Matplotlib Workbook

Intro to ML Module

Matplotlib Workbook

Welcome to the Matplotlib Workbook. Let's start with importing the NumPy and Matplotlib libraries.

```
import numpy as np
import matplotlib.pyplot as plt
```

We need the following line of code to make interactive plots when using Jupyter Notebook.

```
%matplotlib notebook
```

```
x = np.linspace(0, 2, 100)
```

```
# Note that even in the OO-style, we use `.pyplot.figure` to create the figure.
fig = figsize=(12,10)
ax = plt.subplot(111)  # Create a figure and an axes.
ax.plot(x, x, label='linear')  # Plot some data on the axes.
ax.plot(x, x**2, label='quadratic')  # Plot more data on the axes...
ax.plot(x, x**3, label='cubic')  # ... and some more.
ax.set_xlabel('x label')  # Add an x-label to the axes.
ax.set_ylabel('y label')  # Add a y-label to the axes.
ax.set_title("Simple Plot")  # Add a title to the axes.
ax.legend()  # Add a legend.
```

```
<IPython.core.display.Javascript object>
```

```
<IPython.core.display.HTML object>
```

```
<matplotlib.legend.Legend at 0x22b087a5580>
```

```
# evenly sampled time at 200ms intervals
t = np.arange(0., 5., 0.2)

fig = figsize=(10,8)
# red dashes, blue squares and green triangles

ax = plt.subplot(121)
ax.plot(t, t, 'r--', t, t**2, 'bs', t, t**3, 'g^')
ax.grid()
ax.legend()

ay = plt.subplot(122)
ay.plot(t, t, 'r--', label='t')
ay.plot(t, t**2, 'bs', label='$t^{2}$')
ay.plot(t, t**3, 'g^', label='$t^{3}$')
ay.grid()
ay.legend()
```

```
C:\Users\rokka\AppData\Local\Temp\ipykernel_19776\860996963.py:7: MatplotlibDeprecationWarnir

Auto-removal of overlapping axes is deprecated since 3.6 and will be removed two minor releas

No artists with labels found to put in legend.  Note that artists whose label start with an u

<matplotlib.legend.Legend at 0x22b087ea220>
```

```
data = {'a': np.arange(50),
        'c': np.random.randint(0, 50, 50),
        'd': np.random.randn(50)}
data['b'] = data['a'] + 10 * np.random.randn(50)
data['d'] = np.abs(data['d']) * 100

plt.scatter('a', 'b', c='c', s='d', data=data)
plt.xlabel('entry a')
plt.ylabel('entry b')
plt.show()
```

Congratulations! You have completed the Matplotlib Workbook. Copy this workbook with a new name and try changing the exercises to explore the functions further.