In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
df = pd.read_csv('IRIS (1).csv')
```

In [3]:
```
df.head()
```

Out[3]:

	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

In [5]:
```
df1_copy = df
```

In [6]:
```
df1_copy
```

Out[6]:

	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
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	Iris-virginica
146	6.3	2.5	5.0	1.9	Iris-virginica
147	6.5	3.0	5.2	2.0	Iris-virginica
148	6.2	3.4	5.4	2.3	Iris-virginica
149	5.9	3.0	5.1	1.8	Iris-virginica

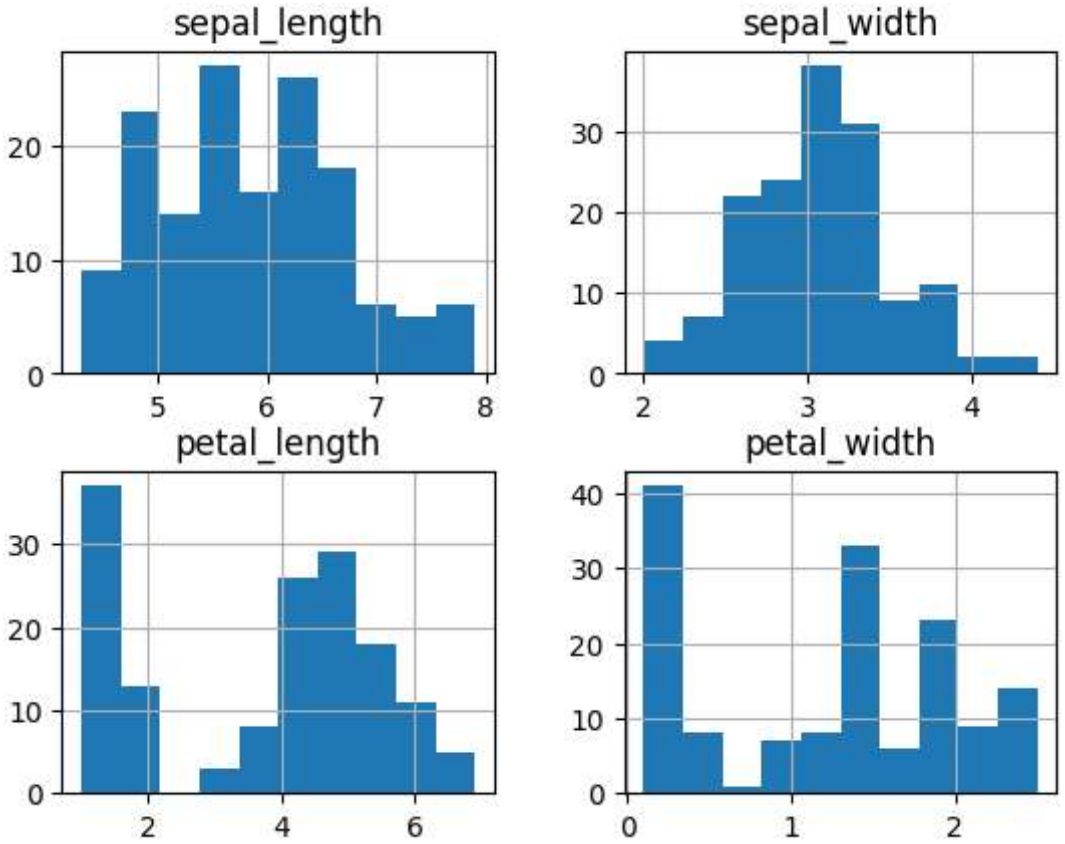
150 rows × 5 columns

In [7]:
```
df.isnull().sum()
