Q1.

""" Histograms :

- used to represent the distribution of a single variable. They display the frequency or density of data points in bins or intervals.

Scatter Plots :

- used to visualize the relationship between two numerical variables.

Bar Plots :

- used for showing counts, proportions, or aggregations.

Box Plots :

- used to visualize the distribution and spread of data.

Violin Plots :

- used to visualize the distribution of data and provide insights into both central tendency and spread.

"""

Q2.

In [2]:
```
import seaborn as sns
import matplotlib.pyplot as plt
```

In [3]:
```
fmri = sns.load_dataset('fmri')
```

In [4]:
```
fmri
```

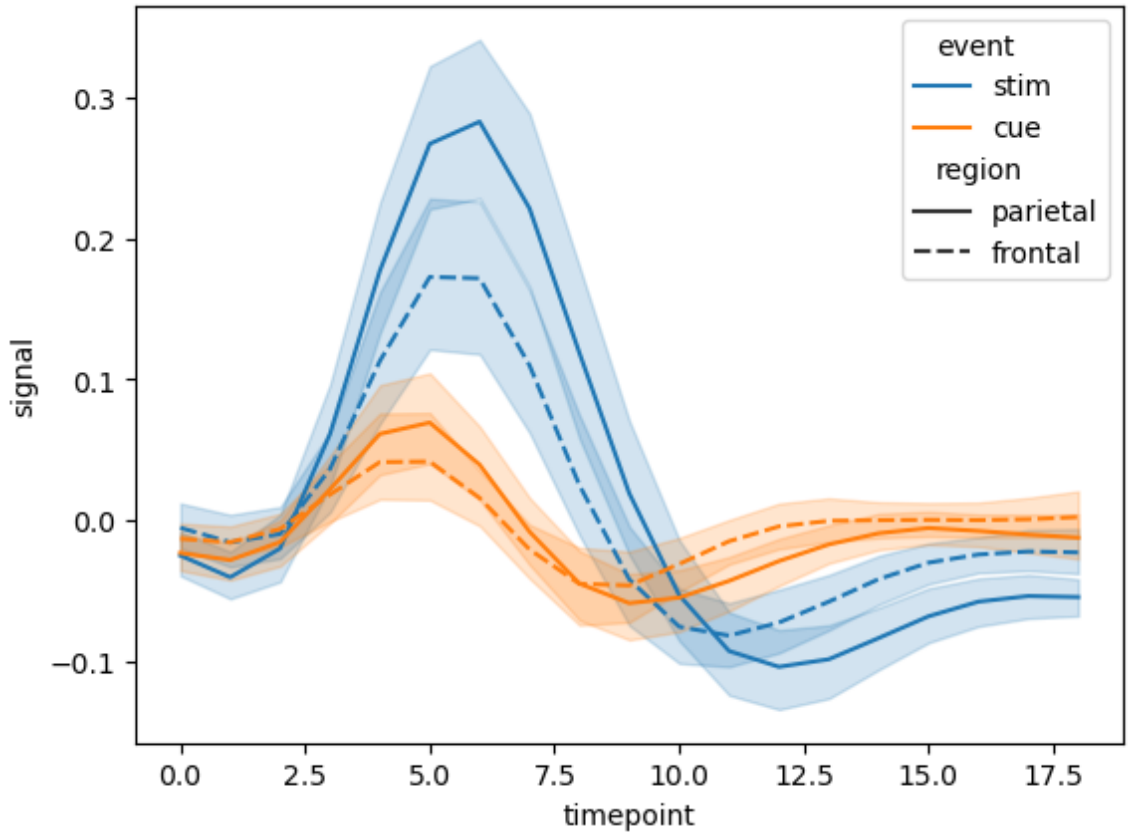
Out[4]:

	subject	timepoint	event	region	signal
0	s13	18	stim	parietal	-0.017552
1	s5	14	stim	parietal	-0.080883
2	s12	18	stim	parietal	-0.081033
3	s11	18	stim	parietal	-0.046134
4	s10	18	stim	parietal	-0.037970
...	...	...	...	...	...
1059	s0	8	cue	frontal	0.018165
1060	s13	7	cue	frontal	-0.029130
1061	s12	7	cue	frontal	-0.004939
1062	s11	7	cue	frontal	-0.025367
1063	s0	0	cue	parietal	-0.006899

1064 rows × 5 columns

In [12]:
```
sns.lineplot(x='timepoint',y='signal',hue='event',style='region',data=fmri)
```

Out[12]:
```
<AxesSubplot: xlabel='timepoint', ylabel='signal'>
```



Q3.

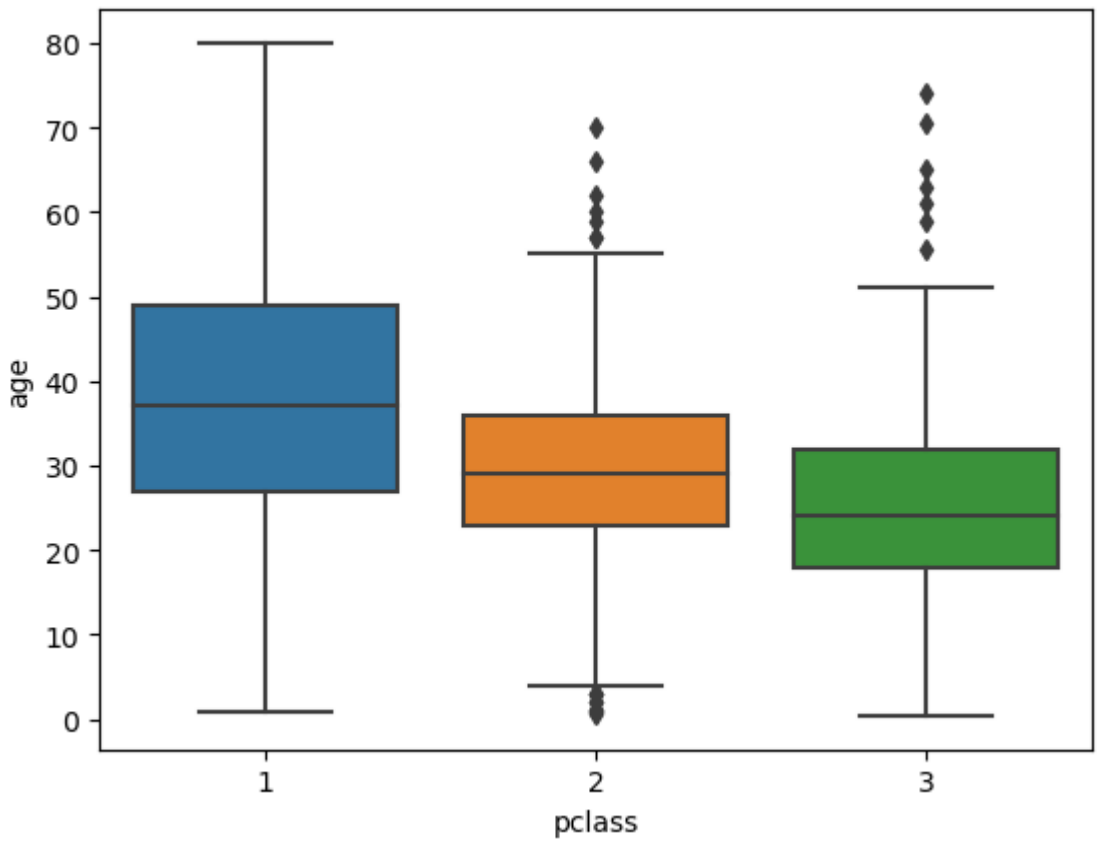
In [7]:
```
td = sns.load_dataset('titanic')
td
```

Out[7]:

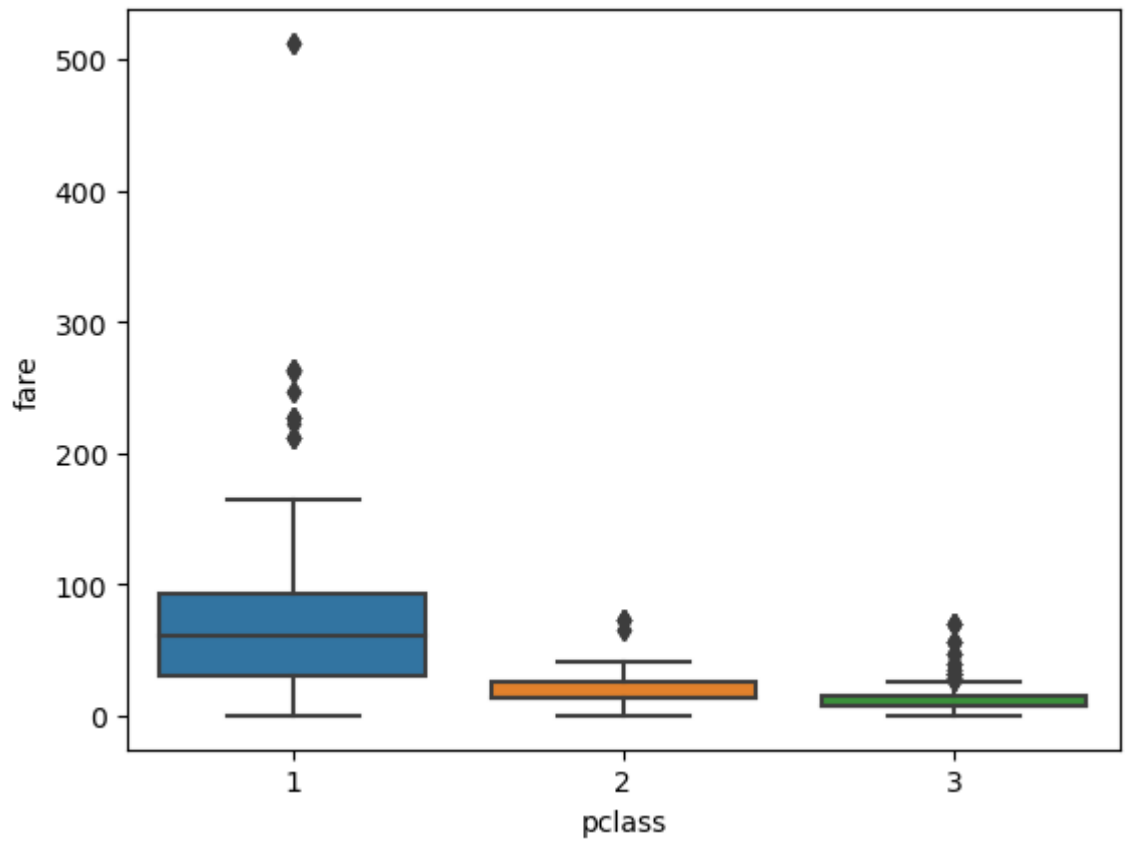
	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_m
0	0	3	male	22.0	1	0	7.2500	S	Third	man	
1	1	1	female	38.0	1	0	71.2833	C	First	woman	F
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	F
3	1	1	female	35.0	1	0	53.1000	S	First	woman	F
4	0	3	male	35.0	0	0	8.0500	S	Third	man	
...	...	...	...	...	...	...	...	...	...	...	
886	0	2	male	27.0	0	0	13.0000	S	Second	man	
887	1	1	female	19.0	0	0	30.0000	S	First	woman	F
888	0	3	female	NaN	1	2	23.4500	S	Third	woman	F
889	1	1	male	26.0	0	0	30.0000	C	First	man	
890	0	3	male	32.0	0	0	7.7500	Q	Third	man	

891 rows × 15 columns

In [11]:
```
sns.boxplot(x='pclass',y='age',data=td)
plt.show()
```



In [10]:
```
sns.boxplot(x='pclass',y='fare',data=td)
plt.show()
```



Q4.

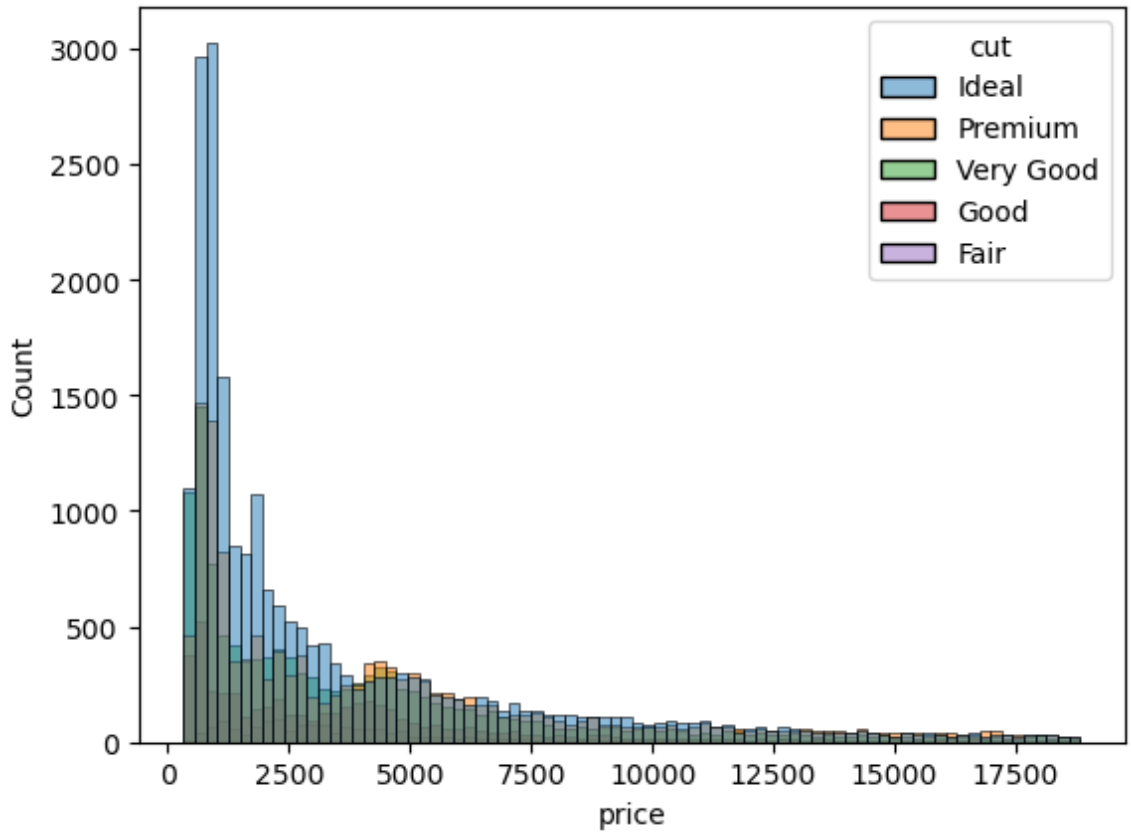
In [13]:
```
d = sns.load_dataset('diamonds')
d
```

Out[13]:

	carat	cut	color	clarity	depth	table	price	x	y	z
0	0.23	Ideal	E	SI2	61.5	55.0	326	3.95	3.98	2.43
1	0.21	Premium	E	SI1	59.8	61.0	326	3.89	3.84	2.31
2	0.23	Good	E	VS1	56.9	65.0	327	4.05	4.07	2.31
3	0.29	Premium	I	VS2	62.4	58.0	334	4.20	4.23	2.63
4	0.31	Good	J	SI2	63.3	58.0	335	4.34	4.35	2.75
...	...	...	...	...	...	...	...	...	...	...
53935	0.72	Ideal	D	SI1	60.8	57.0	2757	5.75	5.76	3.50
53936	0.72	Good	D	SI1	63.1	55.0	2757	5.69	5.75	3.61
53937	0.70	Very Good	D	SI1	62.8	60.0	2757	5.66	5.68	3.56
53938	0.86	Premium	H	SI2	61.0	58.0	2757	6.15	6.12	3.74
53939	0.75	Ideal	D	SI2	62.2	55.0	2757	5.83	5.87	3.64

53940 rows × 10 columns

In [15]:
```
sns.histplot(x='price',hue='cut',data=d)
plt.show()
```



Q5.

