

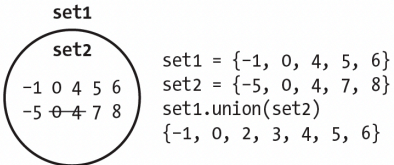
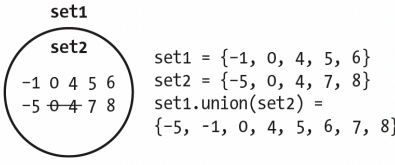
Python Tools for Scientists

An Introduction to Using Anaconda, JupyterLab, and Python's Scientific Libraries

by Lee Vaughan

Errata updated to print 2

Page	Error	Correction	Print corrected
xxviii	<p>Chapter 1, Installing and Launching Anaconda: How to install Anaconda on Windows, macOS, and Linux, followed by a tour of the Anaconda Navigator graphical user interface (GUI) and the alternative terminal-based command prompt.</p> <p>Chapter 2, Keeping Organized with Conda Environments: Introduces the concept . . . specific collection of conda packages. This will allow you to keep your projects organized and prevent any conflicts among different versions of Python and/or the various libraries.</p>	<p>Chapter 1, Installing and Launching Anaconda: How to install Anaconda on Windows, macOS, and Linux, followed by a tour of the Anaconda Navigator graphical user interface.</p> <p>Chapter 2, Keeping Organized with Conda Environments: Introduces the concept . . . specific collection of conda packages. Using both Anaconda Navigator and the alternative command line interface, you'll learn to keep your projects organized and prevent any conflicts among different versions of Python and/or the various libraries.</p>	Print 2
13		<p><i>Insertion of sentence:</i></p> <p>It works on Windows, macOS, and Linux. If you prefer to work in a terminal (recommended), proceed to Chapter 2.</p>	Print 2
19		<p><i>Insertion of note after summary:</i></p> <p>NOTE</p> <p><i>This book assumes you're using only Anaconda as your primary Python installation. If you've loaded other Python distributions (aside from what's bundled with the operating system), remove them to avoid problems.</i></p>	Print 2
24	In this case, you'll need to do so using the <i>Python package management system (pip)</i> .	In this case, you'll need to use the <i>Python package management system (pip)</i> .	Print 2
24	Most of these issues stem from that fact that conda, . . .	Most of these issues stem from the fact that conda, . . .	Print 2
52	You should now see the Qt Console tile on your Home tab (Figure 3-3).	You should now see the Qt Console tile on your Home tab (Figure 3-2).	Print 2
67	. . . you must install the lightweight <i>spyder_kernels</i> package you must install the lightweight <i>spyder-kernels</i> package . . .	Print 2
174	Incorrect URL	And to be a true Pythonista, you'll want to check out the Zen of Python (https://www.python.org/dev/peps/pep-0020/) . . .	Print 2
178	Mathematical expressions in Python use familiar rules of precedence (Table 7-2). Expressions bounded by parentheses are always performed first, and operations within the same precedence level are evaluated left to right.	Mathematical expressions in Python use familiar rules of precedence (Table 7-2). Expressions bounded by parentheses are always performed first, and operations within the same precedence level are evaluated left to right, except for exponential operators, which are right to left.	Print 2

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238	6. Which is the <i>wrong</i> way to add “shrew” to the <code>patroni</code> list?	8. Which is the <i>wrong</i> way to add “shrew” to the <code>patroni</code> list?	Print 2												
244	 <pre> set1 = {-1, 0, 4, 5, 6} set2 = {-5, 0, 4, 7, 8} set1.union(set2) {-1, 0, 2, 3, 4, 5, 6} </pre> <p>Figure 9-4: The <code>union()</code> set method</p>	 <pre> set1 = {-1, 0, 4, 5, 6} set2 = {-5, 0, 4, 7, 8} set1.union(set2) = {-5, -1, 0, 4, 5, 6, 7, 8} </pre> <p>Figure 9-4: The <code>union()</code> set method</p>	Print 2												
356	<pre>self.missiles -= 1</pre>	<pre>self.missiles -= 1</pre>	Print 2												
400		<p>Insertion of three new table rows:</p> <p>Table 15-1: Essential Python Scientific Libraries for Python</p> <table border="1" data-bbox="1041 743 1885 1243"> <thead> <tr> <th>Library</th> <th>Description</th> <th>Website</th> </tr> </thead> <tbody> <tr> <td>Polars</td> <td>Fast manipulation of very large datasets</td> <td>https://pypi.org/project/polars/</td> </tr> <tr> <td>Scrapy</td> <td>Extract structured data from websites at scale</td> <td>https://www.scrapy.org/</td> </tr> <tr> <td>Selenium</td> <td>Simulate user interactions when webscraping</td> <td>https://pypi.org/project/selenium/</td> </tr> </tbody> </table>	Library	Description	Website	Polars	Fast manipulation of very large datasets	https://pypi.org/project/polars/	Scrapy	Extract structured data from websites at scale	https://www.scrapy.org/	Selenium	Simulate user interactions when webscraping	https://pypi.org/project/selenium/	Print 2
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Selenium	Simulate user interactions when webscraping	https://pypi.org/project/selenium/													
404		<p>Insertion of clause:</p> <p>Mastering pandas is therefore essential, and you’ll get a good start in Chapter 20, which covers some of the basics, and in Chapter 21, which covers time sequences.</p>	Print 2												
450	Another drawback of using JSON is that it can be hacked if used with untrusted services or untrusted browsers.	Another drawback of using JSON is weaker “operational security.” It can be hacked if used with untrusted services or browsers.	Print 2												

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492	In computer science, an array is a data structure that contains a group of elements (values or variables) of the same size and data type (referred to as <i>dtypes</i> in NumPy).	In computer science, an array is a data structure that contains a group of elements (values or variables) of the same size and data type (referred to as <i>dtypes</i> in NumPy).	Print 2																		
508	Thus, <code>a_slice[:]</code> corresponds to <code>arr2d[3:]</code> .	Thus, <code>a_slice[:]</code> corresponds to <code>arr1d[3:]</code> .	Print 2																		
512	The next two numbers are treated as the shape tuple for these 2D arrays, representing its rows and columns, respectively.	The next two numbers are treated as the shape tuple for these 2D arrays, representing their rows and columns, respectively.	Print 2																		
514	So, to look at the first set of measurements, you would enter <code>arr4d[0, :, :]</code> , and for the last set of measurements, you could enter <code>arr4d[-1, :, :]</code> .	So, to look at the first set of measurements, you would enter <code>arr4d[0]</code> , and for the last set of measurements, you could enter <code>arr4d[-1]</code> .	Print 2																		
517	d. A single element (0D array) e. None of the above	c. A single element (0D array) d. None of the above	Print 2																		
524	This means that you can apply an operation on a entire array at once without selecting each individual element from it.	This means that you can apply an operation on an entire array at once without selecting each individual element from it.	Print 2																		
525	Here's the first three values in the list . . .	Here are the first three values in the list . . .	Print 2																		
534		<i>Apply bold formatting:</i> In [207]: <code>archive['a']</code>	Print 2																		
542	Standard graphical objects, like rectangles circles, and text, . . .	Standard graphical objects, like rectangles, circles, and text, . . .	Print 2																		
611	You should get the output in Figure 20-24.	You should get the output in Figure 20-25.	Print 2																		
543	Table 19-1: Useful pyplot Methods for Creating Plots <table border="1" data-bbox="172 1019 846 1344"> <thead> <tr> <th>Method</th> <th>Description</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>Polar</td> <td>Make a polar plot</td> <td><code>plt.polar(theta, r, 'bo')</code> # Blue dots</td> </tr> <tr> <td>Scatter</td> <td>Make a scatterplot</td> <td><code>plt.scatter(x, y, marker='o')</code></td> </tr> </tbody> </table>	Method	Description	Example	Polar	Make a polar plot	<code>plt.polar(theta, r, 'bo')</code> # Blue dots	Scatter	Make a scatterplot	<code>plt.scatter(x, y, marker='o')</code>	Table 19-1: Useful pyplot Methods for Creating Plots <table border="1" data-bbox="1041 1019 1715 1344"> <thead> <tr> <th>Method</th> <th>Description</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>polar</td> <td>Make a polar plot</td> <td><code>plt.polar(theta, r, 'bo')</code> # Blue dots</td> </tr> <tr> <td>scatter</td> <td>Make a scatterplot</td> <td><code>plt.scatter(x, y, marker='o')</code></td> </tr> </tbody> </table>	Method	Description	Example	polar	Make a polar plot	<code>plt.polar(theta, r, 'bo')</code> # Blue dots	scatter	Make a scatterplot	<code>plt.scatter(x, y, marker='o')</code>	Print 2
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570	<pre>In [49]: import numpy as np ...: import matplotlib.pyplot as plt ...: %matplotlib qt ...: ...: x = 0 ...: for i in range(30): ...: x = x + 1 ...: y = x**2 ...: plt.scatter(x, y) ...: plt.title("Quadratic Function") ...: plt.xlabel("x") ...: plt.ylabel("x-squared") ...: plt.pause(0.1)</pre>	<pre>In [49]: import numpy as np ...: import matplotlib.pyplot as plt ...: %matplotlib qt ...: ...: plt.title("Quadratic Function") ...: plt.xlabel("x") ...: plt.ylabel("x-squared") ...: x = 0 ...: for i in range(30): ...: x = x + 1 ...: y = x**2 ...: plt.scatter(x, y) ...: plt.pause(0.1)</pre>	Print 2												
623		<p><i>Insertion of sentence before last paragraph of summary:</i></p> <p>Seaborn objects offer a more concise way to create seaborn plots. You can read more about them at https://towardsdatascience.com/introducing-seaborn-objects-aa40406acf3d/.</p>	Print 2												
629	<p>Table 21-2: Selected Datetime Format Specifications</p> <table border="1" data-bbox="172 870 846 1049"> <thead> <tr> <th>Directive</th> <th>Description</th> <th>Examples</th> </tr> </thead> <tbody> <tr> <td>%m</td> <td>Two-digit month</td> <td>01, 02, ..., 31</td> </tr> </tbody> </table>	Directive	Description	Examples	%m	Two-digit month	01, 02, ..., 31	<p>Table 21-2: Selected Datetime Format Specifications</p> <table border="1" data-bbox="1039 870 1713 1049"> <thead> <tr> <th>Directive</th> <th>Description</th> <th>Examples</th> </tr> </thead> <tbody> <tr> <td>%m</td> <td>Two-digit month</td> <td>01, 02, ..., 12</td> </tr> </tbody> </table>	Directive	Description	Examples	%m	Two-digit month	01, 02, ..., 12	Print 2
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631	For example, S uppose that your lab assistant . . .	For example, s uppose that your lab assistant . . .	Print 2												
654	Because the oscillations occur weekly, downsampling from daily to weekly should merge the low and high reports and smooth the curve.	Downsampling from daily to weekly should merge the low and high reports and smooth the curve.	Print 2												