```

Out[7]:
```
sepal_length    0
sepal_width     0
petal_length    0
petal_width     0
species         0
dtype: int64
```

In [8]:
```
df.hist()
```

Out[8]:
```
array([[<AxesSubplot: title={'center': 'sepal_length'}>,
        <AxesSubplot: title={'center': 'sepal_width'}>],
       [<AxesSubplot: title={'center': 'petal_length'}>,
        <AxesSubplot: title={'center': 'petal_width'}>]], dtype=object)
```

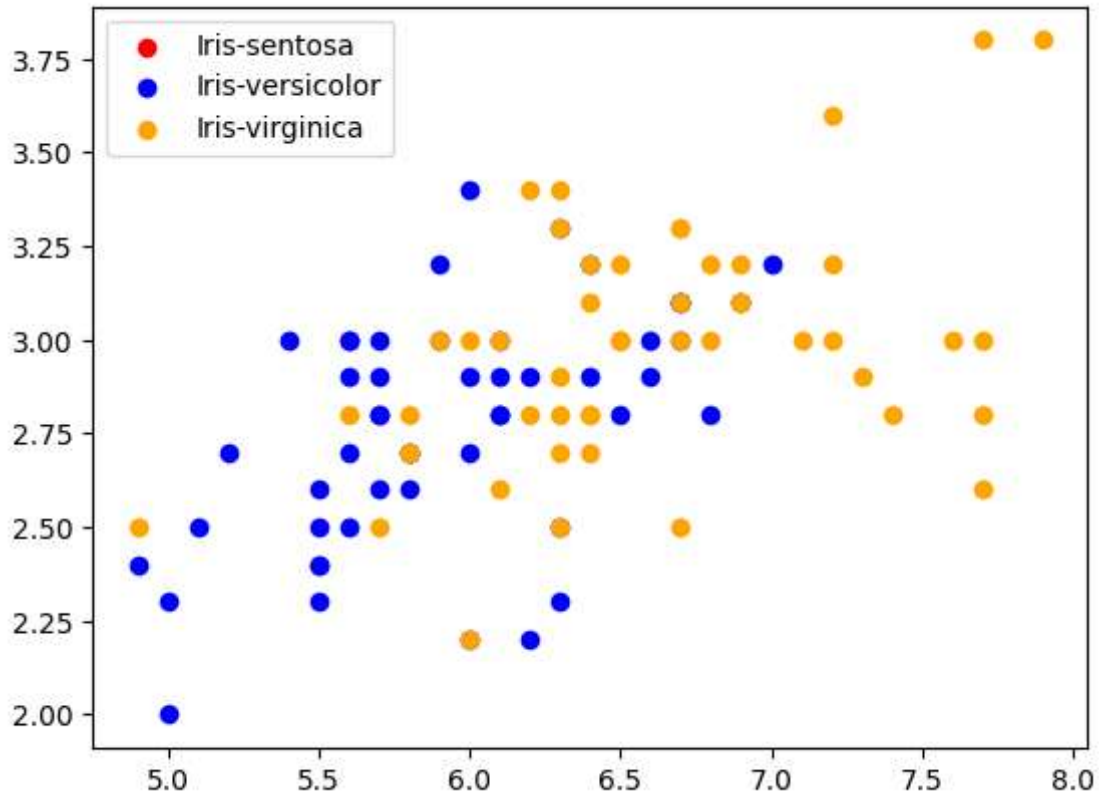


In [11]:
```
colors = ['red' , 'blue', 'orange']
species = ['Iris-sentosa', 'Iris-versicolor', 'Iris-virginica']
```

In [14]:
```
for i in range(3):
