```python
import seaborn as pns
import pandas as pd
import matplotlib.pyplot as plt

titanic= pd.read_csv("titanic.csv")

titanic.head()
```

```
   pclass  survived                                           name     sex  \
0     1.0       1.0                      Allen, Miss. Elisabeth Walton  female
1     1.0       1.0                     Allison, Master. Hudson Trevor    male
2     1.0       0.0                       Allison, Miss. Helen Loraine  female
3     1.0       0.0               Allison, Mr. Hudson Joshua Creighton    male
4     1.0       0.0  Allison, Mrs. Hudson J C (Bessie Waldo Daniels)  female

       age  sibsp  parch  ticket      fare     cabin embarked boat   body  \
0  29.0000    0.0    0.0   24160  211.3375        B5        S    2    NaN
1   0.9167    1.0    2.0  113781  151.5500  C22 C26        S   11    NaN
2   2.0000    1.0    2.0  113781  151.5500  C22 C26        S  NaN    NaN
3  30.0000    1.0    2.0  113781  151.5500  C22 C26        S  NaN  135.0
4  25.0000    1.0    2.0  113781  151.5500  C22 C26        S  NaN    NaN

                         home.dest
0                       St Louis, MO
1  Montreal, PQ / Chesterville, ON
2  Montreal, PQ / Chesterville, ON
3  Montreal, PQ / Chesterville, ON
4  Montreal, PQ / Chesterville, ON
```
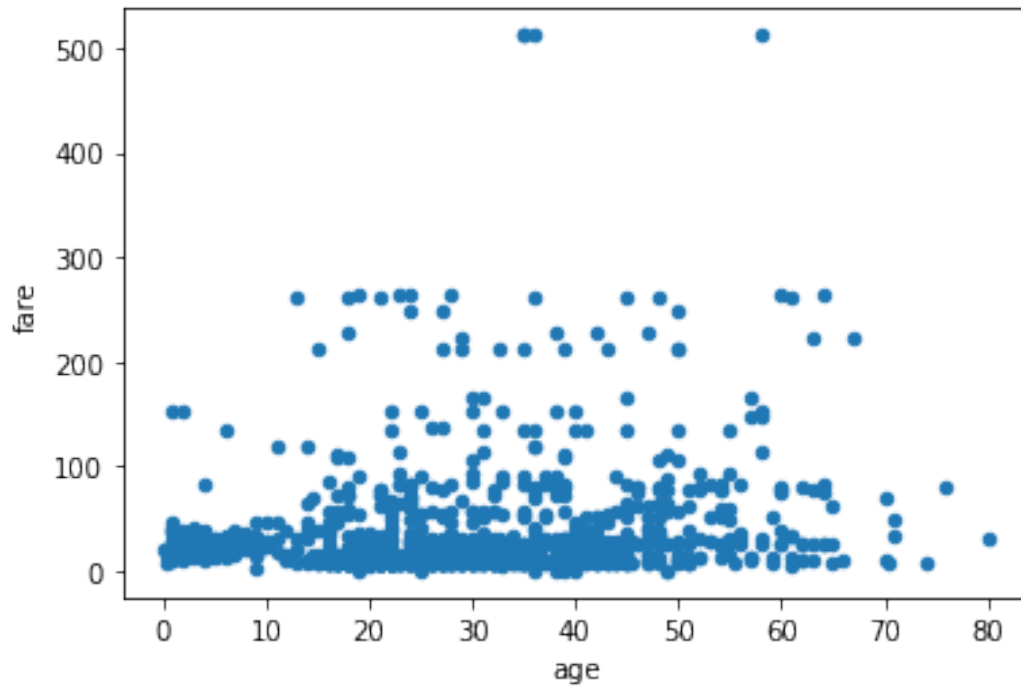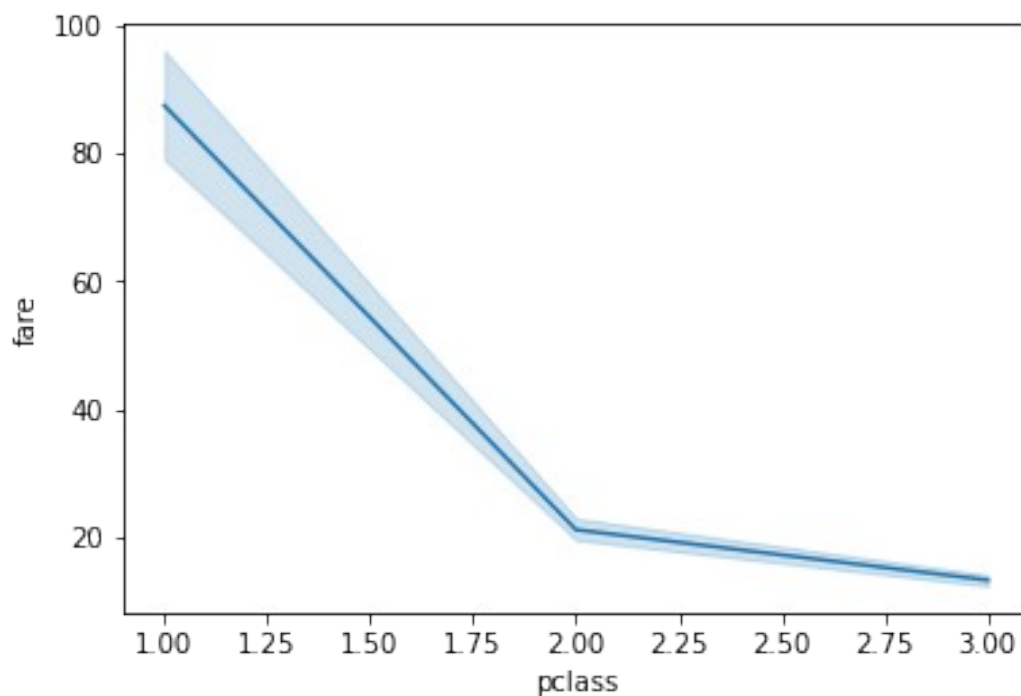
```python
titanic.plot(kind="scatter",x="age",y="fare")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f851bba5210>
```

```
pns.lineplot(x="pclass",y="fare",data=titanic)
plt.show()
```
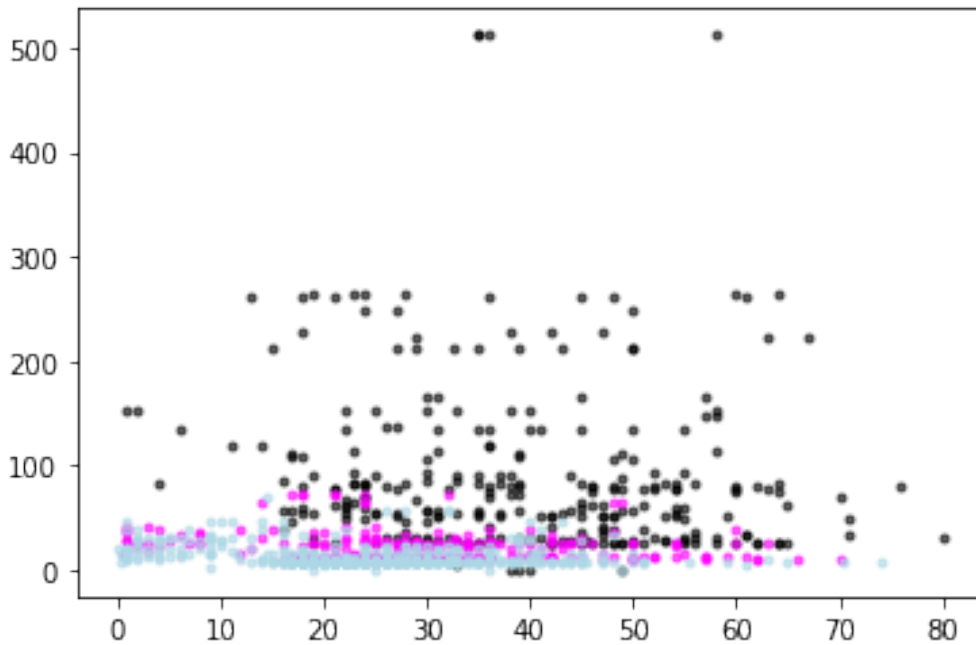


```
titanic_pclass_fig, titanic_pclass_ax = plt.subplots()
# choose 3 colors for points:
color = ['black', 'magenta', 'lightblue']
# loop over pclass groups to plot on same access
```

```python
count = 0
for name, group in titanic.groupby( 'pclass'):
    titanic_pclass_ax.plot(group. age, group. fare, '.',
label = name, alpha = 0.6, c = color[count])
    count += 1
```
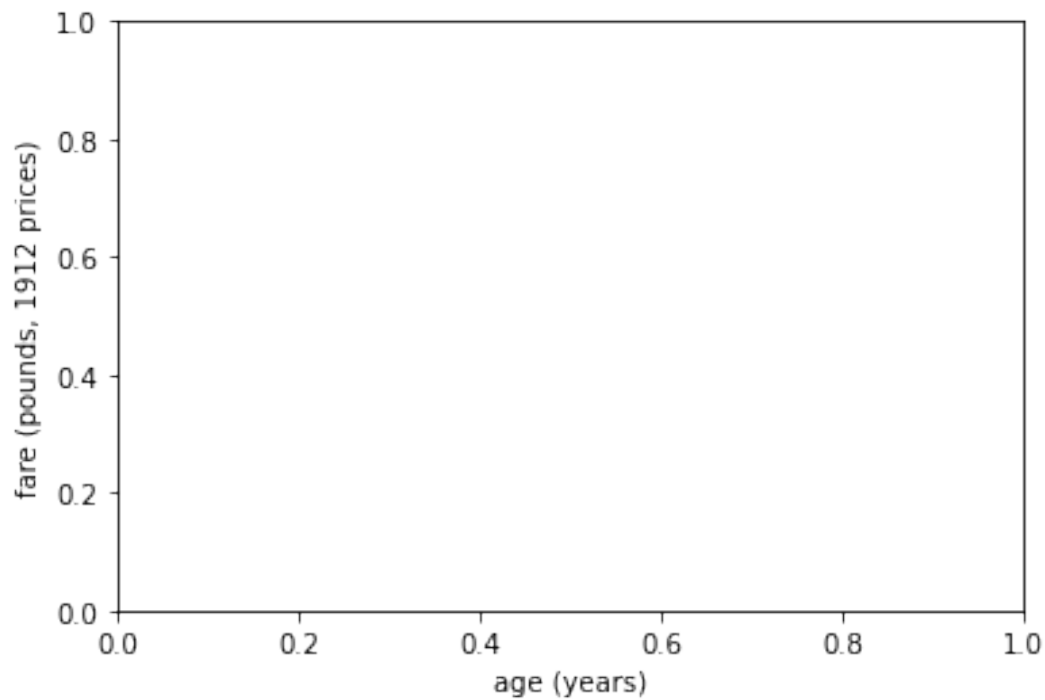


```python
# set legend
titanic_pclass_ax.legend(numpoints=1, title = "Passenger class",
fontsize = 10)
# set axis labels and limits
plt.xlabel('age (years)')
plt.ylabel('fare (pounds, 1912 prices)')
titanic_pclass_ax.set_xlim(-1, 85)
titanic_pclass_ax.set_ylim(-1, 500)
plt.show(titanic_pclass_fig)
```

```
titanic_hist = titanic.fare.plot.hist(bins = 40,color = 'blue')
plt.xlabel('fare (pounds, 1912 prices)')
plt.show(titanic_hist)
```
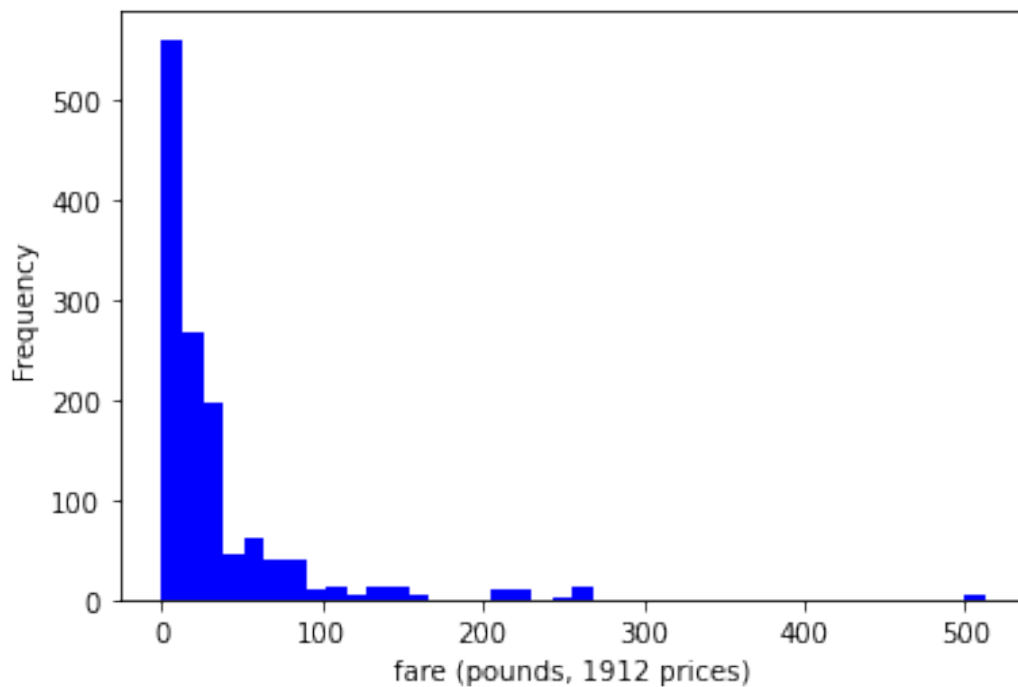


```
pclass_fare_titanic = titanic[['pclass', 'fare']].pivot(columns =
'pclass', values = 'fare')
box_color = dict(boxes = 'black', whiskers = 'black', medians =
```

```
'blue', caps = 'black')
titanic_pclass_boxplot = pclass_fare_titanic.plot.box(color =
box_color)
plt.xlabel('Passenger class')
plt.ylabel('fare (pounds, 1912 prices)')
plt.show(titanic_pclass_boxplot)
```

/usr/local/lib/python3.7/dist-packages/matplotlib/cbook/
__init__.py:1376: VisibleDeprecationWarning: Creating an ndarray from
ragged nested sequences (which is a list-or-tuple of lists-or-tuples-
or ndarrays with different lengths or shapes) is deprecated. If you
meant to do this, you must specify 'dtype=object' when creating the
ndarray.
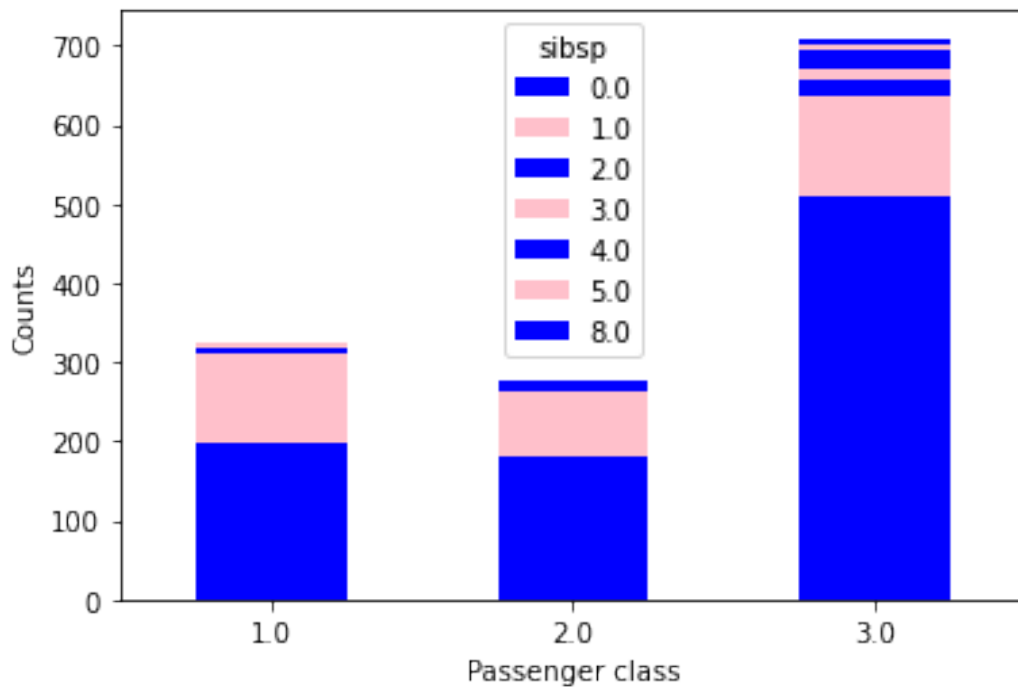 X = np.atleast_1d(X.T if isinstance(X, np.ndarray) else
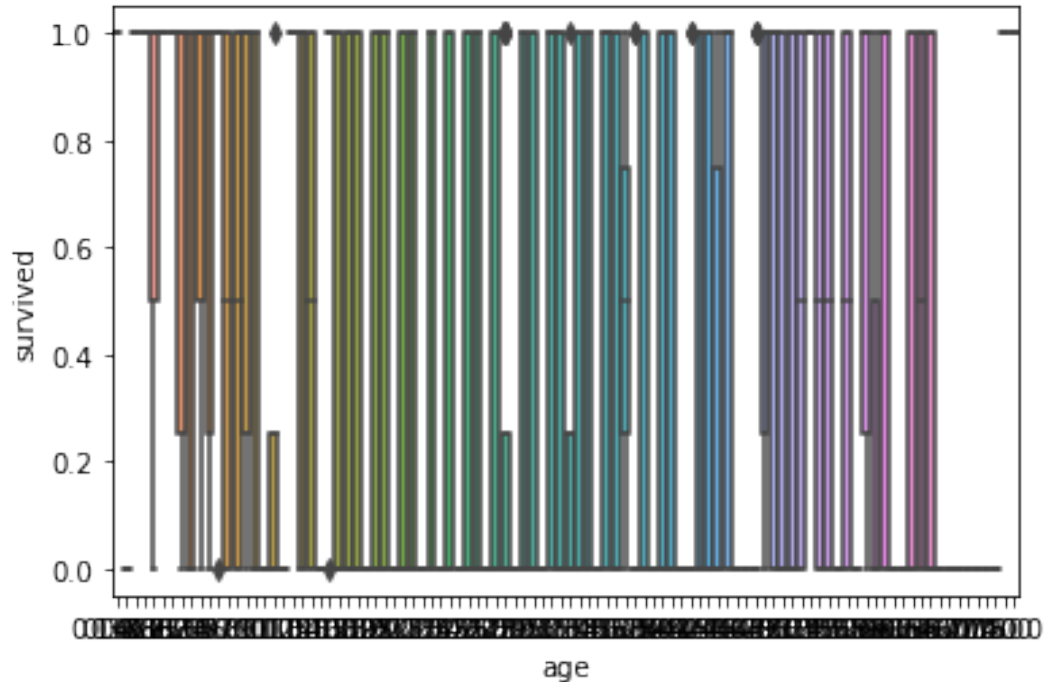np.asarray(X))
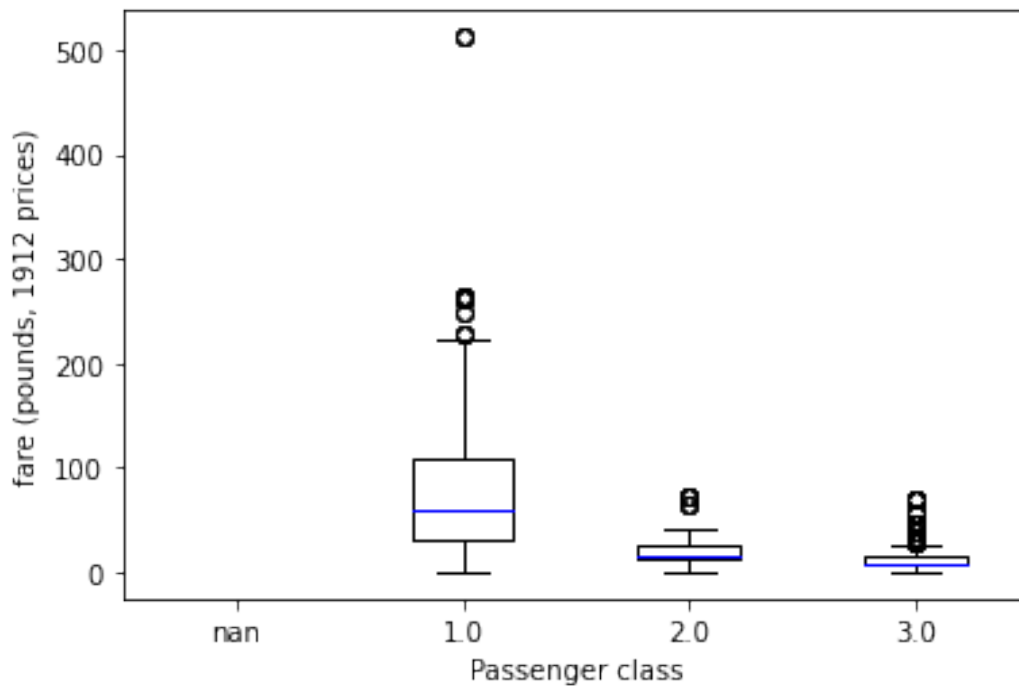

```
# bar plot
contingency_titanic = titanic.groupby (['pclass',
'sibsp']).size().unstack()
titanic_barplot = contingency_titanic.plot.bar(stacked=True,
color = ["blue", "pink"])
plt.ylabel("Counts")
plt.xlabel('Passenger class')
plt.xticks (rotation=0)
plt.show(titanic_barplot)
```
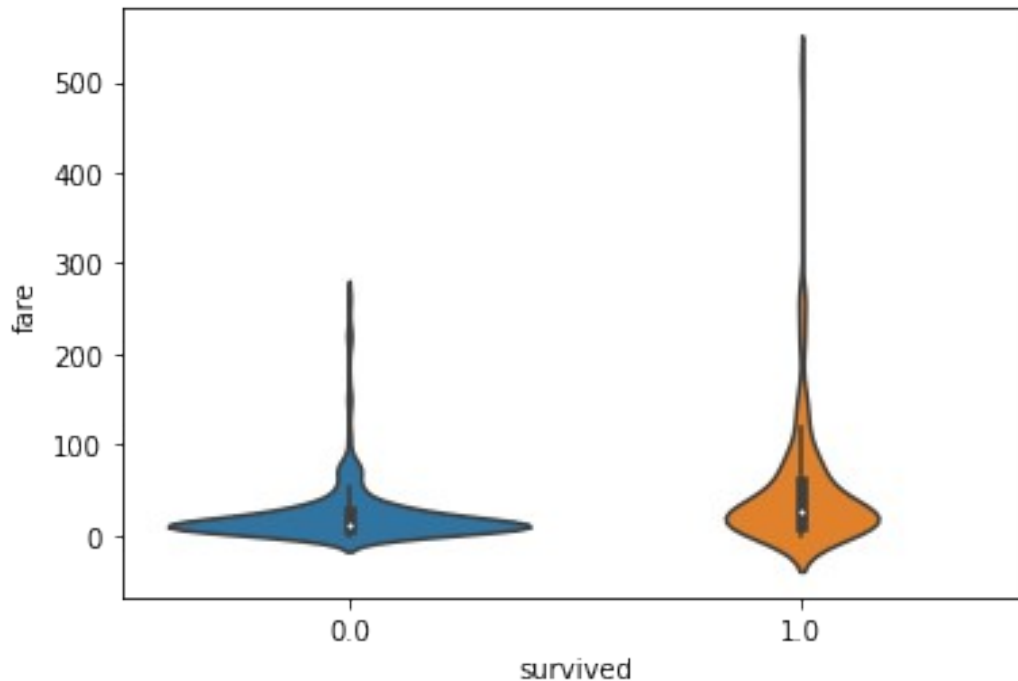
```
pns.boxplot(x="age",y="survived",data=a)
```

<matplotlib.axes._subplots.AxesSubplot at 0x7f2448ed0250>


```
pns.violinplot(x="survived",y="fare",data=a,size=7)
```

<matplotlib.axes._subplots.AxesSubplot at 0x7f244867c510>

```
pip install ptitprince

Looking in indexes: https://pypi.org/simple, https://us-
python.pkg.dev/colab-wheels/public/simple/
Collecting ptitprince
  Downloading ptitprince-0.2.5.tar.gz (9.2 kB)
Requirement already satisfied: seaborn>=0.10 in
/usr/local/lib/python3.7/dist-packages (from ptitprince) (0.11.2)
Requirement already satisfied: matplotlib in
/usr/local/lib/python3.7/dist-packages (from ptitprince) (3.2.2)
Requirement already satisfied: numpy>=1.13 in
/usr/local/lib/python3.7/dist-packages (from ptitprince) (1.21.6)
Requirement already satisfied: scipy in /usr/local/lib/python3.7/dist-
packages (from ptitprince) (1.7.3)
Collecting PyHamcrest>=1.9.0
  Downloading pyhamcrest-2.0.4-py3-none-any.whl (52 kB)
ent already satisfied: cython in /usr/local/lib/python3.7/dist-
packages (from ptitprince) (0.29.32)
Requirement already satisfied: pandas>=0.23 in
/usr/local/lib/python3.7/dist-packages (from seaborn>=0.10-
>ptitprince) (1.3.5)
Requirement already satisfied: kiwisolver>=1.0.1 in
/usr/local/lib/python3.7/dist-packages (from matplotlib->ptitprince)
(1.4.4)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!
=2.1.6,>=2.0.1 in /usr/local/lib/python3.7/dist-packages (from
matplotlib->ptitprince) (3.0.9)
Requirement already satisfied: cycler>=0.10 in
/usr/local/lib/python3.7/dist-packages (from matplotlib->ptitprince)
```

```
(0.11.0)
Requirement already satisfied: python-dateutil>=2.1 in
/usr/local/lib/python3.7/dist-packages (from matplotlib->ptitprince)
(2.8.2)
Requirement already satisfied: typing-extensions in
/usr/local/lib/python3.7/dist-packages (from kiwisolver>=1.0.1-
>matplotlib->ptitprince) (4.1.1)
Requirement already satisfied: pytz>=2017.3 in
/usr/local/lib/python3.7/dist-packages (from pandas>=0.23-
>seaborn>=0.10->ptitprince) (2022.2.1)
Requirement already satisfied: six>=1.5 in
/usr/local/lib/python3.7/dist-packages (from python-dateutil>=2.1-
>matplotlib->ptitprince) (1.15.0)
Building wheels for collected packages: ptitprince
  Building wheel for ptitprince (setup.py) ... e=ptitprince-0.2.5-py3-
none-any.whl size=8426
sha256=fb9be233cc92e6ec97e135f1eed22ca71f9a8a29872e0807a7cfe0254e23283
8
  Stored in directory:
/root/.cache/pip/wheels/58/a5/f2/55920bbc5d0e6fb74b2370e1e52e07c236ba7
b621236ea5a81
Successfully built ptitprince
Installing collected packages: PyHamcrest, ptitprince
Successfully installed PyHamcrest-2.0.4 ptitprince-0.2.5
```

```python
import ptitprince

plt.figure(figsize = (12,8))
ptitprince.RainCloud(data = a, x = 'survived', y = 'fare', orient =
'h')
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f2447e52150>
```
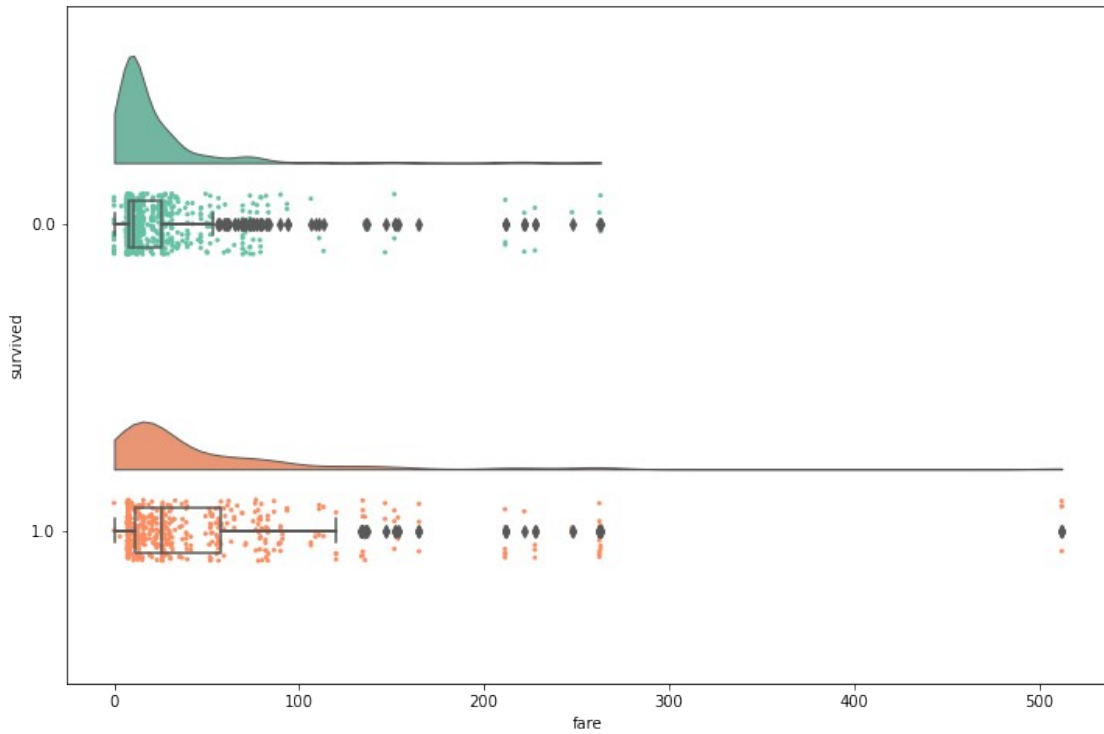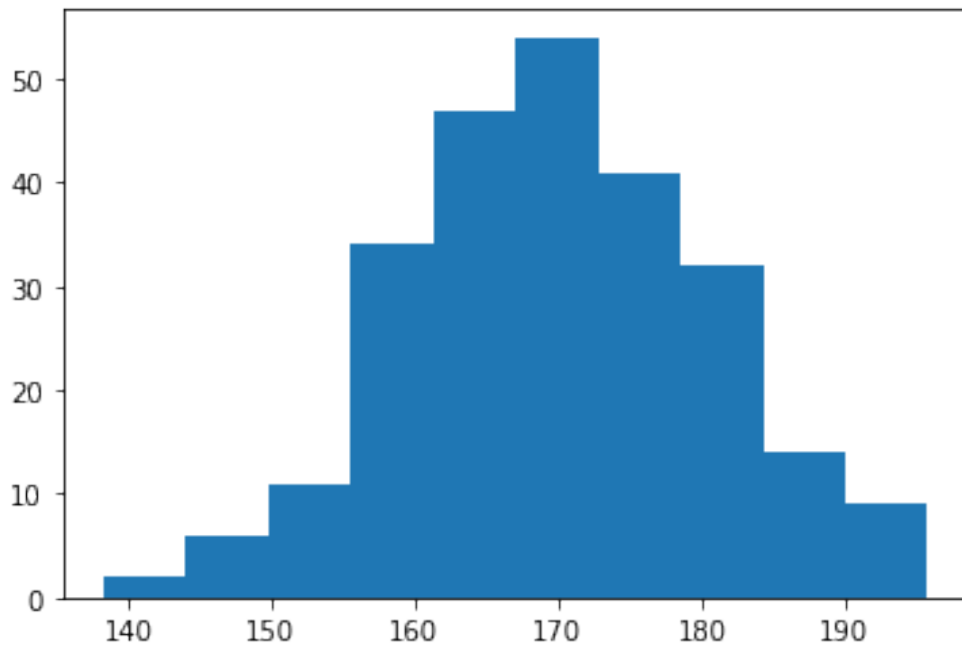
```
import numpy as np
x = np.random.normal(170, 10, 250)

plt.hist(x)
plt.show()
```



```
pns.FacetGrid(a,hue="sex",size=5).map(pns.kdeplot,"age").add_legend()
```

```
/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:337:
UserWarning: The `size` parameter has been renamed to `height`; please
update your code.
  warnings.warn(msg, UserWarning)
```

<seaborn.axisgrid.FacetGrid at 0x7f2447d16c90>