

```
# Step 1: Import libraries
```

```
import pandas as pd
```

```
import matplotlib.pyplot as plt
```

```
import seaborn as sns
```

```
import numpy as np
```

```
# Step 2: Upload the file
```

```
from google.colab import files
```

```
uploaded = files.upload() # Choose iris.csv when prompted
```

```
# Step 3: Load the dataset
```

```
df = pd.read_csv("iris.csv")
```

```
# Step 4: Display basic info
```

```
print(df.head())
```

```
print("Shape of dataset:", df.shape)
```

```
# Step 5: Separate species
```

```
df_Setosa = df.loc[df['variety'] == 'Setosa']
```

```
df_Virginica = df.loc[df['variety'] == 'Virginica']
```

```
df_Versicolor = df.loc[df['variety'] == 'Versicolor']
```

```
# -----
```

```
# Univariate - Sepal Width
```

```
# -----
```

```
plt.scatter(df_Setosa['sepal.width'], np.zeros_like(df_Setosa['sepal.width']), label='Setosa')
```

```
plt.scatter(df_Virginica['sepal.width'], np.zeros_like(df_Virginica['sepal.width']) + 0.1,  
label='Virginica')
```

```
plt.scatter(df_Versicolor['sepal.width'], np.zeros_like(df_Versicolor['sepal.width']) + 0.2,  
label='Versicolor')
