**import** **pandas** **as** pd

pd.read\_csv?

df = pd.DataFrame({'1stcolumn':[100,200], '2ndcolumn':[10,20]}) *# this just creates a DataFrame for the example!*

**print**('With the old column names:**\n**') *# the \n makes a new line, so it's easier to see*

**print**(df)

df.columns = ['FirstColumn', 'SecondColumn'] *# rename the columns!*

**print**('**\n\n**With the new column names:**\n**')

**print**(df)

**import** **matplotlib.pyplot** **as** plt

surveys = pd.read\_csv("data/surveys.csv")

my\_plot = surveys.plot("hindfoot\_length", "weight", kind="scatter")

plt.show() *# not necessary in Jupyter Notebooks*

%matplotlib inline

**import** **numpy** **as** np

sample\_data = np.random.normal(0, 0.1, 1000)

plt.hist(sample\_data)

fig, ax = plt.subplots() *# initiate an empty figure and axis matplotlib object*

ax.hist(sample\_data, 30)

fig, ax1 = plt.subplots() *# prepare a matplotlib figure*

ax1.hist(sample\_data, 30)

*# Add a plot of a Beta distribution*

a = 5

b = 10

beta\_draws = np.random.beta(a, b)

*# adapt the labels*

ax1.set\_ylabel('density')

ax1.set\_xlabel('value')

*# add additional axes to the figure*

ax2 = fig.add\_axes([0.125, 0.575, 0.3, 0.3])

*#ax2 = fig.add\_axes([left, bottom, right, top])*

ax2.hist(beta\_draws)

fig, ax1 = plt.subplots() *# prepare a matplotlib figure*

surveys.plot("hindfoot\_length", "weight", kind="scatter", ax=ax1)

*# Provide further adaptations with matplotlib:*

ax1.set\_xlabel("Hindfoot length")

ax1.tick\_params(labelsize=16, pad=8)

fig.suptitle('Scatter plot of weight versus hindfoot length', fontsize=15)

**import** **plotnine** **as** p9

myplot = (p9.ggplot(data=surveys,

mapping=p9.aes(x='hindfoot\_length', y='weight')) +

p9.geom\_point())

*# convert output plotnine to a matplotlib object*

my\_plt\_version = myplot.draw()

*# Provide further adaptations with matplotlib:*

p9\_ax = my\_plt\_version.axes[0] *# each subplot is an item in a list*

p9\_ax.set\_xlabel("Hindfoot length")

p9\_ax.tick\_params(labelsize=16, pad=8)

p9\_ax.set\_title('Scatter plot of weight versus hindfoot length', fontsize=15)

plt.show() *# not necessary in Jupyter Notebooks*

fig.savefig("my\_plot\_name.png")