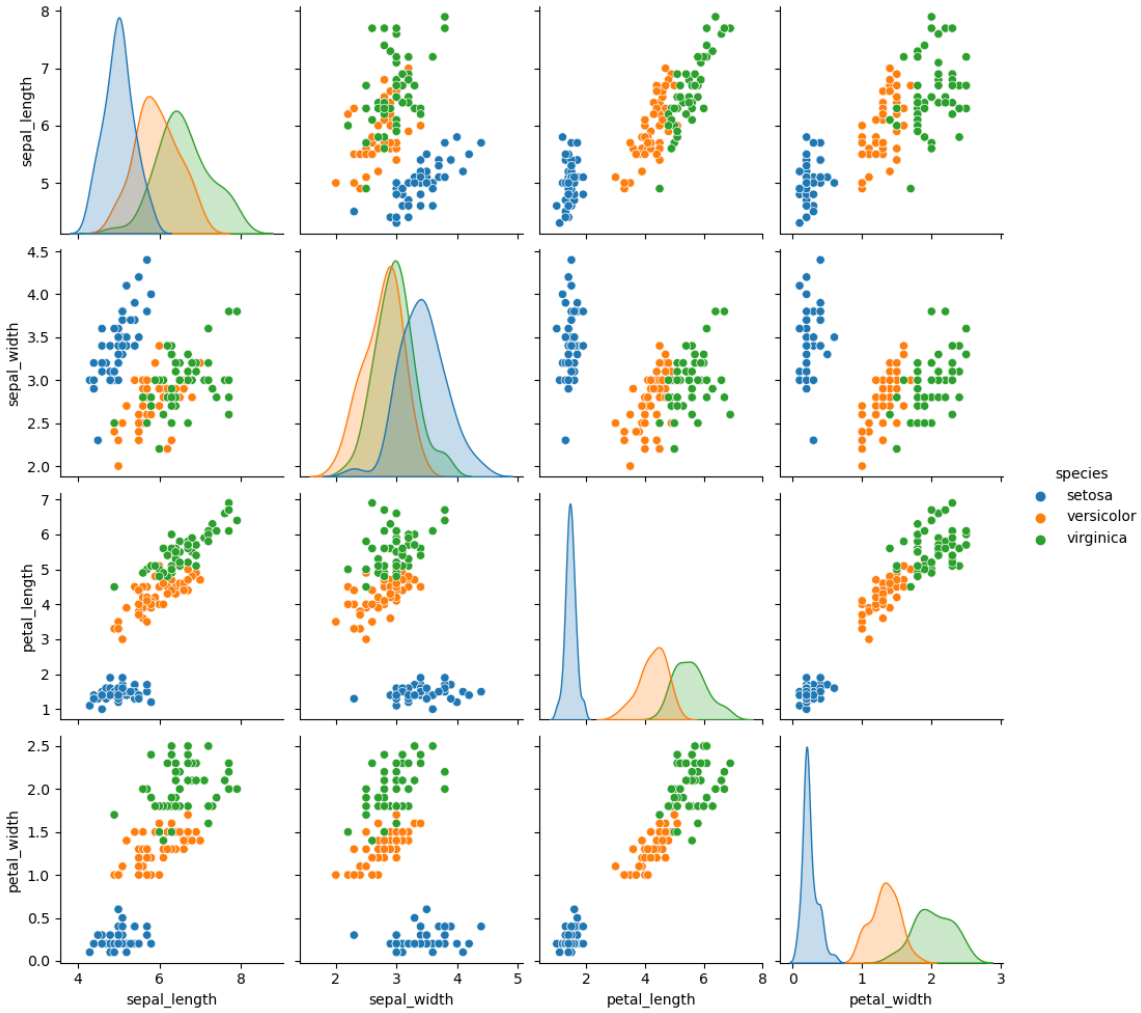
In [16]:
```
iris = sns.load_dataset('iris')
iris
```

Out[16]:

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

150 rows × 5 columns

In [17]:
```
sns.pairplot(hue='species',data=iris)
plt.show()
```



In [18]:
```
f = sns.load_dataset('flights')
f
```

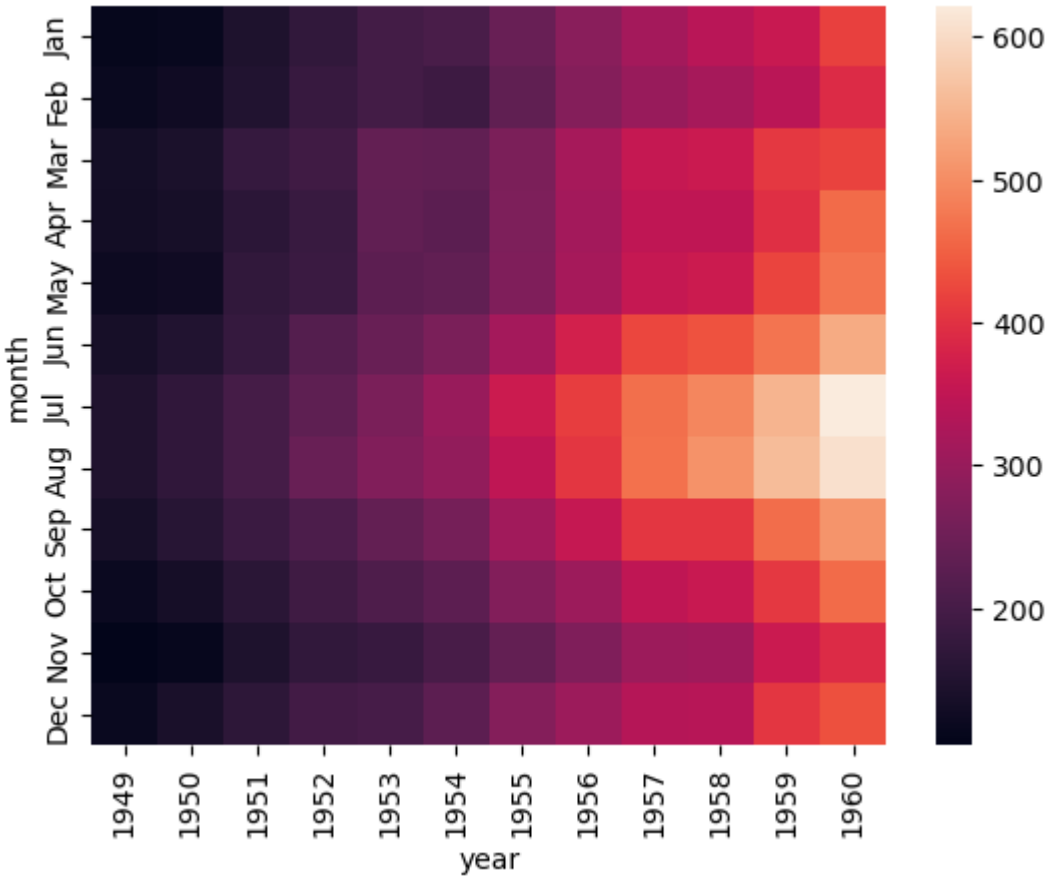
Out[18]:

	year	month	passengers
0	1949	Jan	112
1	1949	Feb	118
2	1949	Mar	132
3	1949	Apr	129
4	1949	May	121
...	...	...	...
139	1960	Aug	606
140	1960	Sep	508
141	1960	Oct	461
142	1960	Nov	390
143	1960	Dec	432

144 rows × 3 columns

In [29]:
```
# fl = f.pivot('month','year','passengers')
sns.heatmap(data = fl)
```

```
plt.show()
```


month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
year
600
500
400
300
200