    x = df[df['species']== species[i]]
    plt.scatter(x['sepal_length'], x['sepal_width'], c = colors[i] , label = species[i])

plt.legend()
```

Out[14]:
```
<matplotlib.legend.Legend at 0x221c58c0910>
```



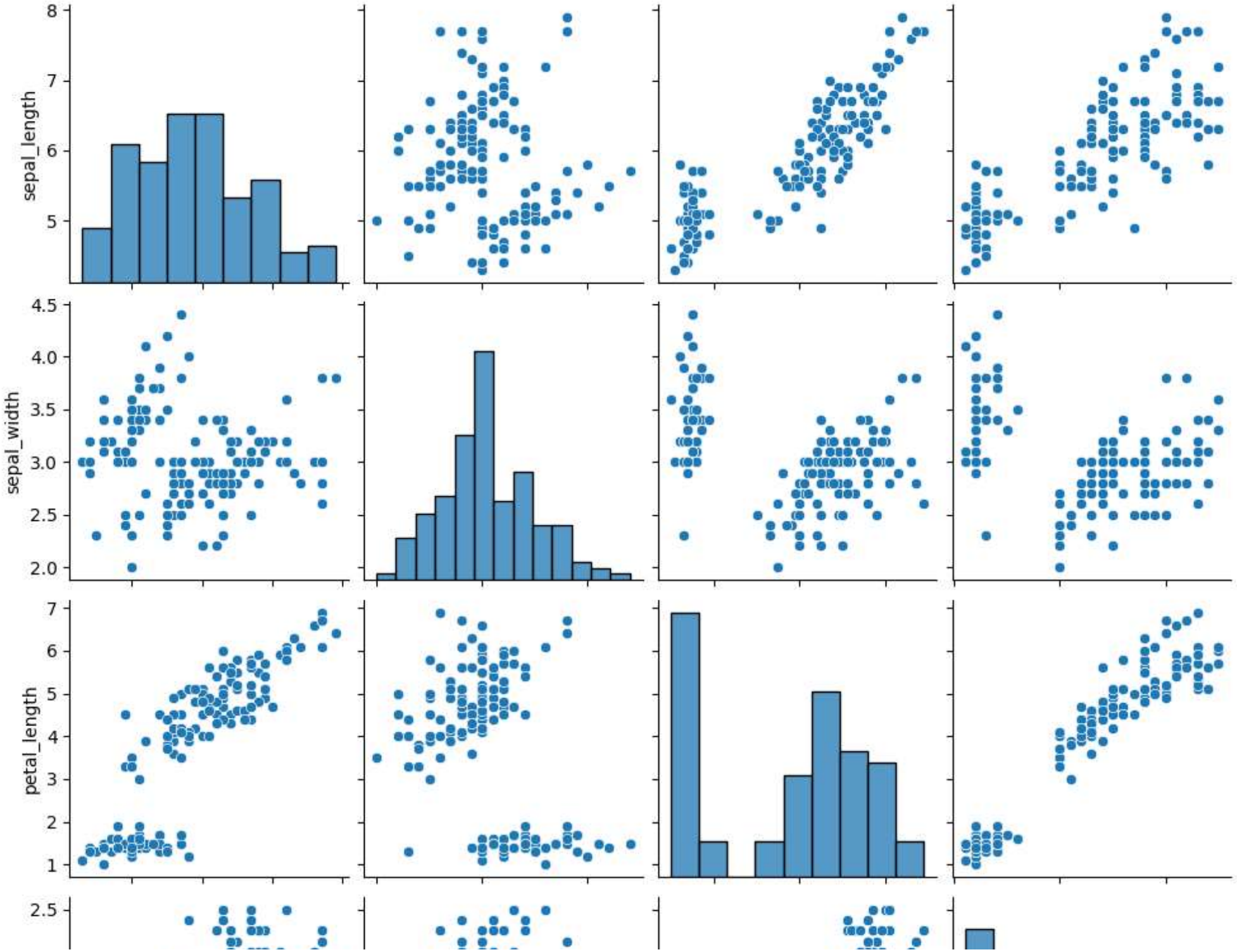
In [15]:
```
df.corr()
```

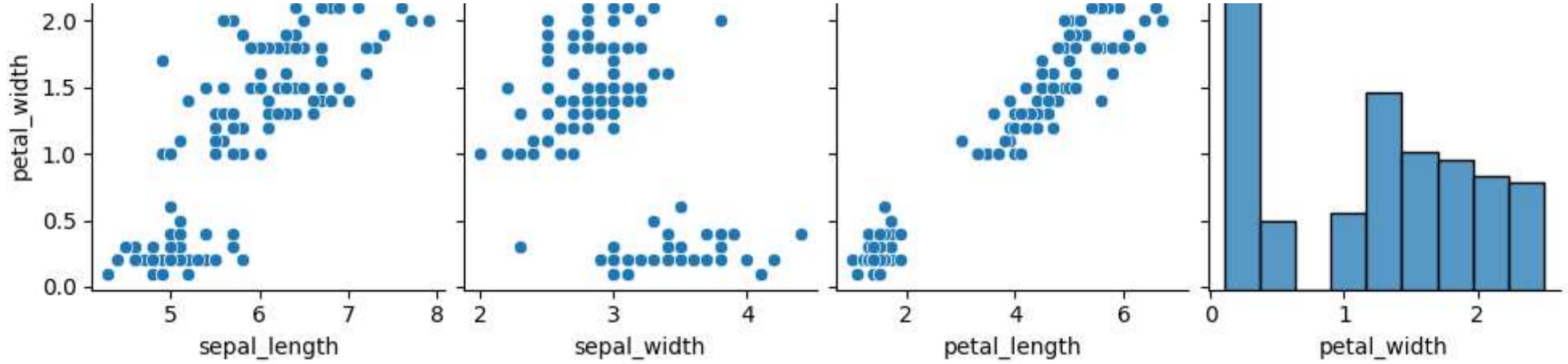
```
C:\Users\DELL\AppData\Local\Temp\ipykernel_7416\1134722465.py:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_only to silence this warning.
  df.corr()
```

Out[15]:

	sepal_length	sepal_width	petal_length	petal_width
sepal_length	1.000000	-0.109369	0.871754	0.817954
