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

from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```
file_path='/content/drive/My Drive/machine learning/IRIS.csv'
df=pd.read_csv(file_path)
print(df.head())
```

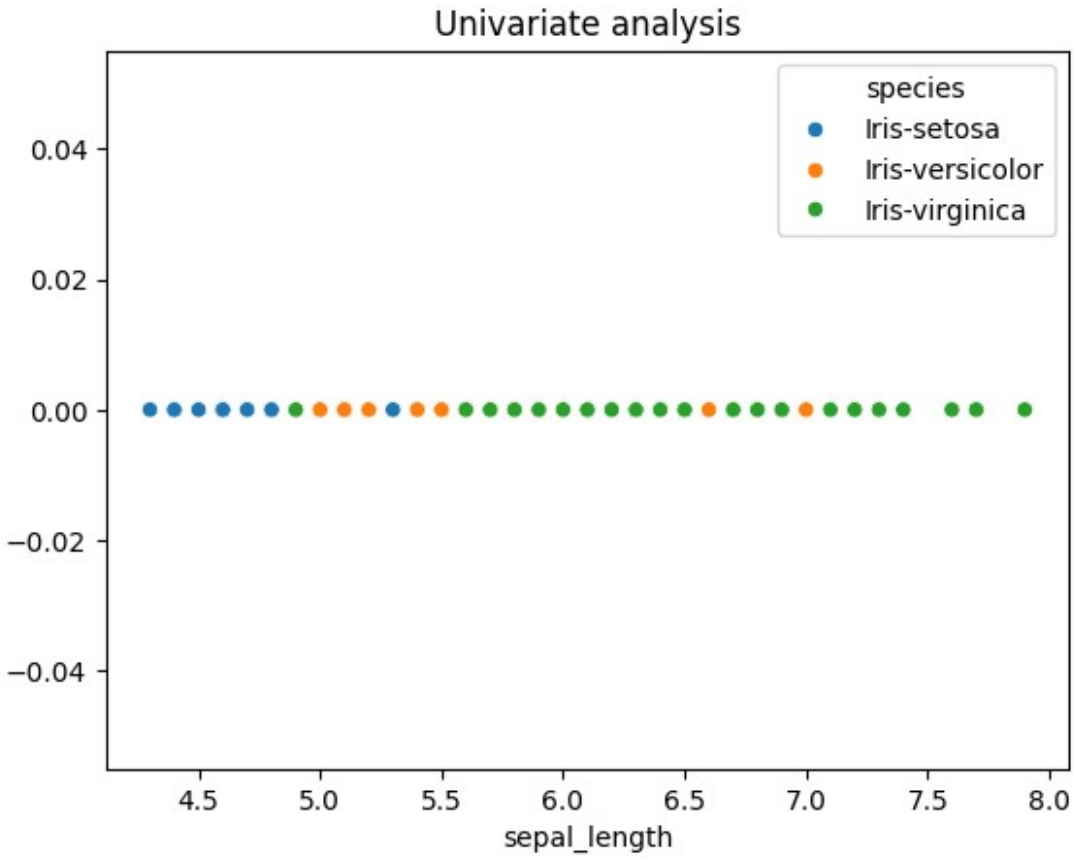
```
   sepal_length  sepal_width  petal_length  petal_width      species
0           5.1          3.5           1.4          0.2  Iris-setosa
1           4.9          3.0           1.4          0.2  Iris-setosa
2           4.7          3.2           1.3          0.2  Iris-setosa
3           4.6     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