```

```
plt.xlabel('sepal.width')
```

```
plt.legend()
```

```

plt.title("Univariate Analysis - Sepal Width")

plt.show()

# -----

# Univariate - Sepal Length

# -----

plt.scatter(df_Setosa['sepal.length'], np.zeros_like(df_Setosa['sepal.length']), label='Setosa')

plt.scatter(df_Virginica['sepal.length'], np.zeros_like(df_Virginica['sepal.length']) + 0.1,
label='Virginica')

plt.scatter(df_Versicolor['sepal.length'], np.zeros_like(df_Versicolor['sepal.length']) + 0.2,
label='Versicolor')

plt.xlabel('sepal.length')

plt.legend()

plt.title("Univariate Analysis - Sepal Length")

plt.show()

# -----

# Univariate - Petal Width

# -----

plt.scatter(df_Setosa['petal.width'], np.zeros_like(df_Setosa['petal.width']), label='Setosa')

plt.scatter(df_Virginica['petal.width'], np.zeros_like(df_Virginica['petal.width']) + 0.1,
label='Virginica')

plt.scatter(df_Versicolor['petal.width'], np.zeros_like(df_Versicolor['petal.width']) + 0.2,
label='Versicolor')

plt.xlabel('petal.width')

plt.legend()

plt.title("Univariate Analysis - Petal Width")

plt.show()

# -----

# Univariate - Petal Length

# -----

```

```

plt.scatter(df_Setosa['petal.length'], np.zeros_like(df_Setosa['petal.length']), label='Setosa')

plt.scatter(df_Virginica['petal.length'], np.zeros_like(df_Virginica['petal.length']) + 0.1,
label='Virginica')

plt.scatter(df_Versicolor['petal.length'], np.zeros_like(df_Versicolor['petal.length']) + 0.2,
label='Versicolor')

plt.xlabel('petal.length')

plt.legend()

plt.title("Univariate Analysis - Petal Length")

plt.show()

```

```

# -----
# Bivariate - Sepal Width vs Petal Width
# -----

sns.FacetGrid(df, hue='variety', height=5) \
    .map(plt.scatter, "sepal.width", "petal.width") \
    .add_legend()

plt.title("Bivariate Analysis - Sepal Width vs Petal Width")

plt.show()

```

```

# -----
# Bivariate - Sepal Length vs Petal Length
# -----

sns.FacetGrid(df, hue='variety', height=5) \
    .map(plt.scatter, "sepal.length", "petal.length") \
    .add_legend()

plt.title("Bivariate Analysis - Sepal Length vs Petal Length")

plt.show()

```

```

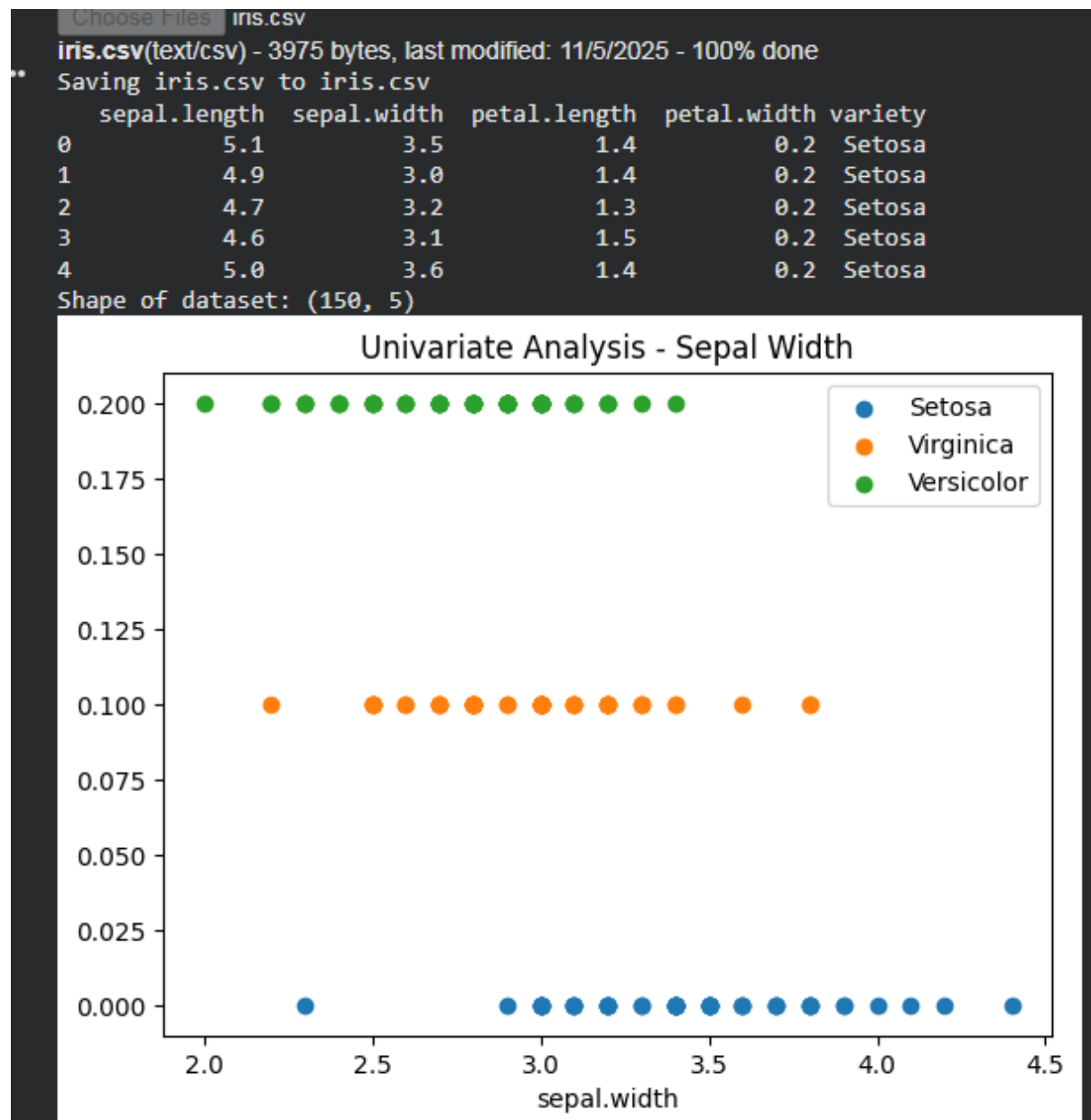
# -----
# Multivariate - All Features
# -----

sns.pairplot(df, hue="variety", height=2)

