In [2]:
```
# !pip install seaborn
```

In [4]:
```
import seaborn as sns
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [ ]:
```

```

In [9]:
```
iris = sns.load_dataset('iris')
iris.shape
```

Out[9]:
```
(150, 5)
```

In [10]:
```
iris.head()
```

Out[10]:

	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

In [12]:
```
iris['species'].unique()
```

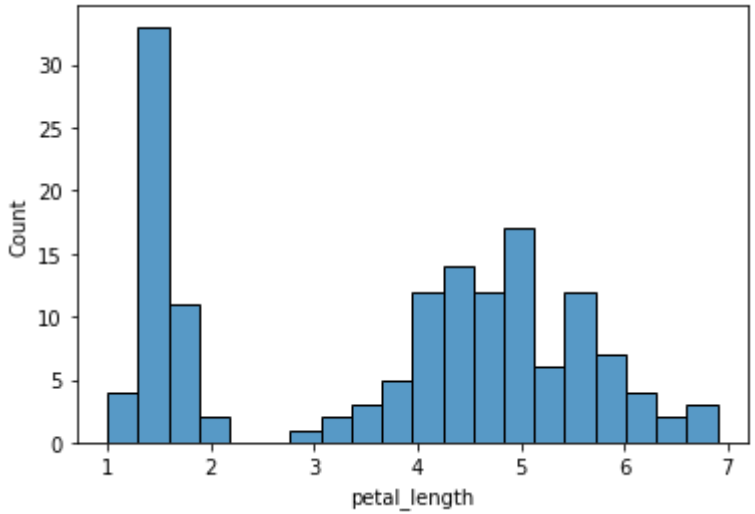
Out[12]:
```
array(['setosa', 'versicolor', 'virginica'], dtype=object)
```

In [ ]:
```

```

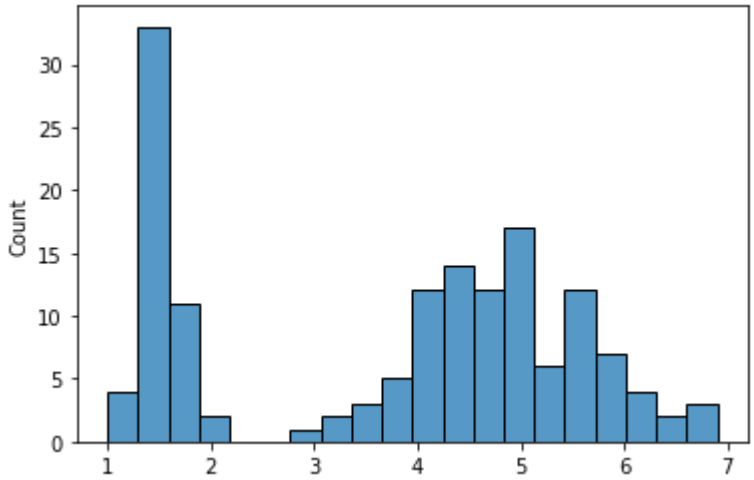
In [13]:
```
iris['petal_length']
```

Out[13]:
```
0      1.4
1      1.4
2      1.3
3      1.5
4      1.4
      ...
145    5.2
146    5.0
147    5.2
148    5.4
149    5.1
Name: petal_length, Length: 150, dtype: float64
```

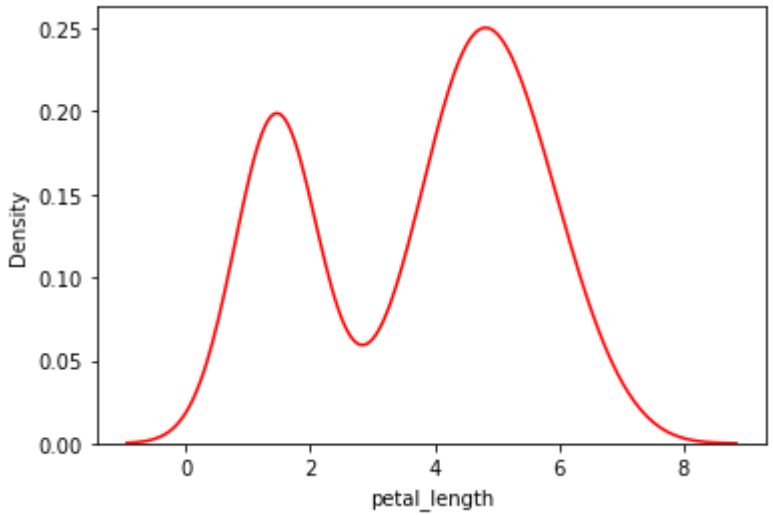
In [18]:
```
sns.histplot(data=iris, x = 'petal_length', bins=20)
plt.show()
```



In [20]:
```
sns.histplot(iris['petal_length'].values, bins=20)
plt.show()
```



In [24]:
```
sns.kdeplot(data=iris, x='petal_length', color='red')
plt.show()
```

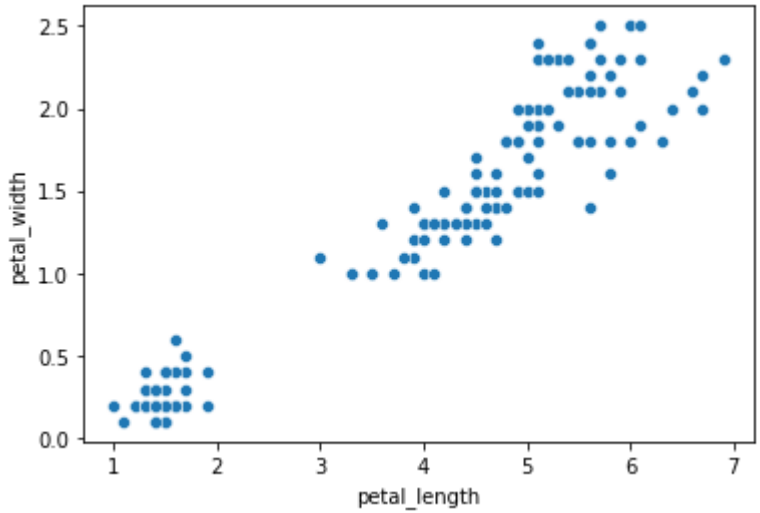


In [25]:
```
iris.head()
```

Out[25]:

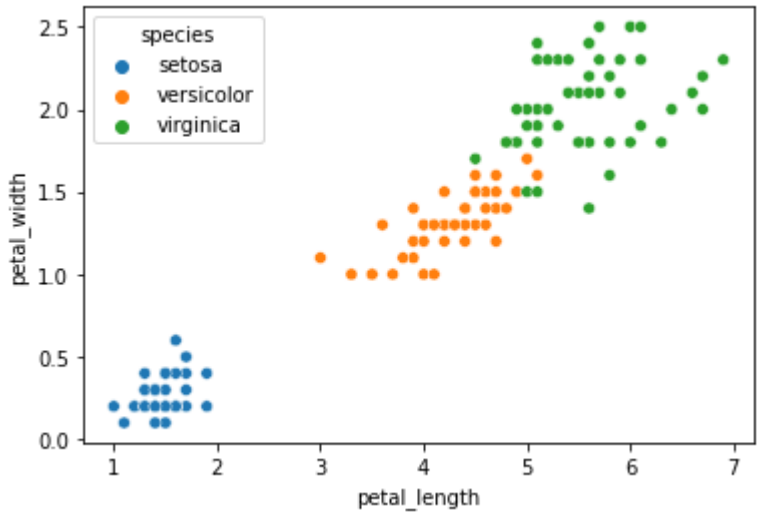
	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

In [27]:
```
sns.scatterplot(data=iris, x='petal_length', y ='petal_width')
plt.show()
```



In [ ]:

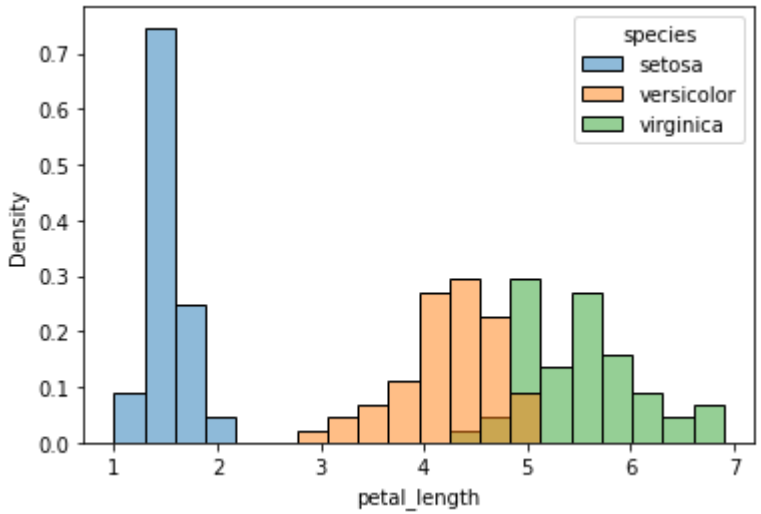
In [28]:
```
sns.scatterplot(data=iris, x='petal_length', y ='petal_width', hue = 'species')
plt.show()
```



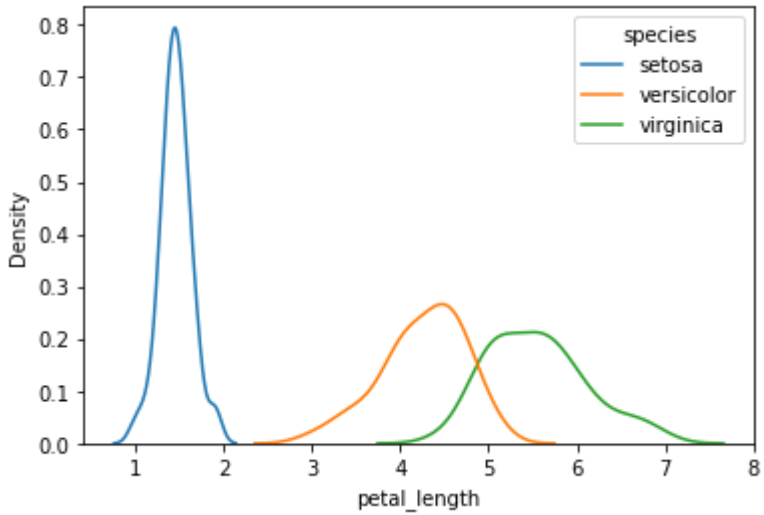
In [30]:
```
iris['species'].value_counts()
```

Out[30]:
```
virginica     50
versicolor    50
setosa        50
Name: species, dtype: int64
```

In [34]:
```
sns.histplot(data=iris, x = 'petal_length', bins=20, hue='species', stat='density')
plt.show()
```



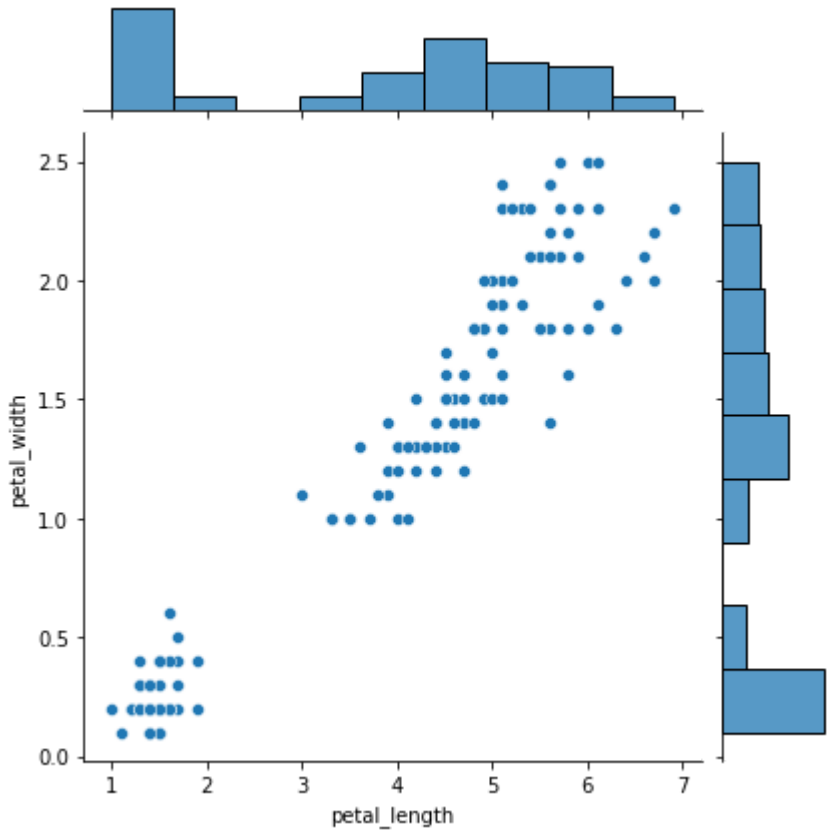
In [35]:
```
sns.kdeplot(data=iris, x='petal_length', hue='species')
plt.show()
```



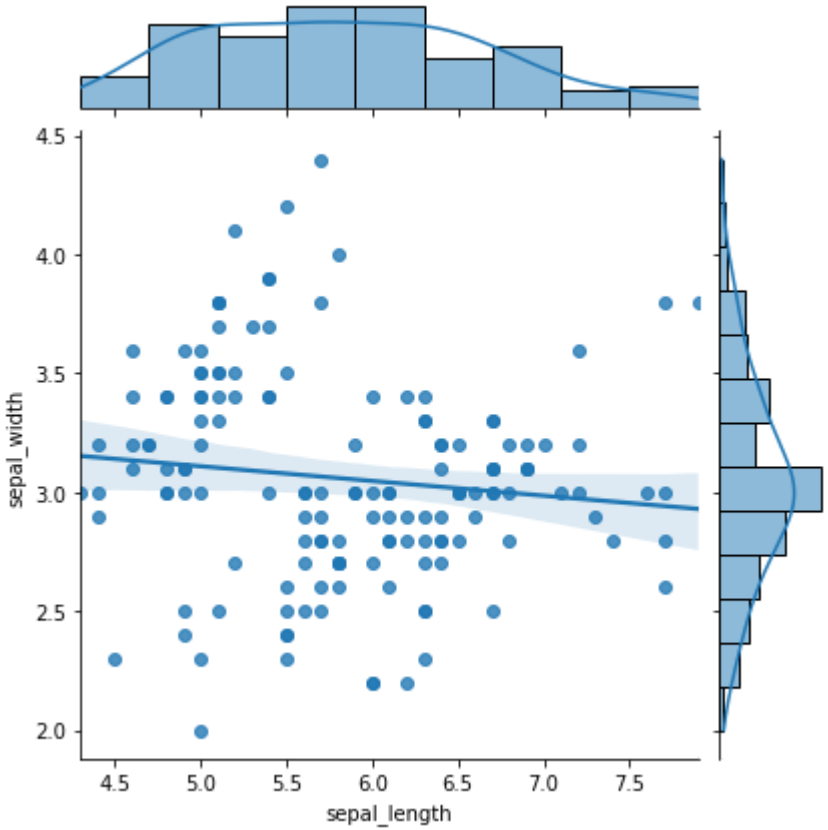
In [ ]:

JointPlot

In [38]:
```
sns.jointplot(data=iris, x='petal_length', y='petal_width')
plt.show()
```

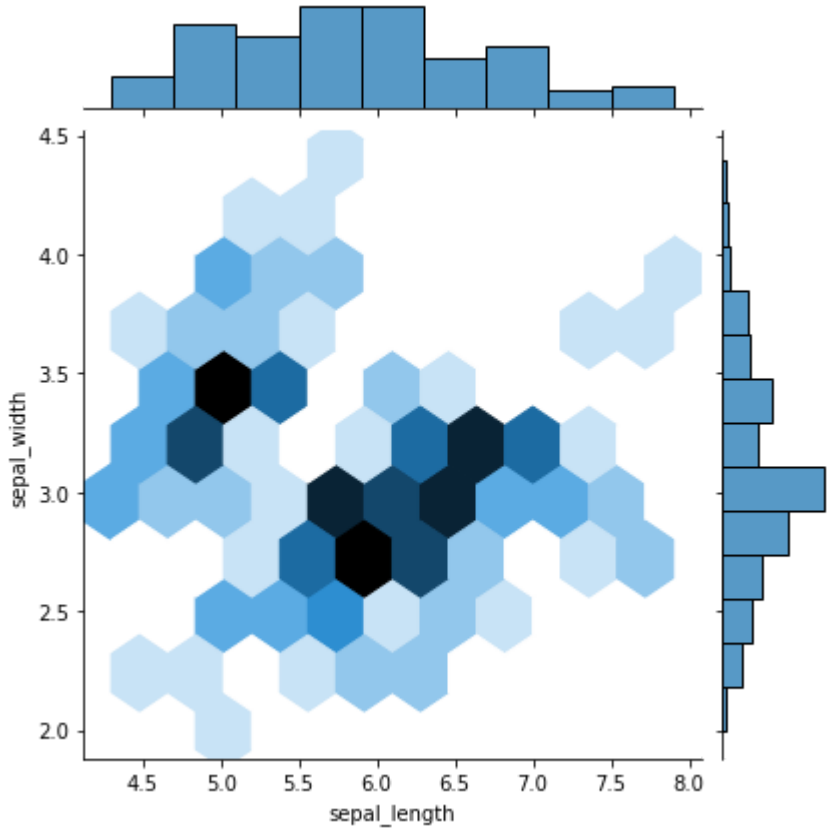


In [41]:
```
sns.jointplot(data=iris, x='sepal_length', y='sepal_width', kind='reg')
plt.show()
```



Hexabin Plotting

In [45]:
```
sns.jointplot(data=iris, x='sepal_length', y='sepal_width', kind='hex')
plt.show()
```



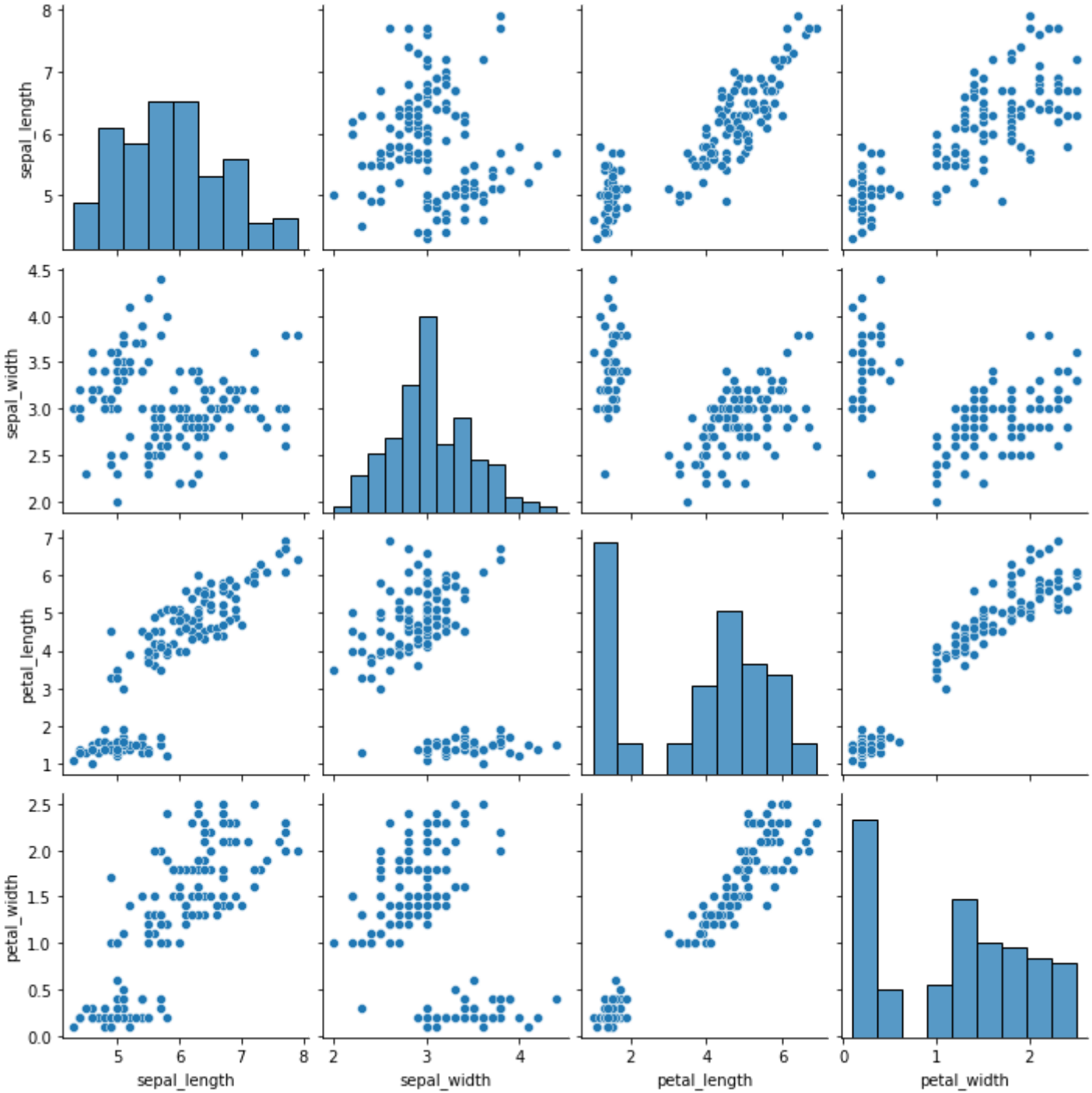
In [ ]:

In [43]:
```
# plt.hexbin()
```

In [ ]:

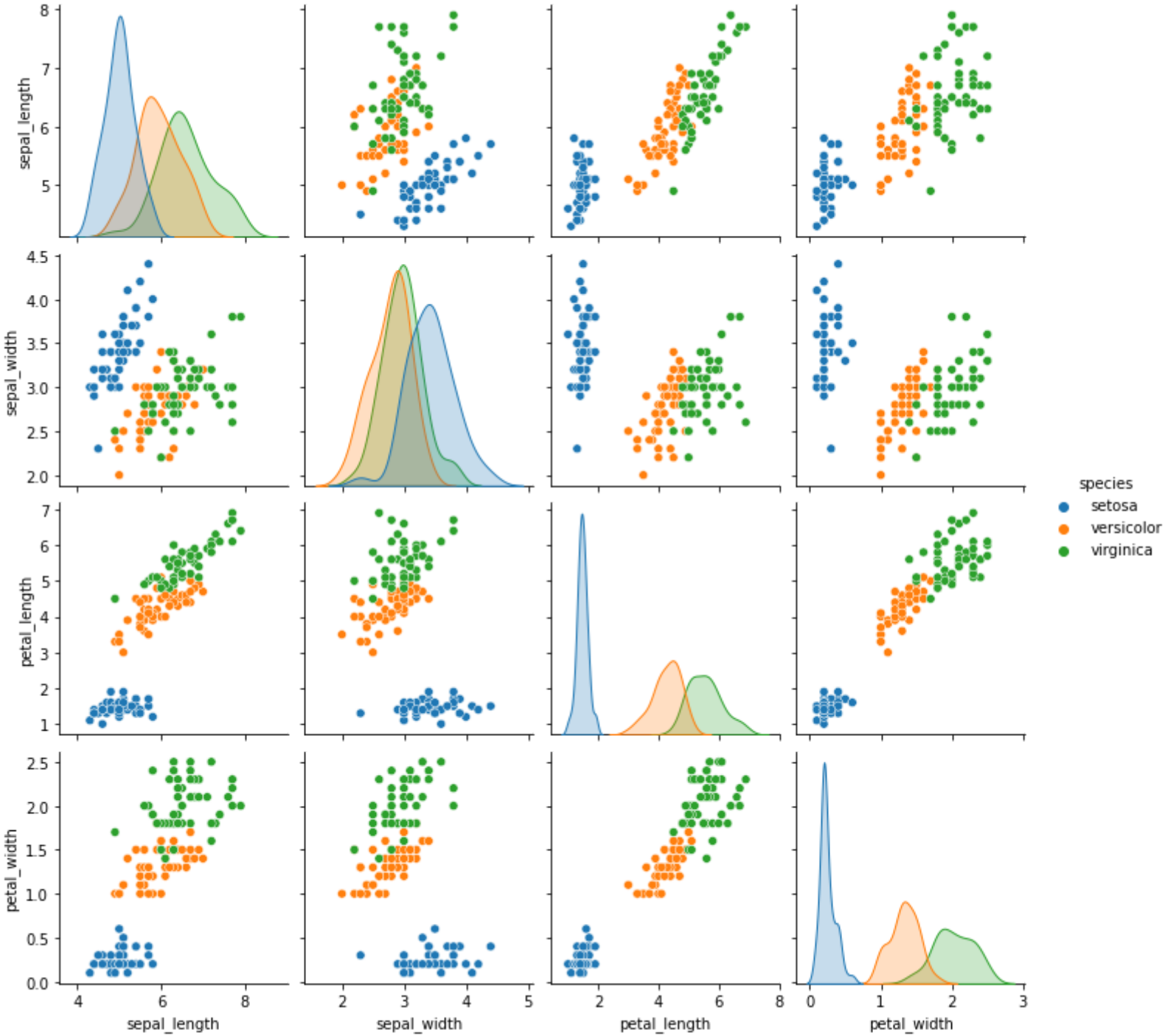
Pairplot

In [47]:
```
sns.pairplot(data= iris)
plt.show()
```


sepal_length
sepal_width
petal_length
petal_width
sepal_length
sepal_width
petal_length
petal_width

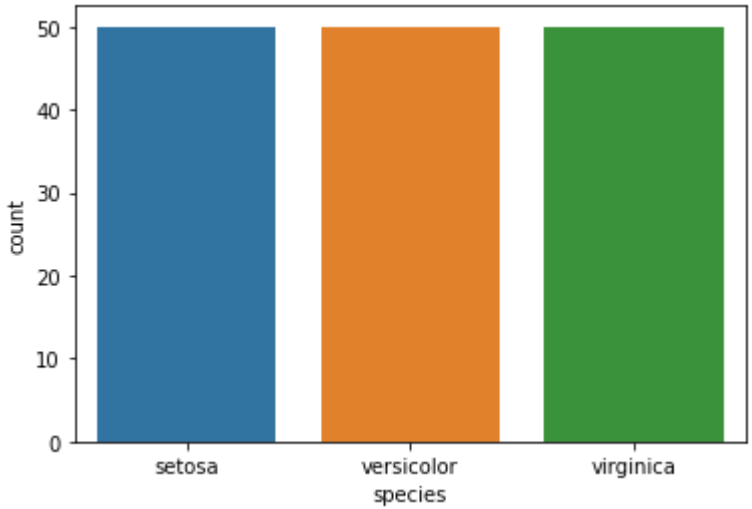
In [ ]:

In [48]:
```
sns.pairplot(data= iris, hue='species')
plt.show()
```


sepal_length
sepal_width
petal_length
petal_width
species
setosa
versicolor
virginica

In [ ]:

In [51]:
```
sns.countplot(data=iris, x='species')
plt.show()
```

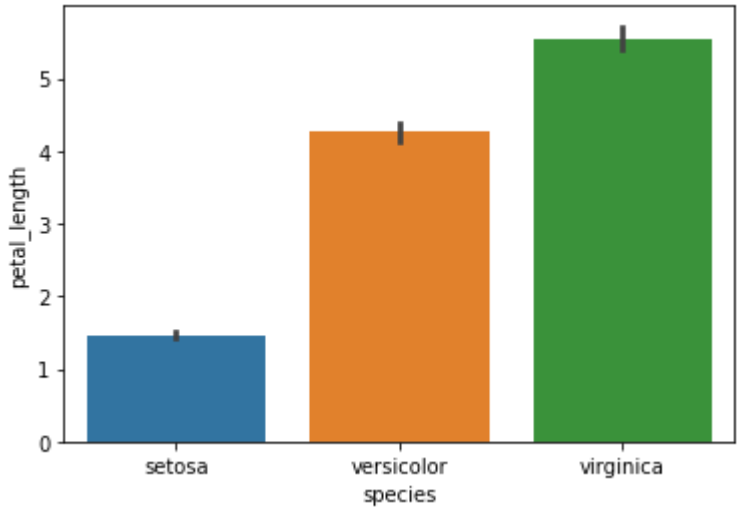


In [53]:
```
iris['species'].value_counts()
```

Out[53]:
```
virginica     50
versicolor    50
setosa        50
Name: species, dtype: int64
```

In [55]:
```
sns.barplot(data=iris, x='species', y= 'petal_length')
```

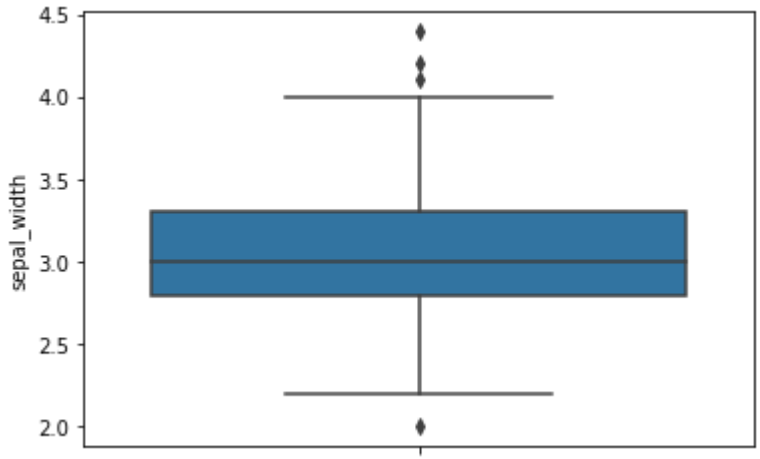
Out[55]:
```
<AxesSubplot:xlabel='species', ylabel='petal_length'>
```



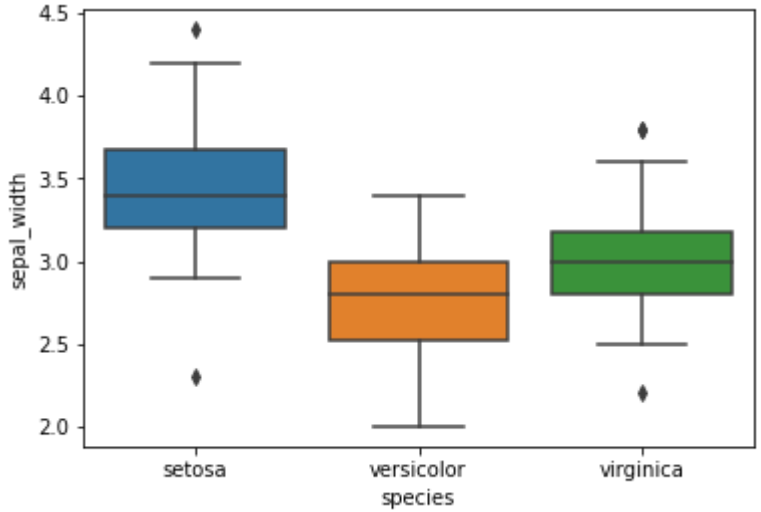
In [ ]:
```

```

Boxplot

In [66]:
```
sns.boxplot(data=iris, y='sepal_width')
plt.show()
```

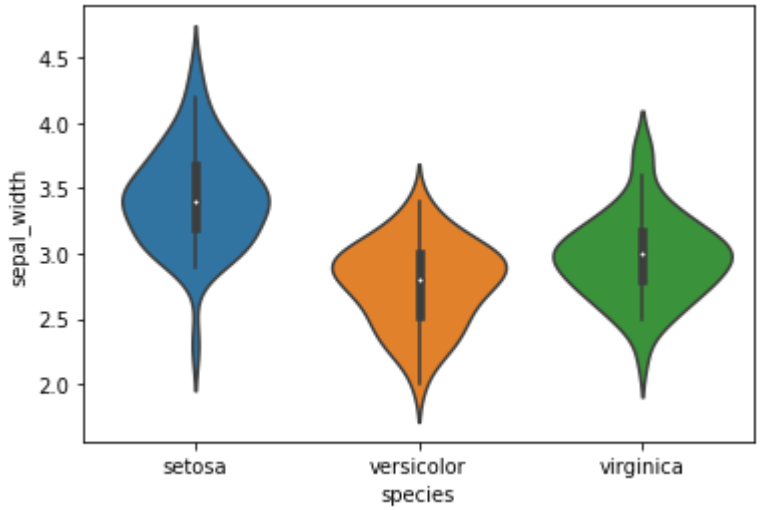


In [62]:
```
sns.boxplot(data=iris, y='sepal_width', x='species')
plt.show()
```



In [ ]:

In [67]:
```
sns.violinplot(data=iris, x='species', y = 'sepal_width')
plt.show()
```



In [ ]:
```
```

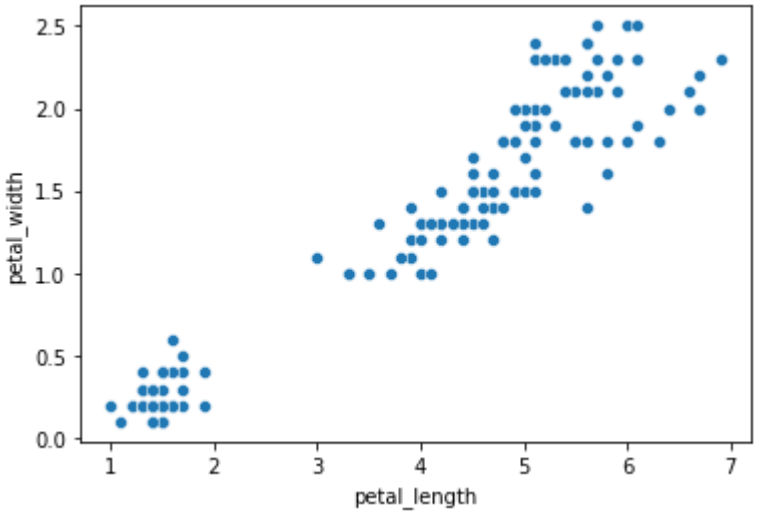
Correlations

In [76]:
```
corr = iris.corr()
corr
```

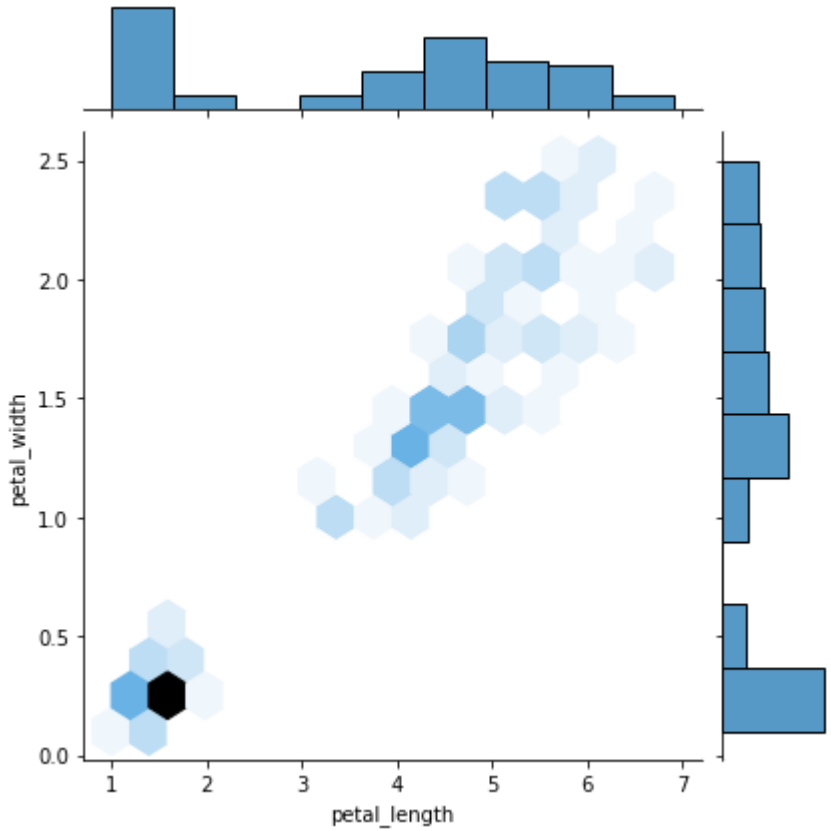
Out[76]:

	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

In [73]:
```
sns.scatterplot(data=iris, x='petal_length', y='petal_width')
plt.show()
```

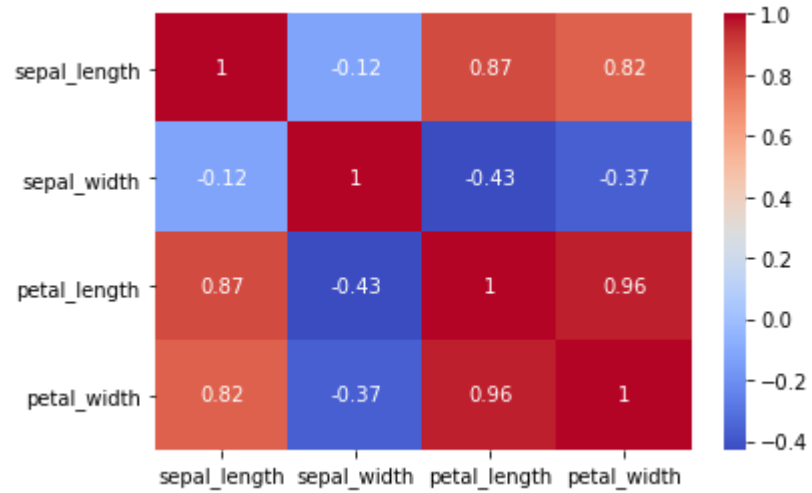


In [75]:
```
sns.jointplot(data=iris, x='petal_length', y='petal_width', kind='hex', gridsize=15)
plt.show()
```



In [ ]:

In [86]:
```
sns.heatmap(corr, cmap="coolwarm", annot=True, )
plt.show()
```



Accent', 'Accent_r', 'Blues', 'Blues_r', 'BrBG', 'BrBG_r', 'BuGn', 'BuGn_r', 'BuPu', 'BuPu_r', 'CMRmap', 'CMRmap_r', 'Dark2', 'Dark2_r', 'GnBu', 'GnBu_r', 'Greens', 'Greens_r', 'Greys', 'Greys_r', 'OrRd', 'OrRd_r', 'Oranges', 'Oranges_r', 'PRGn', 'PRGn_r', 'Paired', 'Paired_r', 'Pastel1', 'Pastel1_r', 'Pastel2', 'Pastel2_r', 'PiYG', 'PiYG_r', 'PuBu', 'PuBuGn', 'PuBuGn_r', 'PuBu_r', 'PuOr', 'PuOr_r', 'PuRd', 'PuRd_r', 'Purples', 'Purples_r', 'RdBu', 'RdBu_r', 'RdGy', 'RdGy_r', 'RdPu', 'RdPu_r', 'RdYlBu', 'RdYlBu_r', 'RdYlGn', 'RdYlGn_r', 'Reds', 'Reds_r', 'Set1', 'Set1_r', 'Set2', 'Set2_r', 'Set3', 'Set3_r', 'Spectral', 'Spectral_r', 'Wistia', 'Wistia_r', 'YlGn', 'YlGnBu', 'YlGnBu_r', 'YlGn_r', 'YlOrBr', 'YlOrBr_r', 'YlOrRd', 'YlOrRd_r', 'afmhot', 'afmhot_r', 'autumn', 'autumn_r', 'binary', 'binary_r', 'bone', 'bone_r', 'brg', 'brg_r', 'bwr', 'bwr_r', 'cividis', 'cividis_r', 'cool', 'cool_r', 'coolwarm', 'coolwarm_r', 'copper', 'copper_r', 'crest', 'crest_r', 'cubehelix', 'cubehelix_r', 'flag', 'flag_r', 'flare', 'flare_r', 'gist_earth', 'gist_earth_r', 'gist_gray', 'gist_gray_r', 'gist_heat', 'gist_heat_r', 'gist_ncar', 'gist_ncar_r', 'gist_rainbow', 'gist_rainbow_r', 'gist_stern', 'gist_stern_r', 'gist_yarg', 'gist_yarg_r', 'gnuplot', 'gnuplot2', 'gnuplot2_r', 'gnuplot_r', 'gray', 'gray_r', 'hot', 'hot_r', 'hsv', 'hsv_r', 'icefire', 'icefire_r', 'inferno', 'inferno_r', 'jet', 'jet_r', 'magma', 'magma_r', 'mako', 'mako_r', 'nipy_spectral', 'nipy_spectral_r', 'ocean', 'ocean_r', 'pink', 'pink_r', 'plasma', 'plasma_r', 'prism', 'prism_r', 'rainbow', 'rainbow_r', 'rocket', 'rocket_r', 'seismic', 'seismic_r', 'spring', 'spring_r', 'summer', 'summer_r', 'tab10', 'tab10_r', 'tab20', 'tab20_r', 'tab20b', 'tab20b_r', 'tab20c', 'tab20c_r', 'terrain', 'terrain_r', 'turbo', 'turbo_r', 'twilight', 'twilight_r', 'twilight_shifted', 'twilight_shifted_r', 'viridis', 'viridis_r', 'vlag', 'vlag_r', 'winter', 'winter_r'

In [ ]:

In [ ]:

Challenge

In [87]:
```
tips = sns.load_dataset('tips')
tips.shape
```

Out[87]:
```
(244, 7)
```

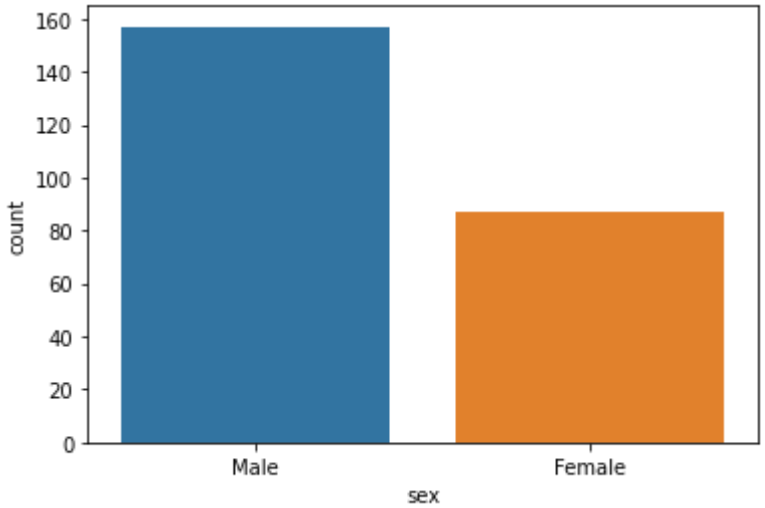
In [88]:
```
tips.head()
```

Out[88]:

	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4

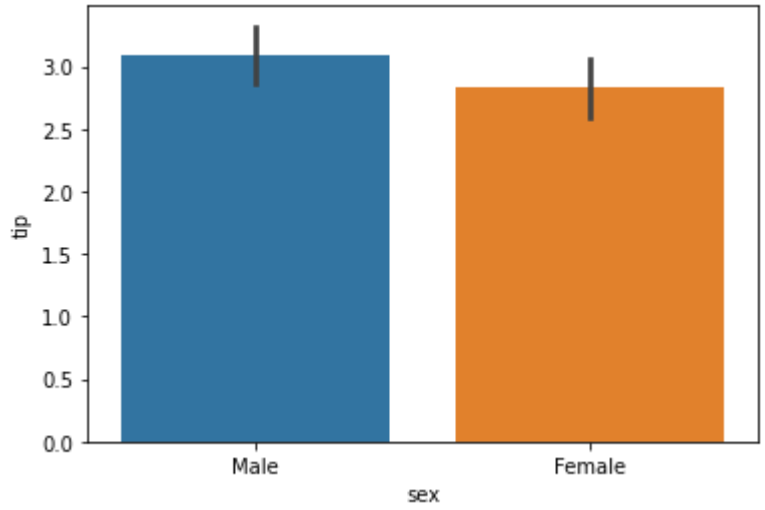
In [89]:
```
sns.countplot(data=tips, x='sex')
```

Out[89]:
```
<AxesSubplot:xlabel='sex', ylabel='count'>
```



In [90]:
```
sns.barplot(data=tips, x='sex', y='tip')
```

Out[90]:
```
<AxesSubplot:xlabel='sex', ylabel='tip'>
```



In [ ]:

In [91]:
```
tips.head()
```

Out[91]:

	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: