```python
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
"""
Example 4.1 Introduction to the IRIS data set

Developed for Machine Learning for Mechanical Engineers at the University of
South Carolina

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"""

import IPython as IP
IP.get_ipython().run_line_magic('reset', '-sf')

import matplotlib.pyplot as plt
import sklearn as sk

cc = plt.rcParams['axes.prop_cycle'].by_key()['color']
plt.close('all')


#%% Load your data

# We will use the Iris data set.  This dataset was created by biologist Ronald
# Fisher in his 1936 paper "The use of multiple measurements in taxonomic
# problems" as an example of linear discriminant analysis

iris = sk.datasets.load_iris()

# for simplicity, extract some of the data sets
X = iris['data'] # this contains the length of the pedals and sepals
Y = iris['target'] # contains what type of flower it is
Y_names = iris['target_names'] # contains the name that aligns with the type of the
flower
feature_names = iris['feature_names'] # the names of the features

# plot the Sepal data
plt.figure(figsize=(6.5,3))
plt.subplot(121)
plt.grid(True)
plt.scatter(X[Y==0,0],X[Y==0,1],marker='o')
plt.scatter(X[Y==1,0],X[Y==1,1],marker='s')
plt.scatter(X[Y==2,0],X[Y==2,1],marker='d')
plt.xlabel(feature_names[0])
plt.ylabel(feature_names[1])


plt.subplot(122)
plt.grid(True)
plt.scatter(X[Y==0,2],X[Y==0,3],marker='o',label=Y_names[0])
plt.scatter(X[Y==1,2],X[Y==1,3],marker='s',label=Y_names[1])
plt.scatter(X[Y==2,2],X[Y==2,3],marker='d',label=Y_names[2])
plt.xlabel(feature_names[2])
plt.ylabel(feature_names[3])
plt.legend(framealpha=1)
plt.tight_layout()
```