

# Diving In

Having grown up the son of a librarian and an English major, I have always been fascinated by languages. Not programming languages. Well yes, programming languages, but also natural languages. Take English. English is a schizophrenic language that borrows words from German, French, Spanish, and Latin (to name a few). Actually, “borrows” is the wrong word; “pillages” is more like it. Or perhaps “assimilates” — like the Borg. Yes, I like that.

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We are the Borg. Your linguistic and etymological distinctiveness will be added to our own. Resistance is futile.
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In this chapter, you’re going to learn about plural nouns. Also, functions that return other functions, advanced regular expressions, and generators. But first, let’s talk about how to make plural nouns. (If you haven’t read [the chapter on regular expressions](#), now would be a good time. This chapter assumes you understand the basics of regular expressions, and it quickly descends into more advanced uses.)

If you grew up in an English-speaking country or learned English in a formal school setting, you’re probably familiar with the basic rules:

- If a word ends in S, X, or Z, add ES. *Bass* becomes *basses*, *fax* becomes *faxes*, and *waltz* becomes *waltzes*.
- If a word ends in a noisy H, add ES; if it ends in a silent H, just add S. What’s a noisy H? One that gets combined with other letters to make a sound that you can hear. So *coach* becomes *coaches* and *rash* becomes *rashes*, because you can hear the CH and SH sounds when you say them. But *cheetah* becomes *cheetahs*, because the H is silent.
- If a word ends in Y that sounds like I, change the Y to IES; if the Y is combined with a vowel to sound like something else, just add S. So *vacancy* becomes *vacancies*, but *day* becomes *days*.

- If all else fails, just add S and hope for the best.

(I know, there are a lot of exceptions. *Man* becomes *men* and *woman* becomes *women*, but *human* becomes *humans*. *Mouse* becomes *mice* and *louse* becomes *lice*, but *house* becomes *houses*. *Knife* becomes *knives* and *wife* becomes *wives*, but *lowlife* becomes *lowlives*. And don't even get me started on words that are their own plural, like *sheep*, *deer*, and *haiku*.)

Other languages, of course, are completely different.

Let's design a Python library that automatically pluralizes English nouns. We'll start with just these four rules, but keep in mind that you'll inevitably need to add more.