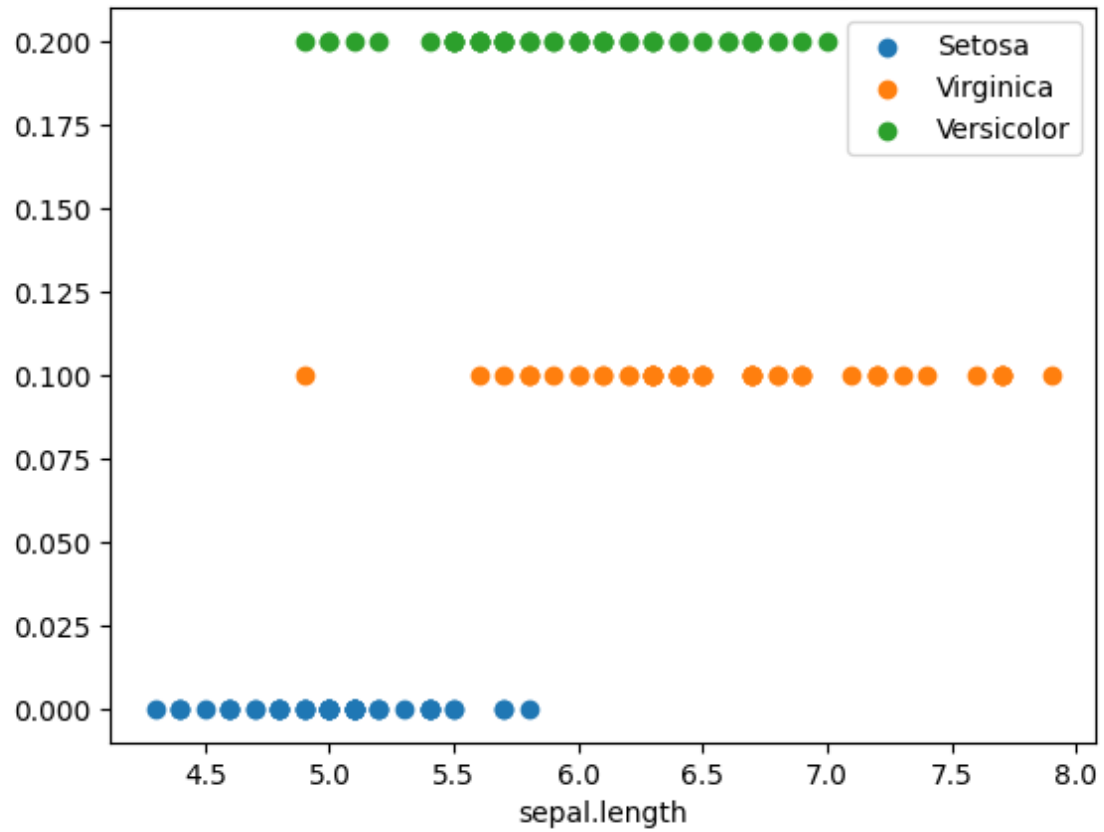
```

```
plt.suptitle("Multivariate Analysis - All Features", y=1.02)
```

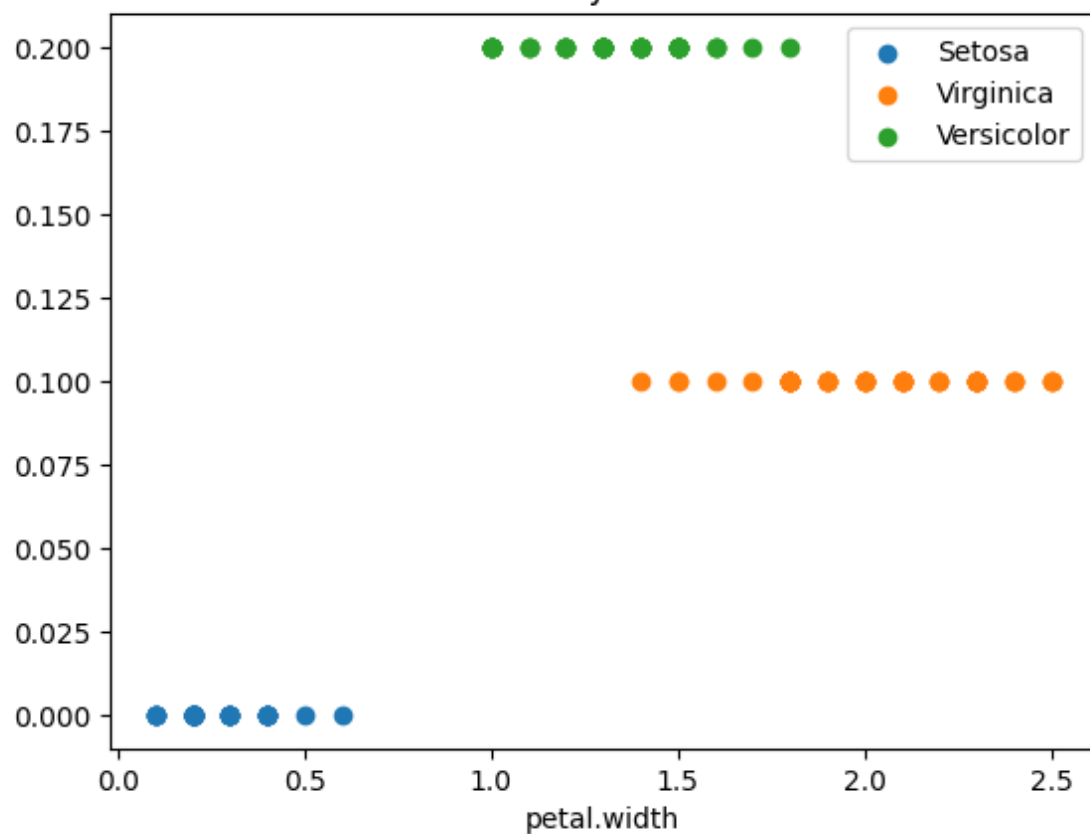
```
plt.show()
```



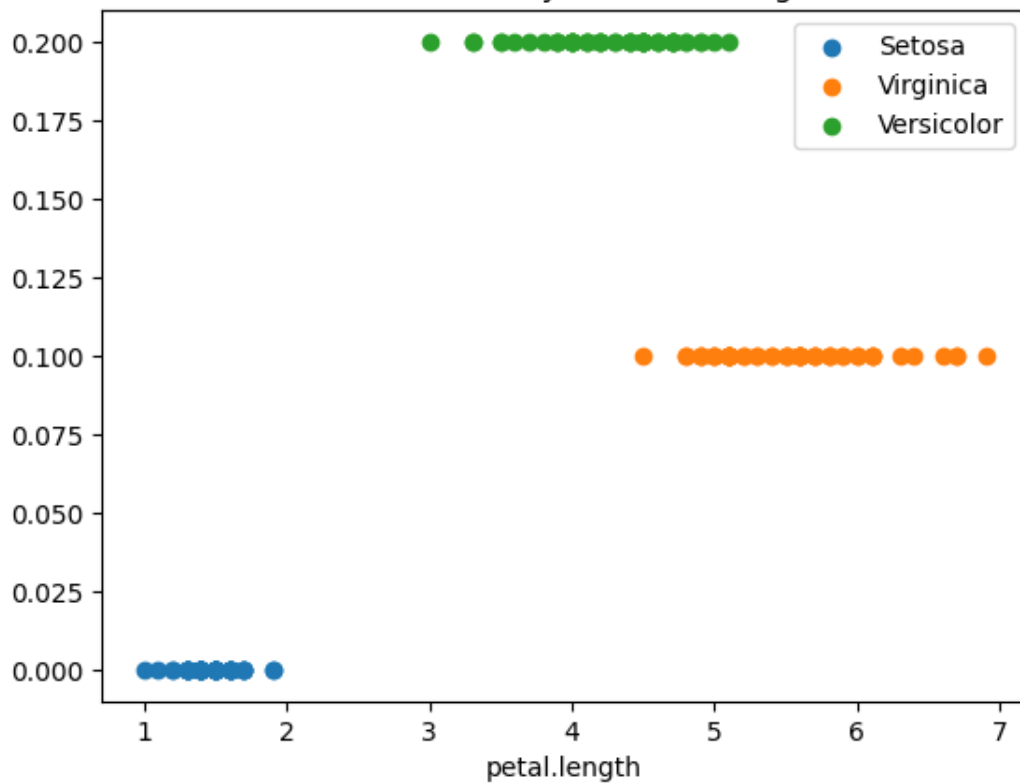
Univariate Analysis - Sepal Length



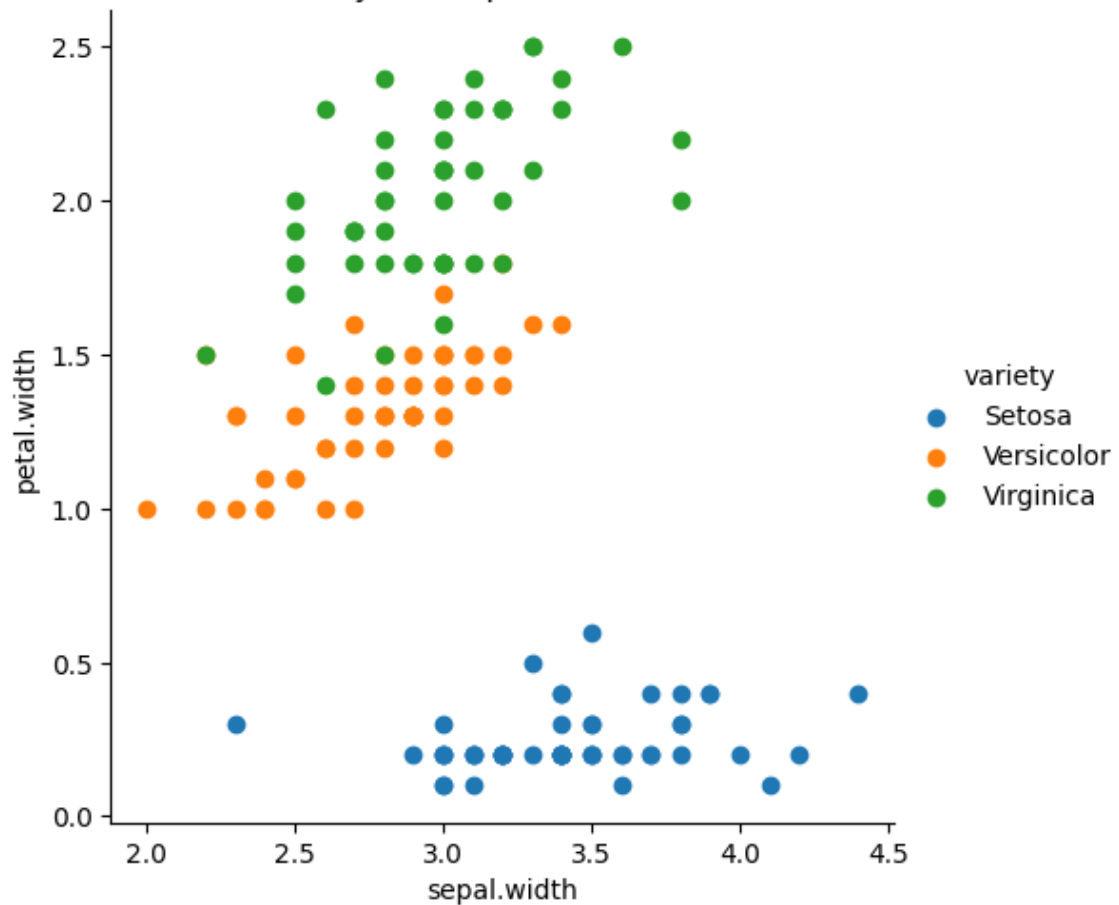
Univariate Analysis - Petal Width

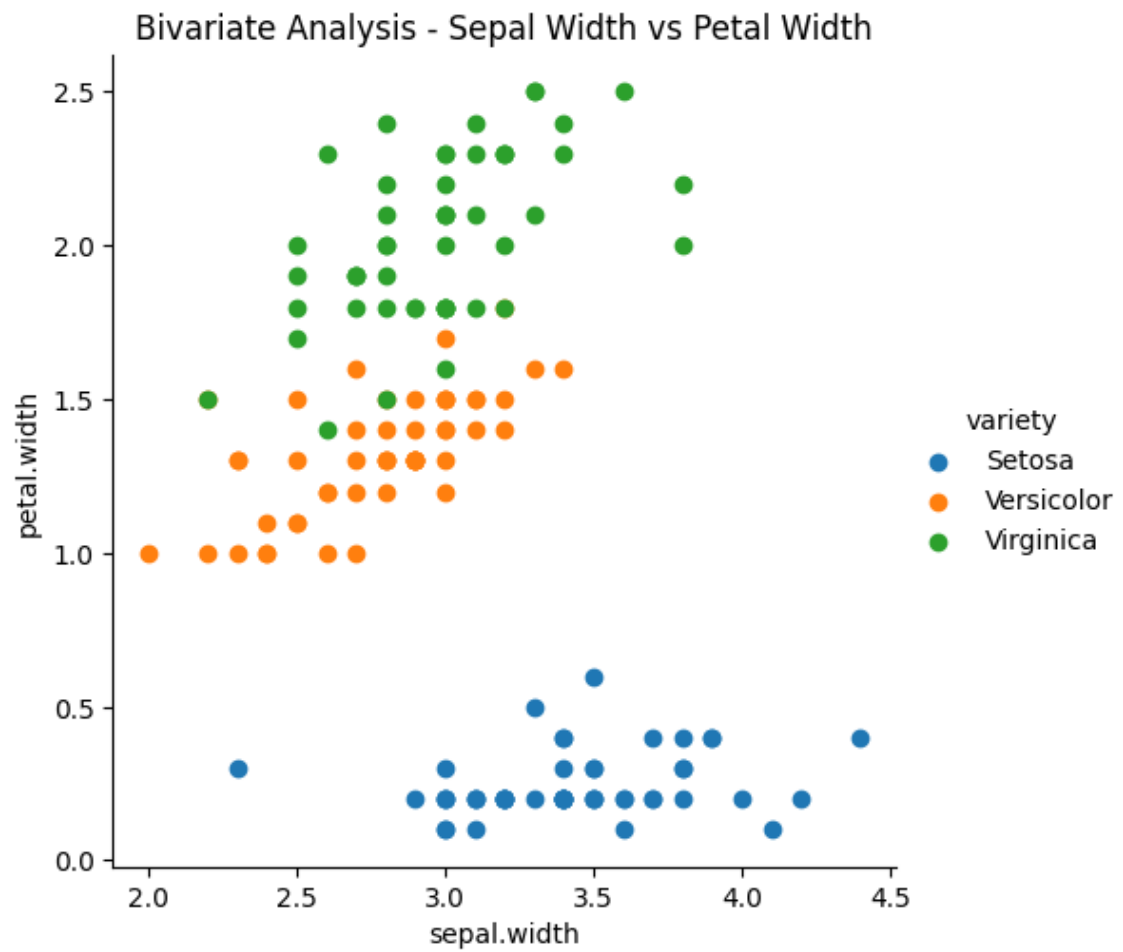


Univariate Analysis - Petal Length

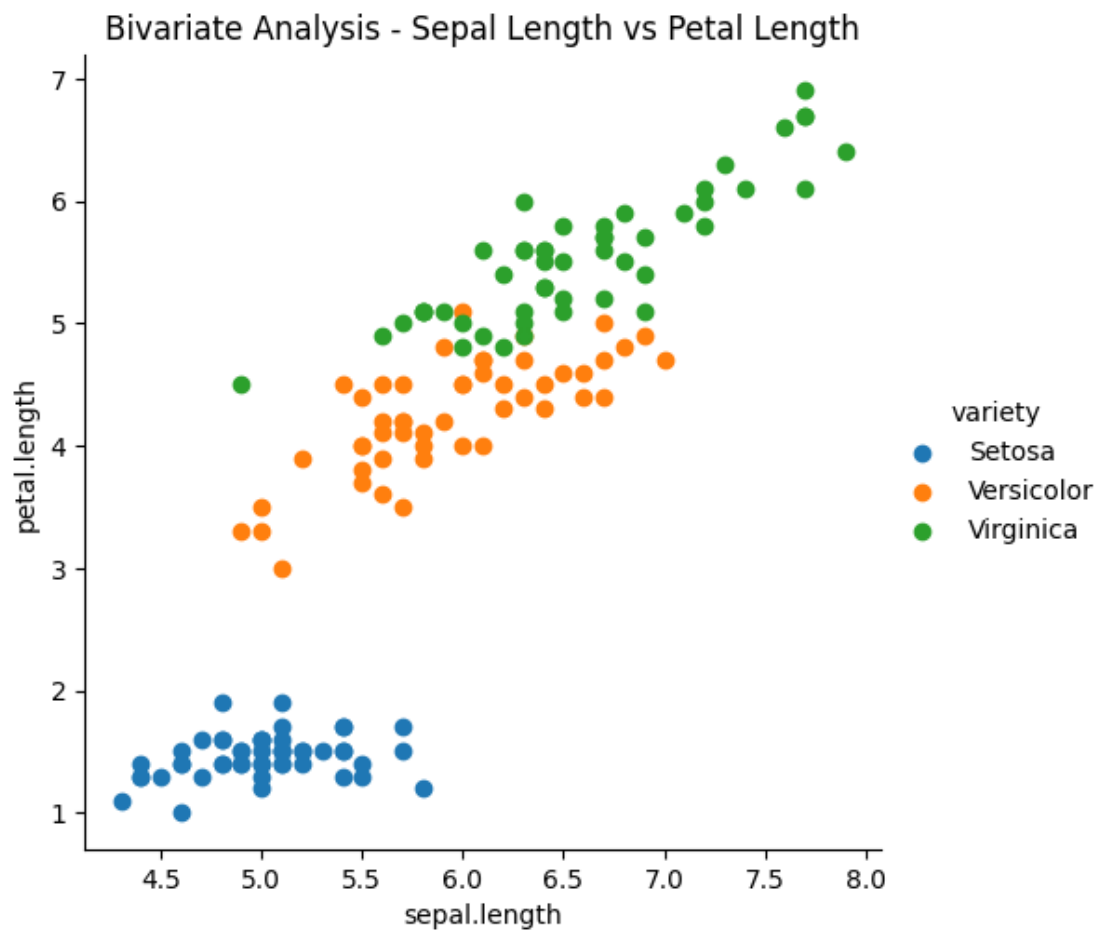


Bivariate Analysis - Sepal Width vs Petal Width









Multivariate Analysis - All Features

