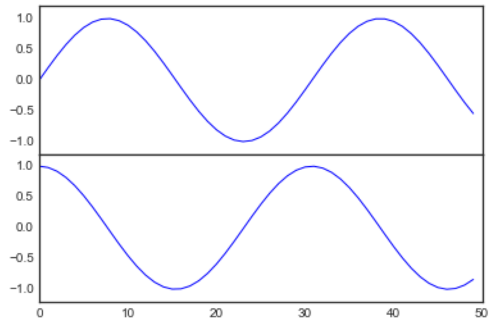

Figure 4-60. Vertically stacked axes example

We now have two axes (the top with no tick labels) that are just touching: the bottom of the upper panel (at position 0.5) matches the top of the lower panel (at position 0.1 + 0.4).

plt.subplot: Simple Grids of Subplots

Aligned columns or rows of subplots are a common enough need that Matplotlib has several convenience routines that make them easy to create. The lowest level of these is `plt.subplot()`, which creates a single subplot within a grid. As you can see, this command takes three integer arguments—the number of rows, the number of columns, and the index of the plot to be created in this scheme, which runs from the upper left to the bottom right (Figure 4-61):

```
In[4]: for i in range(1, 7):
           plt.subplot(2, 3, i)
           plt.text(0.5, 0.5, str((2, 3, i)),
                    fontsize=18, ha='center')
```

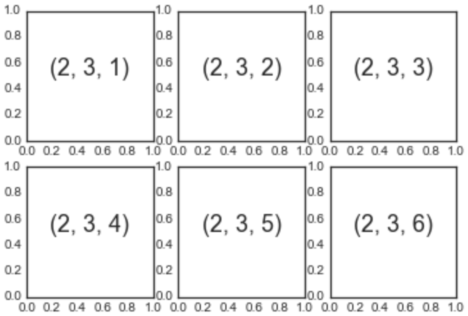

Figure 4-61. A plt.subplot() example

The command `plt.subplots_adjust` can be used to adjust the spacing between these plots. The following code (the result of which is shown in Figure 4-62) uses the equivalent object-oriented command, `fig.add_subplot()`:

```
In[5]: fig = plt.figure()
       fig.subplots_adjust(hspace=0.4, wspace=0.4)
       for i in range(1, 7):
           ax = fig.add_subplot(2, 3, i)
           ax.text(0.5, 0.5, str((2, 3, i)),
                  fontsize=18, ha='center')
```

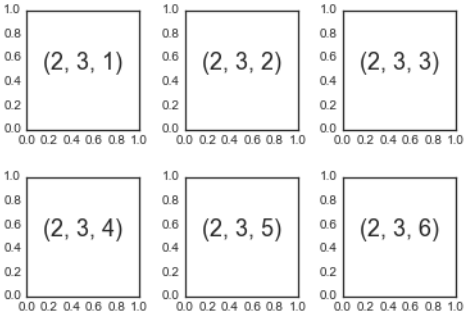

Figure 4-62. plt.subplot() with adjusted margins

We've used the `hspace` and `wspace` arguments of `plt.subplots_adjust`, which specify the spacing along the height and width of the figure, in units of the subplot size (in this case, the space is 40% of the subplot width and height).

plt.subplots: The Whole Grid in One Go

The approach just described can become quite tedious when you're creating a large grid of subplots, especially if you'd like to hide the x- and y-axis labels on the inner plots. For this purpose, `plt.subplots()` is the easier tool to use (note the `s` at the end of `subplots`). Rather than creating a single subplot, this function creates a full grid of subplots in a single line, returning them in a NumPy array. The arguments are the number of rows and number of columns, along with optional keywords `sharex` and `sharey`, which allow you to specify the relationships between different axes.

Here we'll create a 2×3 grid of subplots, where all axes in the same row share their y-axis scale, and all axes in the same column share their x-axis scale (Figure 4-63):

```
In[6]: fig, ax = plt.subplots(2, 3, sharex='col', sharey='row')
```