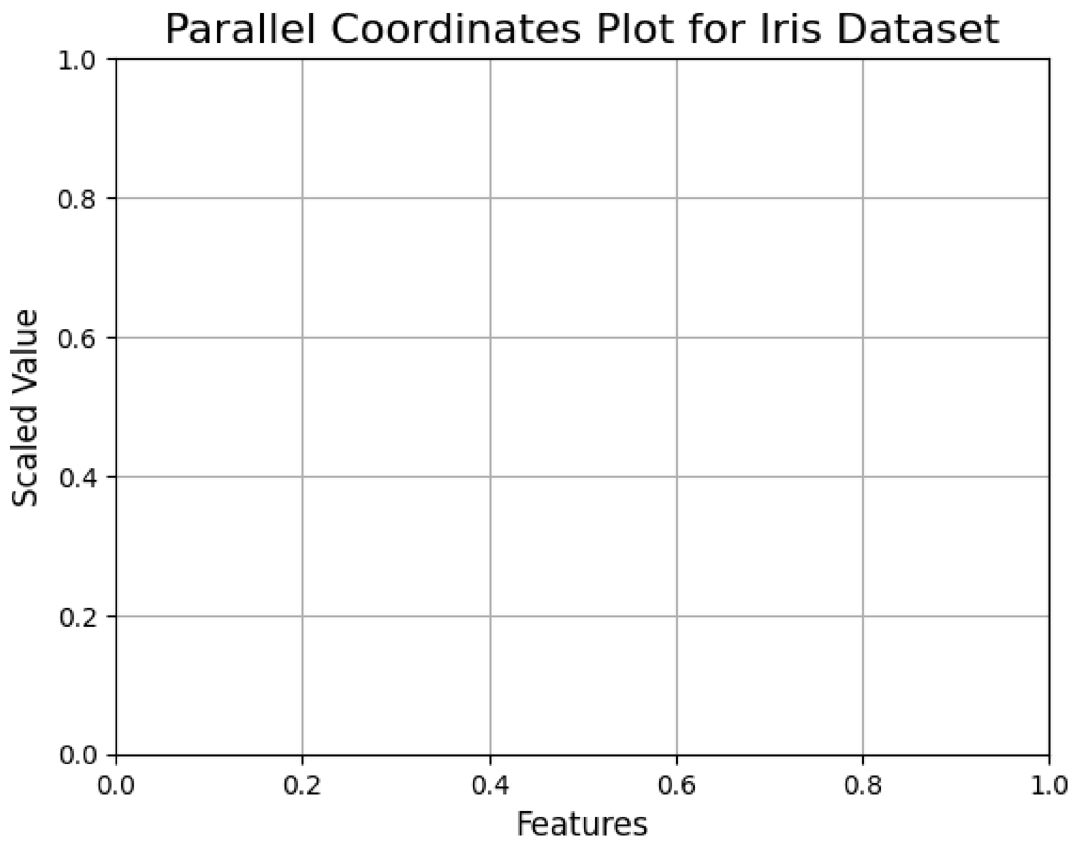
```
# Parallel coordinates plot using 'species' as the class variable for coloring
parallel_coordinates(df_scaled, 'species', color=plt.cm.viridis(np.linspace(0, 1, len(df['species'].unique()))))
```

```
<Axes: >
```



```
# Title and labels
plt.title('Parallel Coordinates Plot for Iris Dataset', fontsize=16)
plt.xlabel('Features', fontsize=12)
plt.ylabel('Scaled Value', fontsize=12)
plt.grid(True)

# Show the plot
plt.show()
```



```
Start coding or generate with AI.
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Start coding or generate with AI.
```