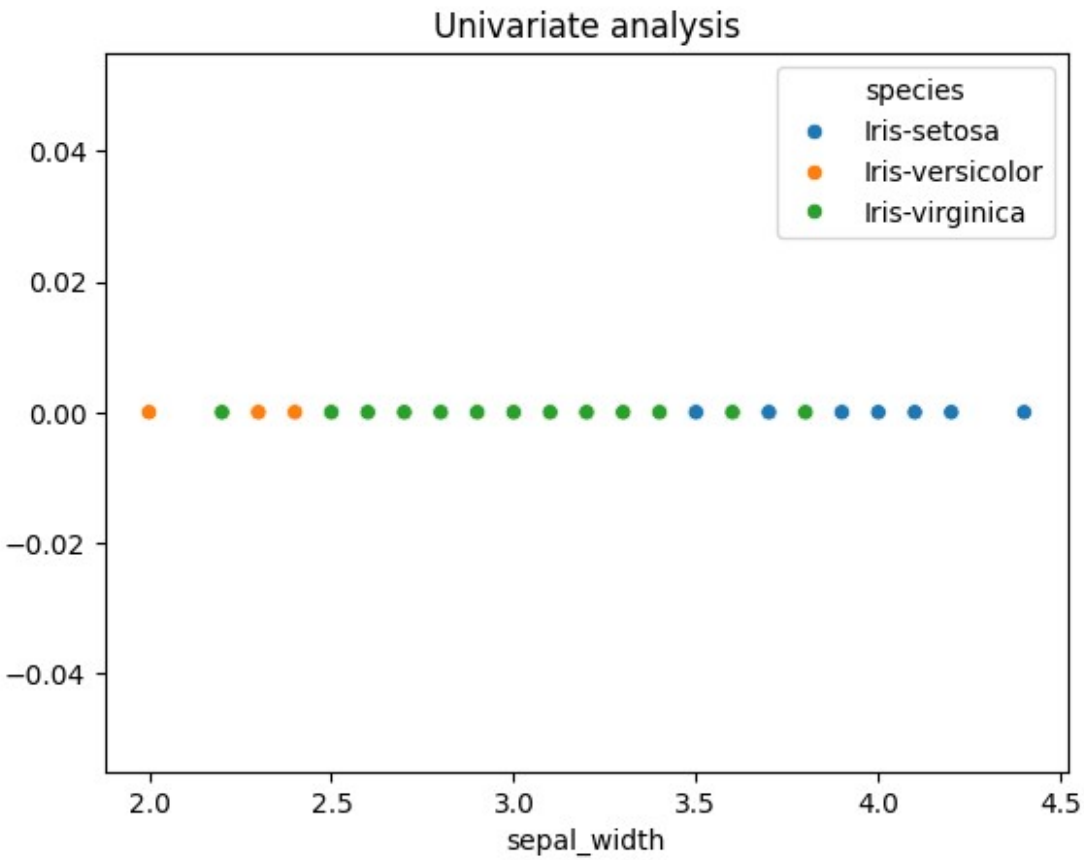
```
plt.figure(figsize=(5,6))
sns.scatterplot(x=df ['petal_length'], y=[0]*len (df),hue=df
['species'], s = 100 )
plt.yticks([])
plt.xlabel("petal_length")
plt.ylabel("Constant")
plt.title("Univariate Analysis")
plt.legend (title="species")
plt.grid(True)
plt.show()
```

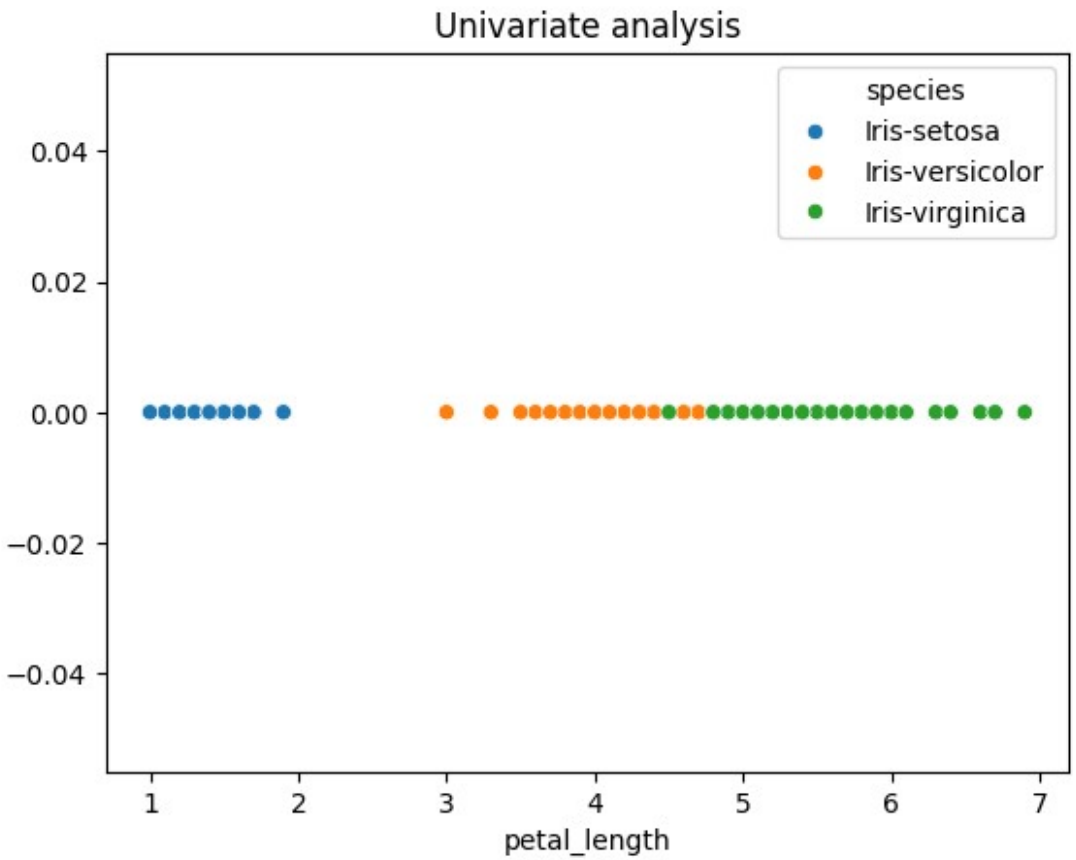
```
---------------------------------------------------------------------------
-----
NameError                                 Traceback (most recent call
last)
/tmp/ipython-input-560803971.py in <cell line: 0>()
----> 1 plt.figure(figsize=(5,6))
      2 sns.scatterplot(x=df ['petal_length'], y=[0]*len (df),hue=df
['species'], s = 100 )
      3 plt.yticks([])
      4 plt.xlabel("petal_length")
      5 plt.ylabel("Constant")

NameError: name 'plt' is not defined
```