sepal_width	-0.109369	1.000000	-0.420516	-0.356544
petal_length	0.871754	-0.420516	1.000000	0.962757
petal_width	0.817954	-0.356544	0.962757	1.000000

In [16]:
```
g = sns.pairplot(df)
```

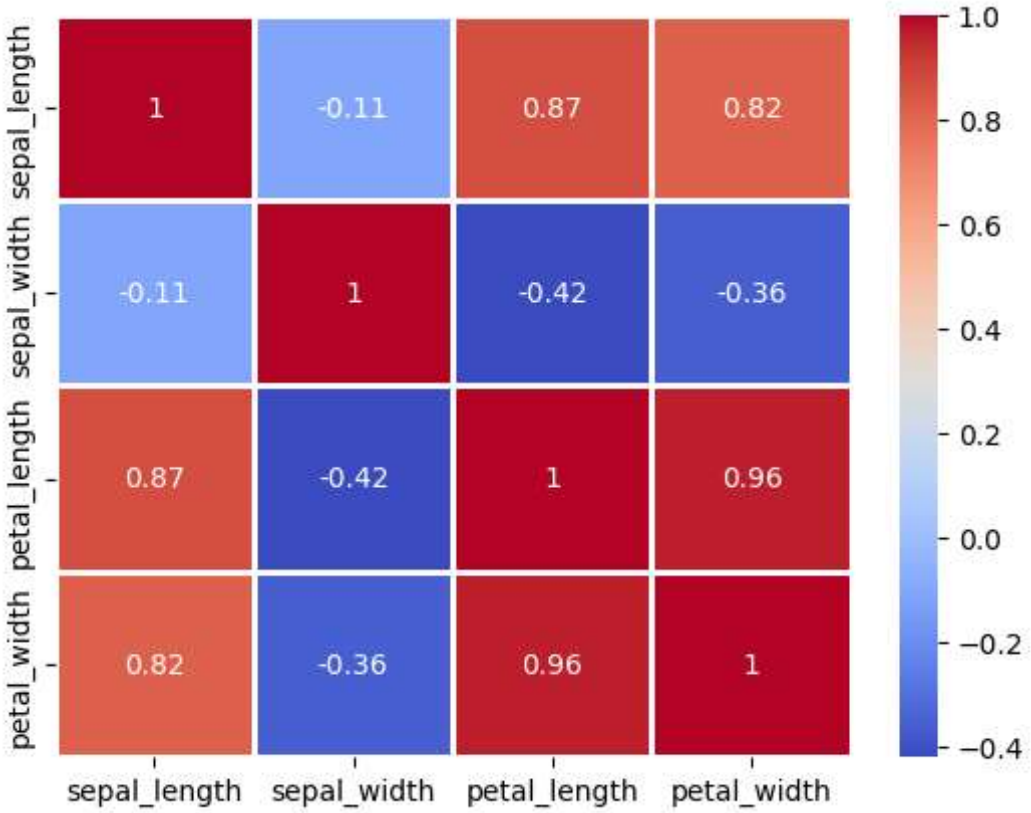

sepal_length
sepal_width
petal_length
8
7
6
5
4.5
4.0
3.5
3.0
2.5
2.0
7
6
5
4
3
2
1
2.5



In [20]:
```
corr = df.corr()
sns.heatmap(corr,annot = True , cmap= 'coolwarm', linewidths = 1)
```

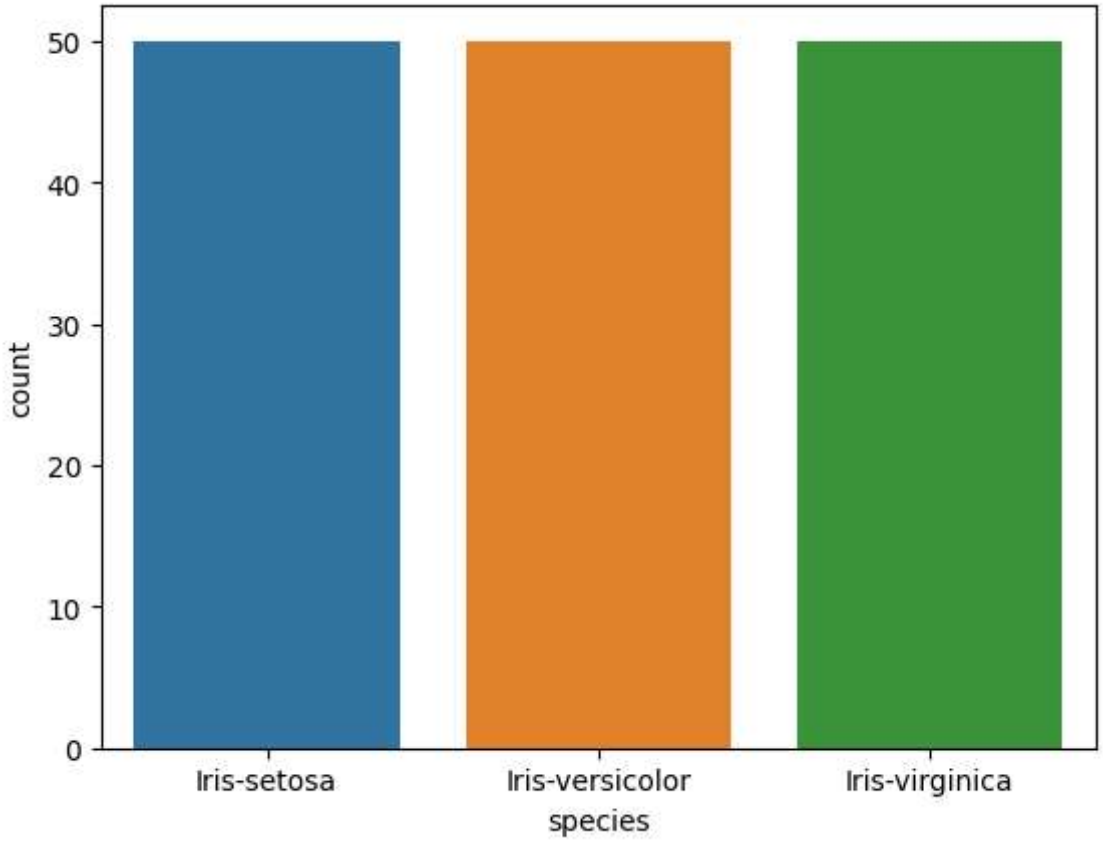
```
C:\Users\DELL\AppData\Local\Temp\ipykernel_7416\230482482.py:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_only to silence this warning.
  corr = df.corr()
```

Out[20]: <AxesSubplot: >



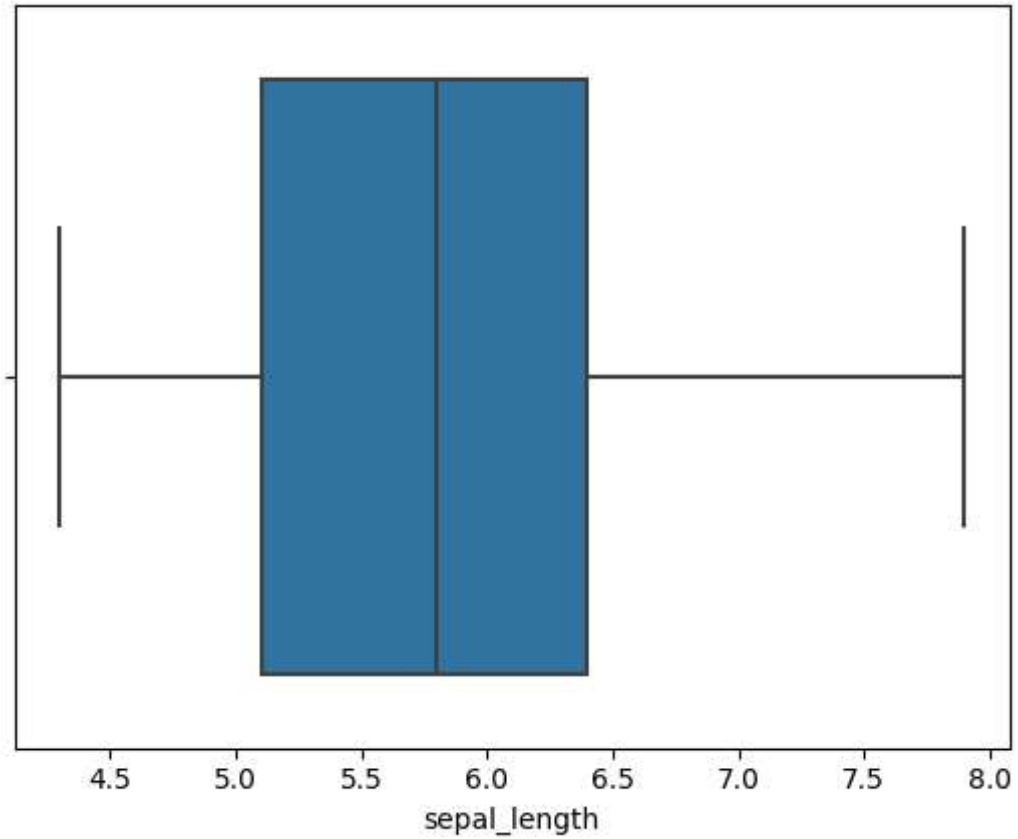
In [29]:
```
sns.countplot(x='species', data= df)
```

Out[29]:
```
<AxesSubplot: xlabel='species', ylabel='count'>
```



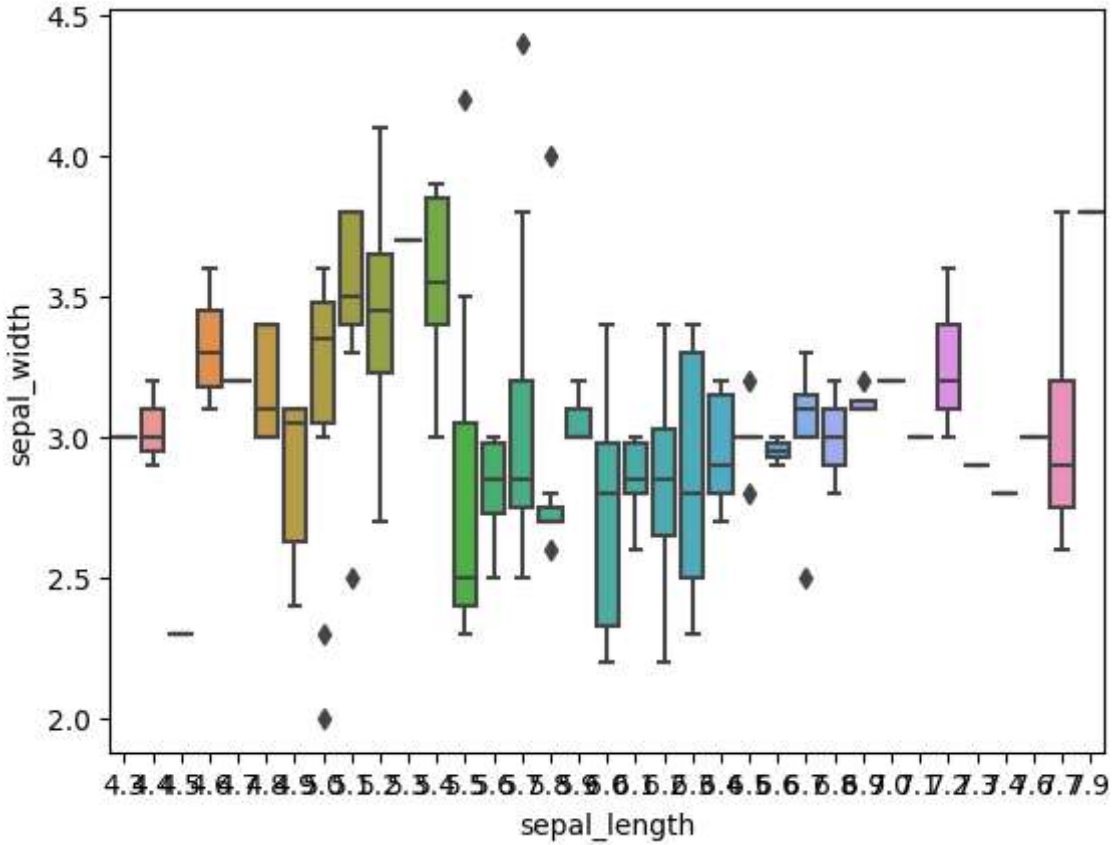
In [30]:
```
sns.boxplot(x="sepal_length", data=df)
```

Out[30]:
```
<AxesSubplot: xlabel='sepal_length'>
```



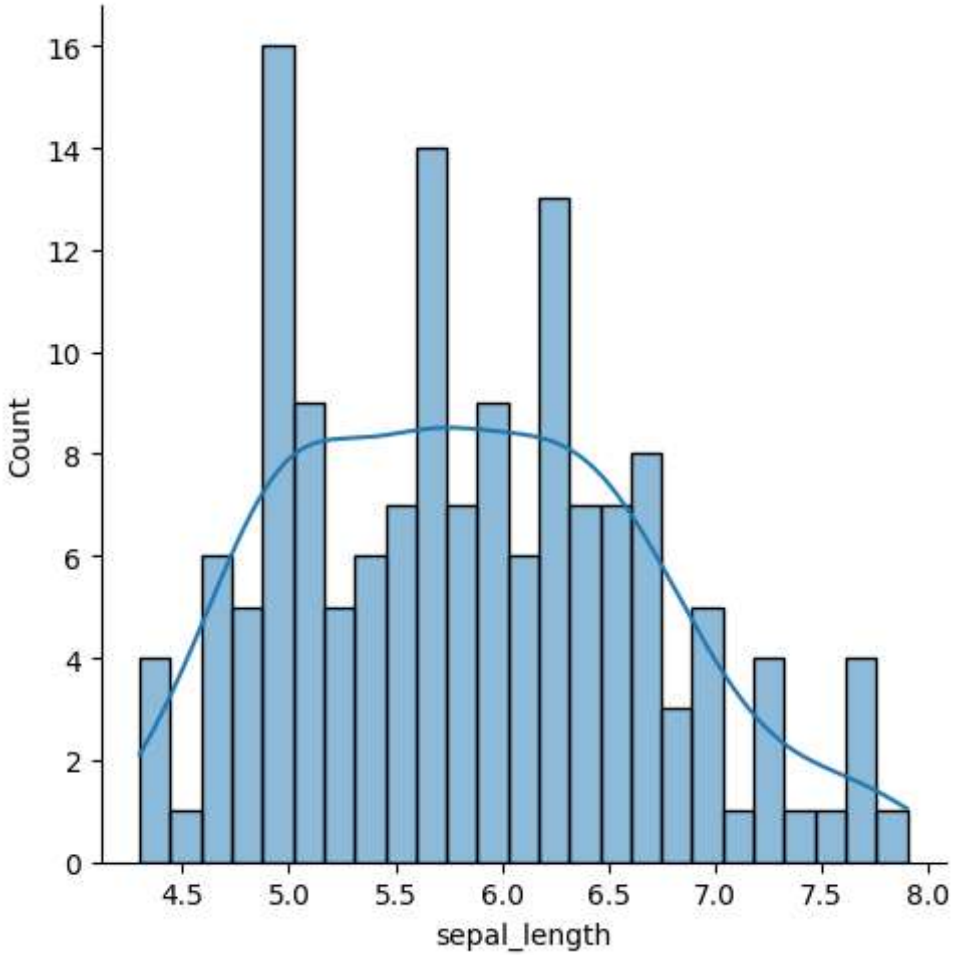
In [31]:
```
sns.boxplot(x="sepal_length",y="sepal_width", data=df)
```

Out[31]:
```
<AxesSubplot: xlabel='sepal_length', ylabel='sepal_width'>
```



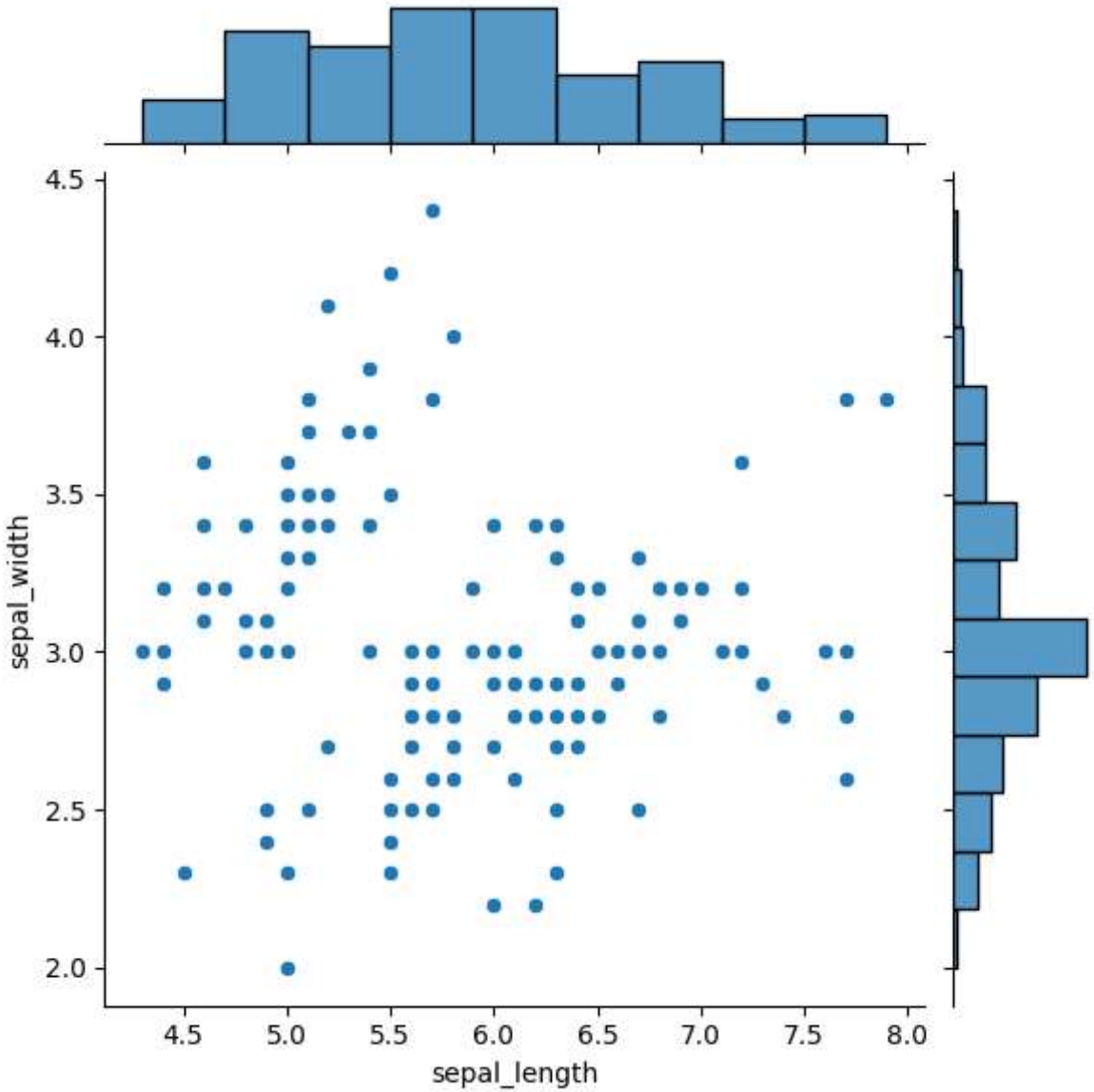
In [32]:
```
sns.displot(df['sepal_length'], bins = 25, kde=True)
```

Out[32]:
```
<seaborn.axisgrid.FacetGrid at 0x221c68ecd60>
```



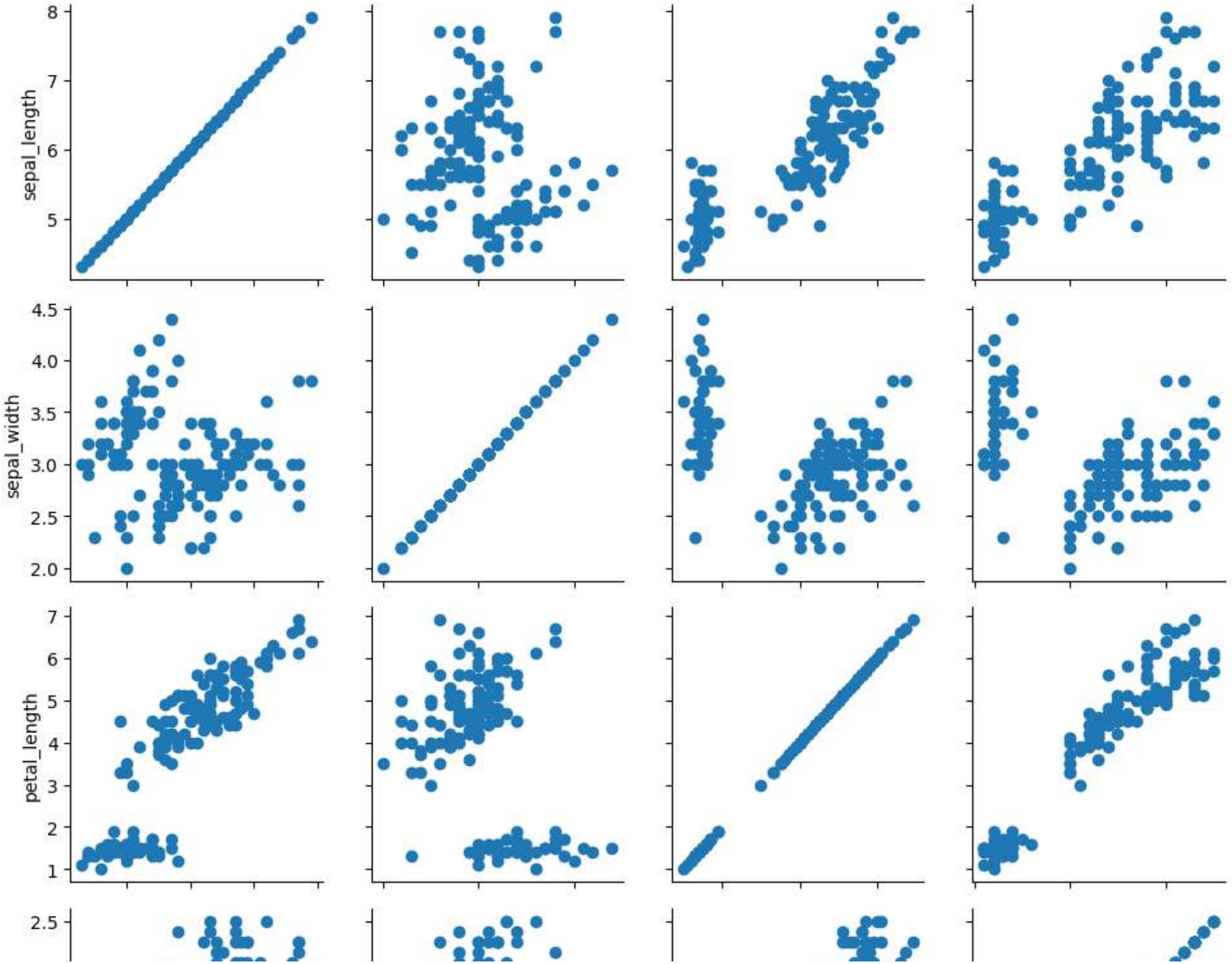
In [33]:
```
sns.jointplot(x='sepal_length', y='sepal_width', data = df, kind = 'scatter')
```

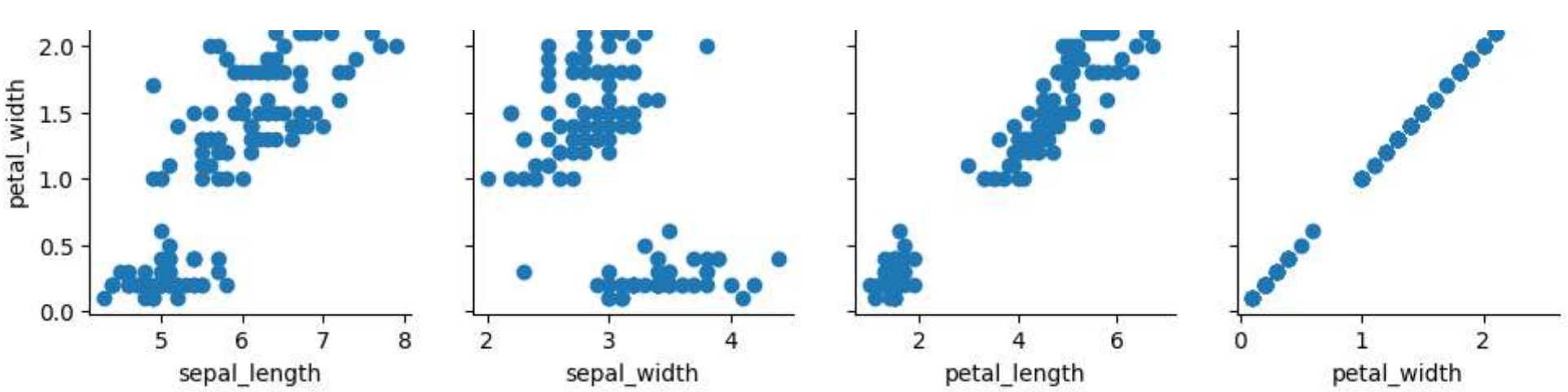
Out[33]: <seaborn.axisgrid.JointGrid at 0x221c63e9f90>



In [34]:
```
grids = sns.PairGrid(df)
grids.map(plt.scatter)
```

Out[34]:
```
<seaborn.axisgrid.PairGrid at 0x221c6b30f70>
```


sepal_length
sepal_width
petal_length
8
7
6
5
4.5
4.0
3.5
3.0
2.5
2.0
7
6
5
4
3
2
1
2.5


petal_width
2.0
1.5
1.0
0.5
0.0
5
6
7
8
sepal_length
2
3
4
sepal_width
2
4
6
petal_length
0
1
2
petal_width

In [ ]: