

Step 2: Learn Python Basics

Now you have downloaded and set up the tools that you will need to code in Python! You have everything that you need to start writing scripts that will save you time and make your life easier.

Now that we have the tools, it's time to start learning how to code. The first step towards learning how to code is to learn the basic vocab and rules. I am not going to reinvent the wheel for this; codecademy has an excellent course on learning Python basics. Their course material is well written, their coding interface is intuitive, and their feedback is instant.

But before I send you over to codecademy, I want you to do a mental exercise with me.

By working through this mental exercise, we'll build a fundamental intuition for what it means to code.

Imagine that...

You sent a survey out to your users; you collected the data and downloaded that data into an Excel file on your computer. Before you analyze and interpret the data, you need to clean it up a bit. You need to delete some columns, recode some variables, change some column headers etc. You aren't going to make these changes yourself, you are going to give directions to someone else to make the changes (you have more important things to do!). The tricky part is that the person making these changes has never opened a computer before.

In your head, or on a piece of paper, list out a set of directions for this person to:

1. Open the Excel file.
2. Change the column header 'responseld' to 'user_id'.
3. Delete the column 'ipAddress'.
4. Recode the column labeled 'satisfaction' from 0,1,2,3,4 to 'disagree', 'somewhat_disagree', 'not_sure', 'somewhat_agree', 'agree'.
5. Save the edited Excel file.

As you are formulating your directions, think about the following:

- How do they find the Excel file? Where is it located? What program do they use to locate it? How do they know they have the right file?
- Once they've opened the Excel file, how do they locate the correct column?
- Once they've located a column, what do they need to do to delete it?
- If they are recoding a column, should they replace the old values or create new column? Do they have to go through each value by hand or can they automate this somehow?
- What buttons do they click to save a file? Where should they save it? How do they indicate where it should be saved?

All done?

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You just wrote code! Explicit directions that effectively explain how to do something (to someone that has never used a computer before) is fundamentally the same thing as code. The only difference is that you wrote your code in a language that humans understand so that a human could execute your code. Here you will learn how to write your directions in a language that a computer understands (Python!) so that a computer can execute your code!

Let's learn how to write directions in Python!

Now it is time to learn the basic vocabulary and grammar that you will need to code in Python. Now, I am going to send you over to codecademy to learn the basics. I learned my python basics at codecademy; they do a wonderful job! Learn Python 2 @ codecademy is free! We will be coding in Python 3 (the newer version) once you return to this tutorial, but Python 2 and 3 are so similar that paying for the Python 3 version isn't really worth it.

Once you have mastered the basic vocabulary and grammar, you'll come back here to start working with your own data in JupyterLab. **I would recommend completing lessons 1-10; you do not need to complete lessons 11-12.** Lessons 11 and 12 are less relevant for the kinds of code we will be writing.

To get started...

[Click here](#) to head over to codecademy to get started! Good luck, we'll see you back here soon to start working on your own data!

When you're done...

[Click here](#) to see the step 3 instructions online. You can also open up the instructions on your computer by navigating to the `step3_python_in_jupyter_notebooks` folder and opening the `offline_README.pdf`