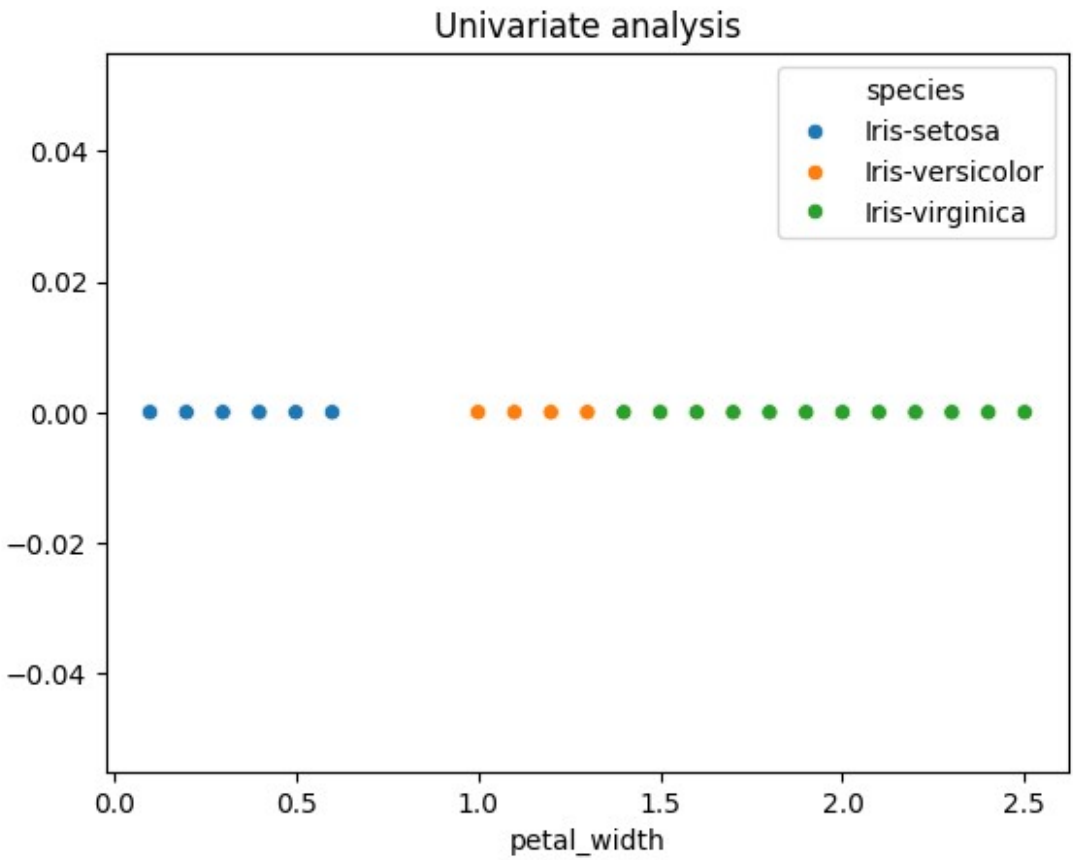
```
sns.scatterplot(data=df,x="sepal_length",y=0,hue="species")
plt.title("Univariate analysis")
plt.show()
sns.scatterplot(data=df,x="sepal_width",y=0,hue="species")
```

```
plt.title("Univariate analysis")
plt.show()
sns.scatterplot(data=df,x="petal_length",y=0,hue="species")
plt.title("Univariate analysis")
plt.show()
sns.scatterplot(data=df,x="petal_width",y=0,hue="species")
plt.title("Univariate analysis")
plt.show()
```

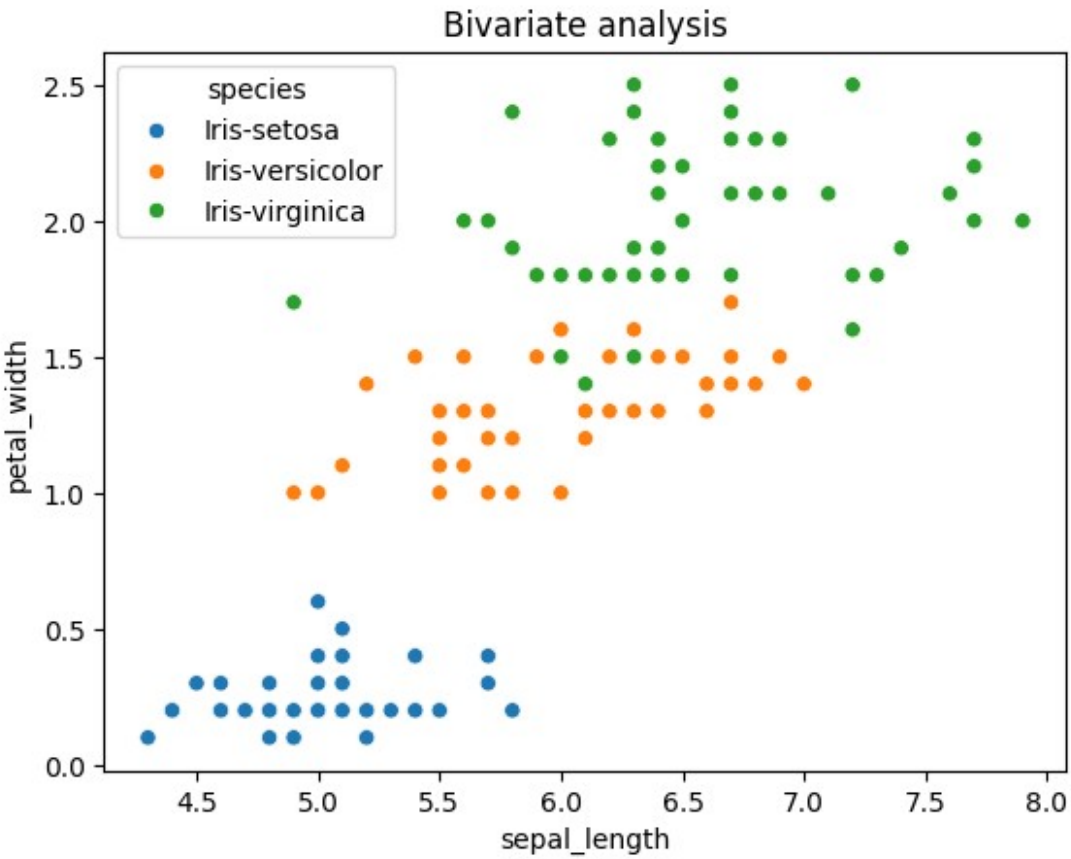


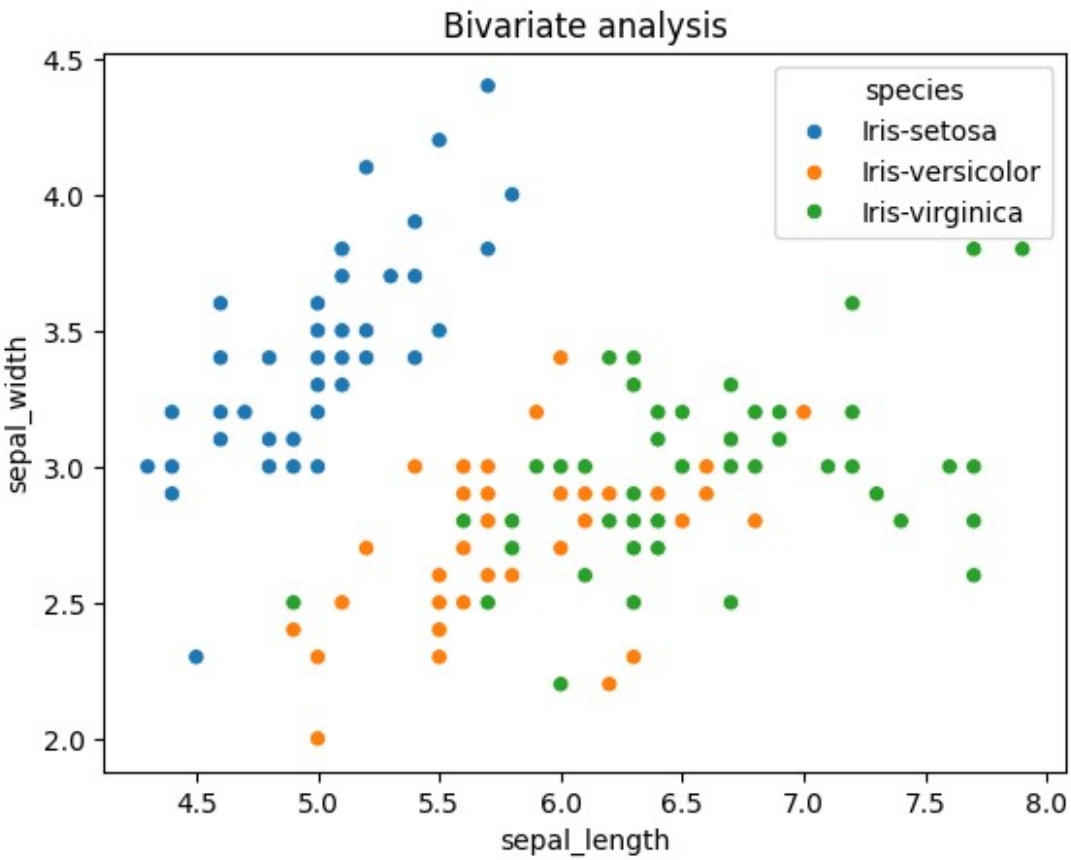

Univariate analysis
species
Iris-setosa
Iris-versicolor
Iris-virginica
0.04
0.02
0.00
−0.02
−0.04
2.0
2.5
3.0
3.5
4.0
4.5
sepal_width

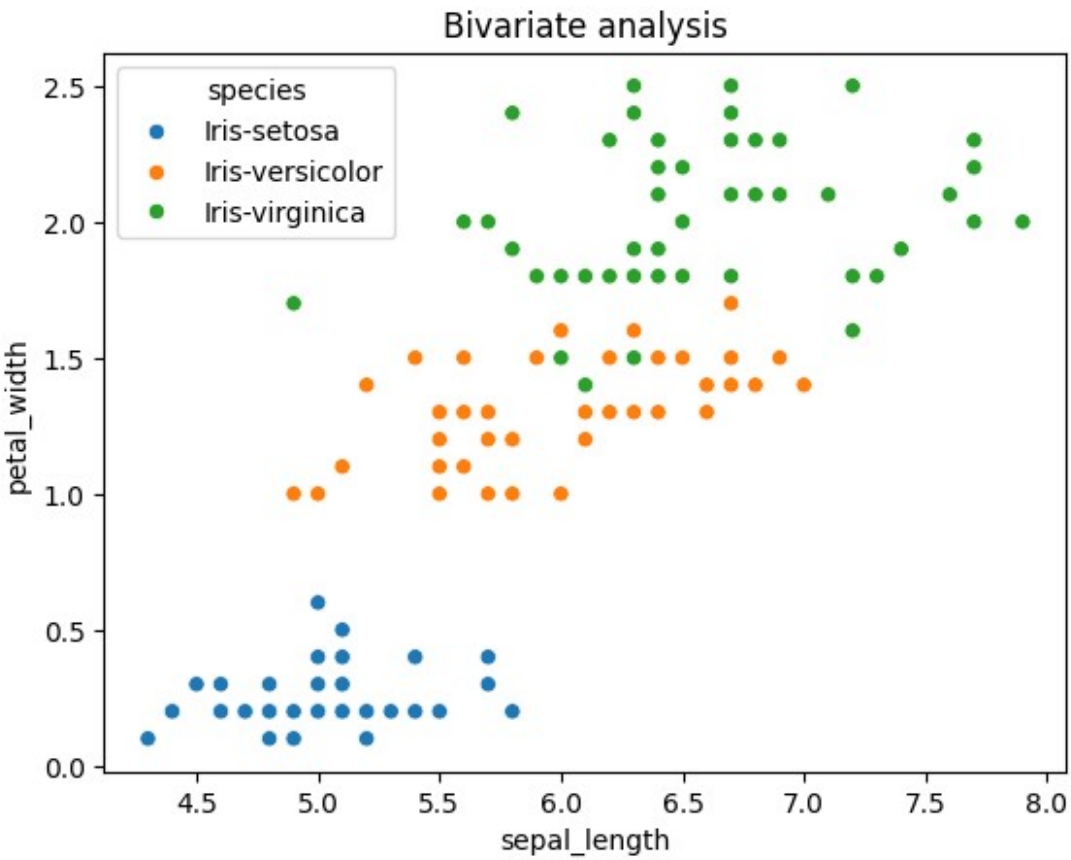

Univariate analysis
species
Iris-setosa
Iris-versicolor
Iris-virginica
0.04
0.02
0.00
−0.02
−0.04
1
2
3
4
5
6
7
petal_length

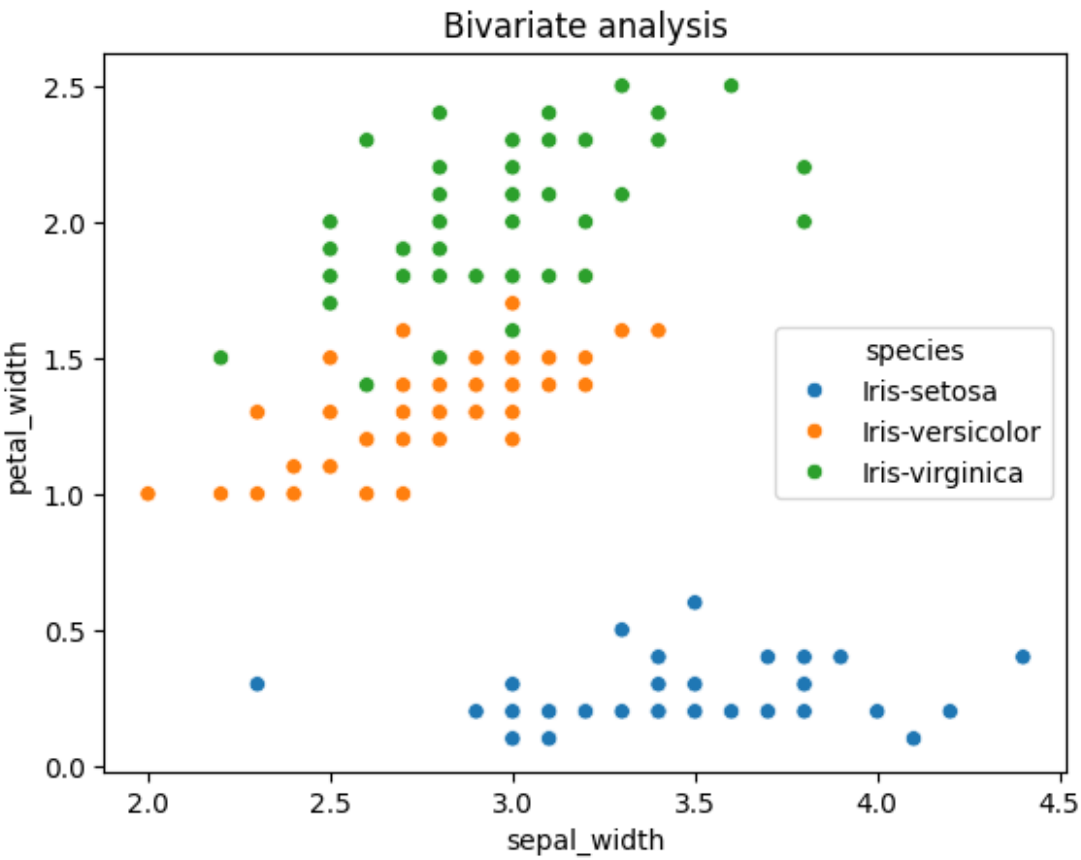


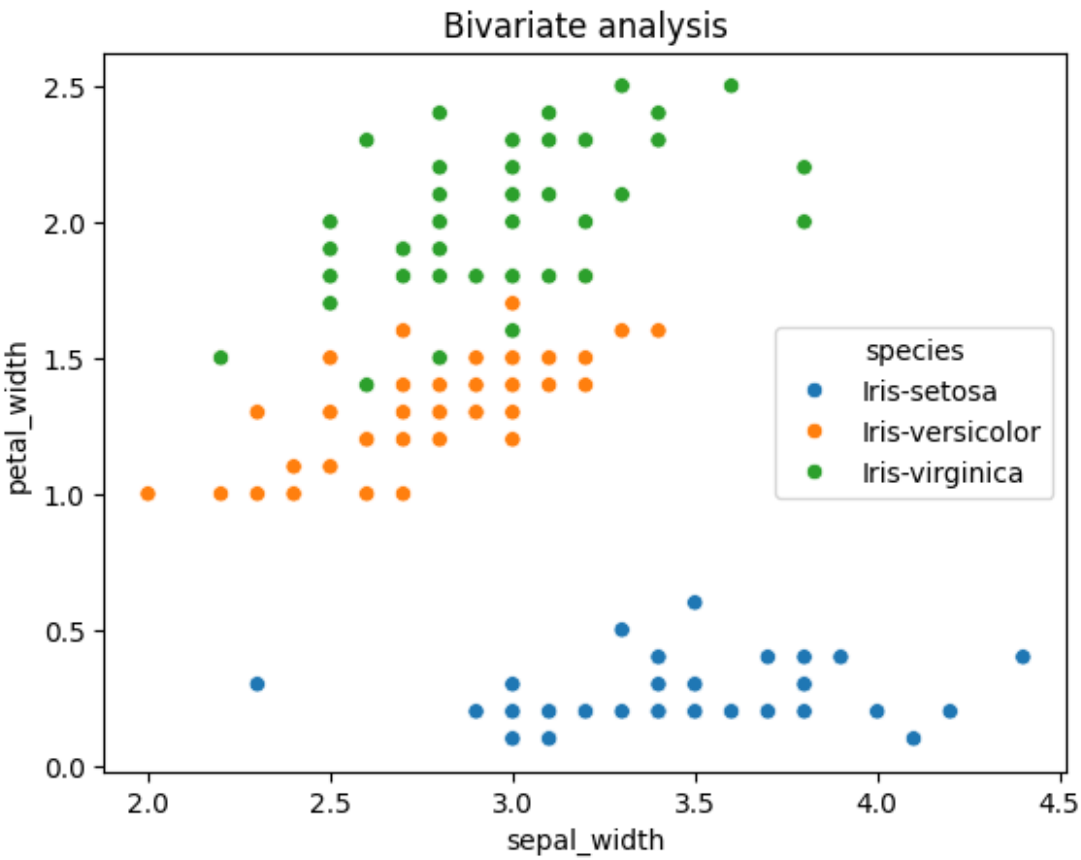

```
sns.scatterplot(data=df,x="sepal_length",y='petal_width',hue="species"
)
plt.title("Bivariate analysis")
plt.show()
sns.scatterplot(data=df,x="sepal_length",y='sepal_width',hue="species"
)
plt.title("Bivariate analysis")
plt.show()
sns.scatterplot(data=df,x="sepal_length",y='petal_width',hue="species"
)
plt.title("Bivariate analysis")
plt.show()
sns.scatterplot(data=df,x="sepal_width",y='petal_width',hue="species")
plt.title("Bivariate analysis")
plt.show()
sns.scatterplot(data=df,x="sepal_width",y='petal_width',hue="species")
plt.title("Bivariate analysis")
plt.show()
sns.scatterplot(data=df,x="petal_length",y='petal_width',hue="species"
)
plt.title("Bivariate analysis")
plt.show()
```

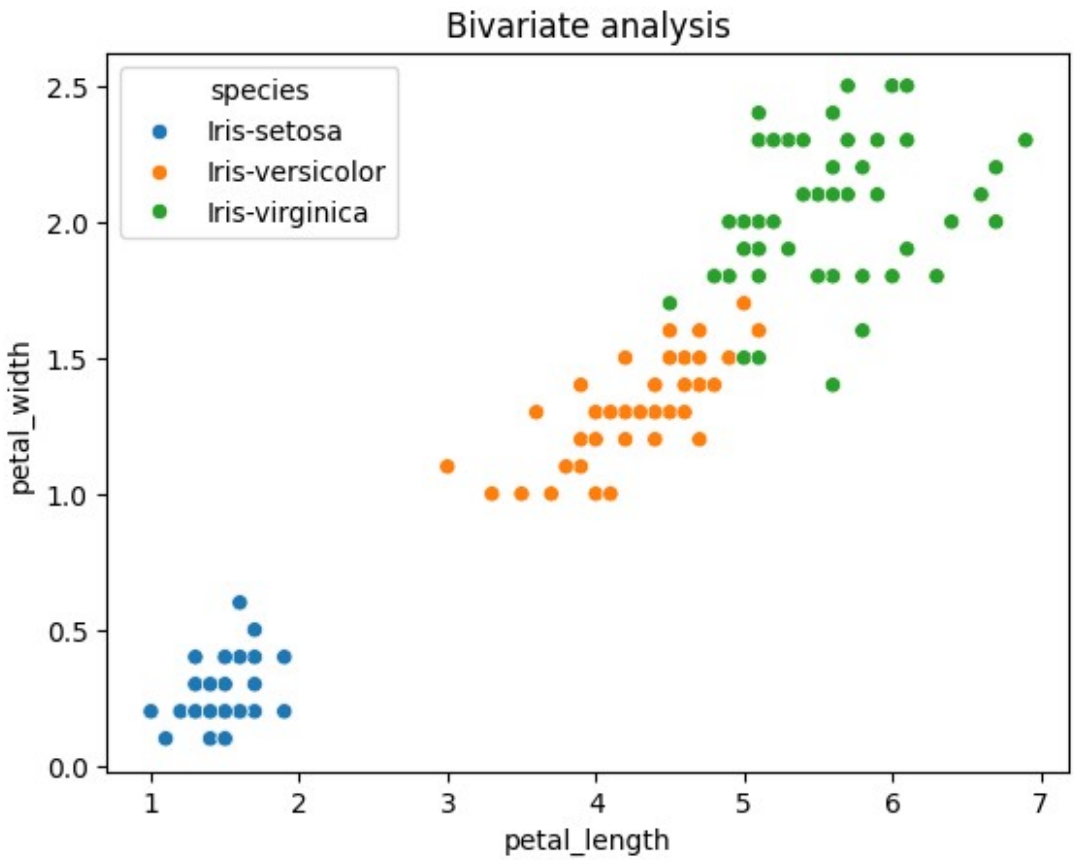

Bivariate analysis
species
Iris-setosa
Iris-versicolor
Iris-virginica
petal_width
sepal_length
0.0
0.5
1.0
1.5
2.0
2.5
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0


Bivariate analysis
species
Iris-setosa
Iris-versicolor
Iris-virginica
sepal_width
sepal_length
4.5
4.0
3.5
3.0
2.5
2.0
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0

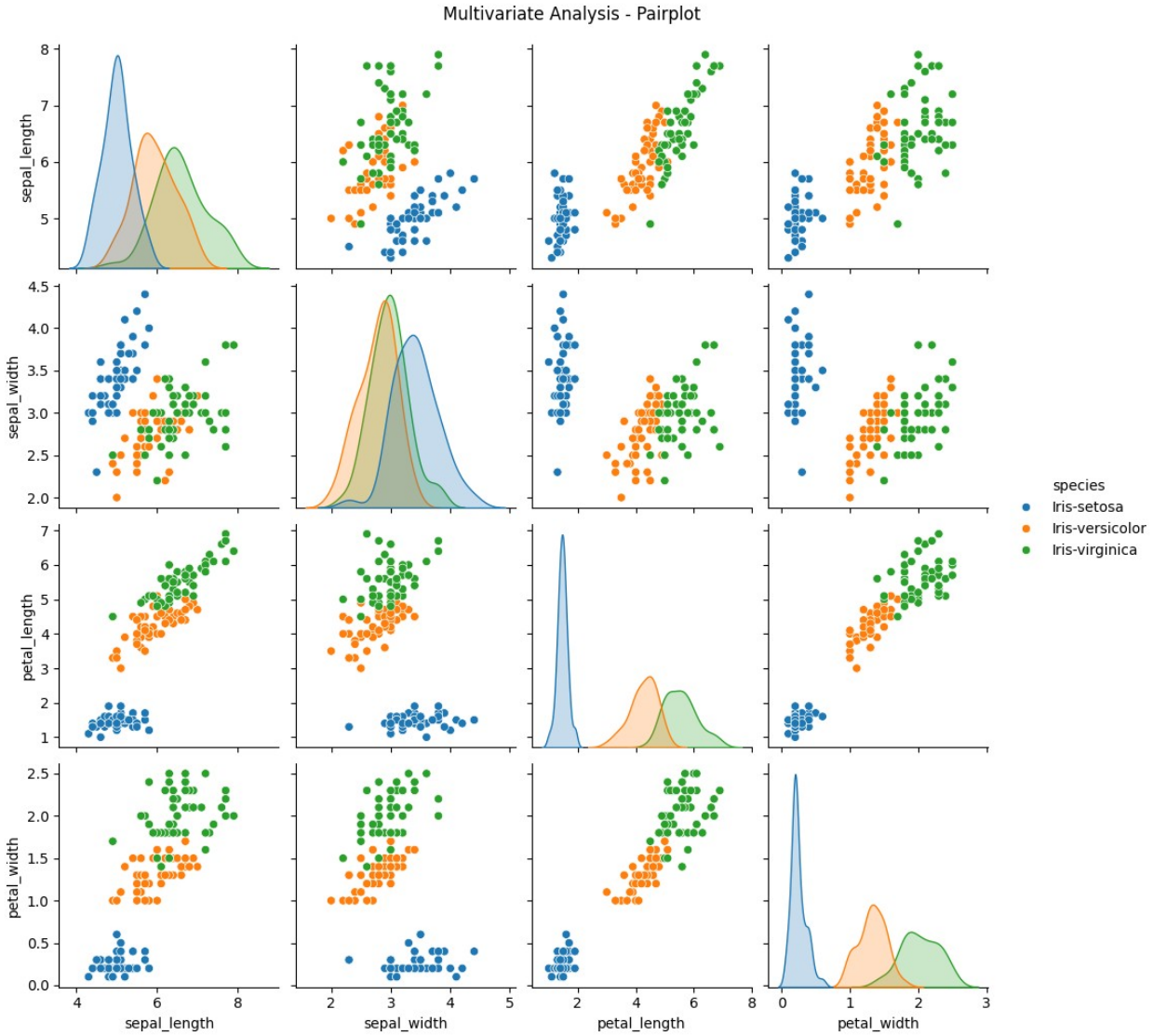

Bivariate analysis
species
Iris-setosa
Iris-versicolor
Iris-virginica
petal_width
sepal_length
0.0
0.5
1.0
1.5
2.0
2.5
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0


Bivariate analysis
petal_width
sepal_width
species
Iris-setosa
Iris-versicolor
Iris-virginica
0.0
0.5
1.0
1.5
2.0
2.5
2.0
2.5
3.0
3.5
4.0
4.5


Bivariate analysis
petal_width
sepal_width
species
Iris-setosa
Iris-versicolor
Iris-virginica
0.0
0.5
1.0
1.5
2.0
2.5
2.0
2.5
3.0
3.5
4.0
4.5




```
sns.pairplot(df, hue='species', diag_kind='kde')
plt.suptitle('Multivariate Analysis - Pairplot', y=1.02)
plt.show()
```


Multivariate Analysis - Pairplot
sepal_length
sepal_width
petal_length
petal_width
species
Iris-setosa
Iris-versicolor
Iris-virginica