

Exercise 1: A Good First Program



Warning

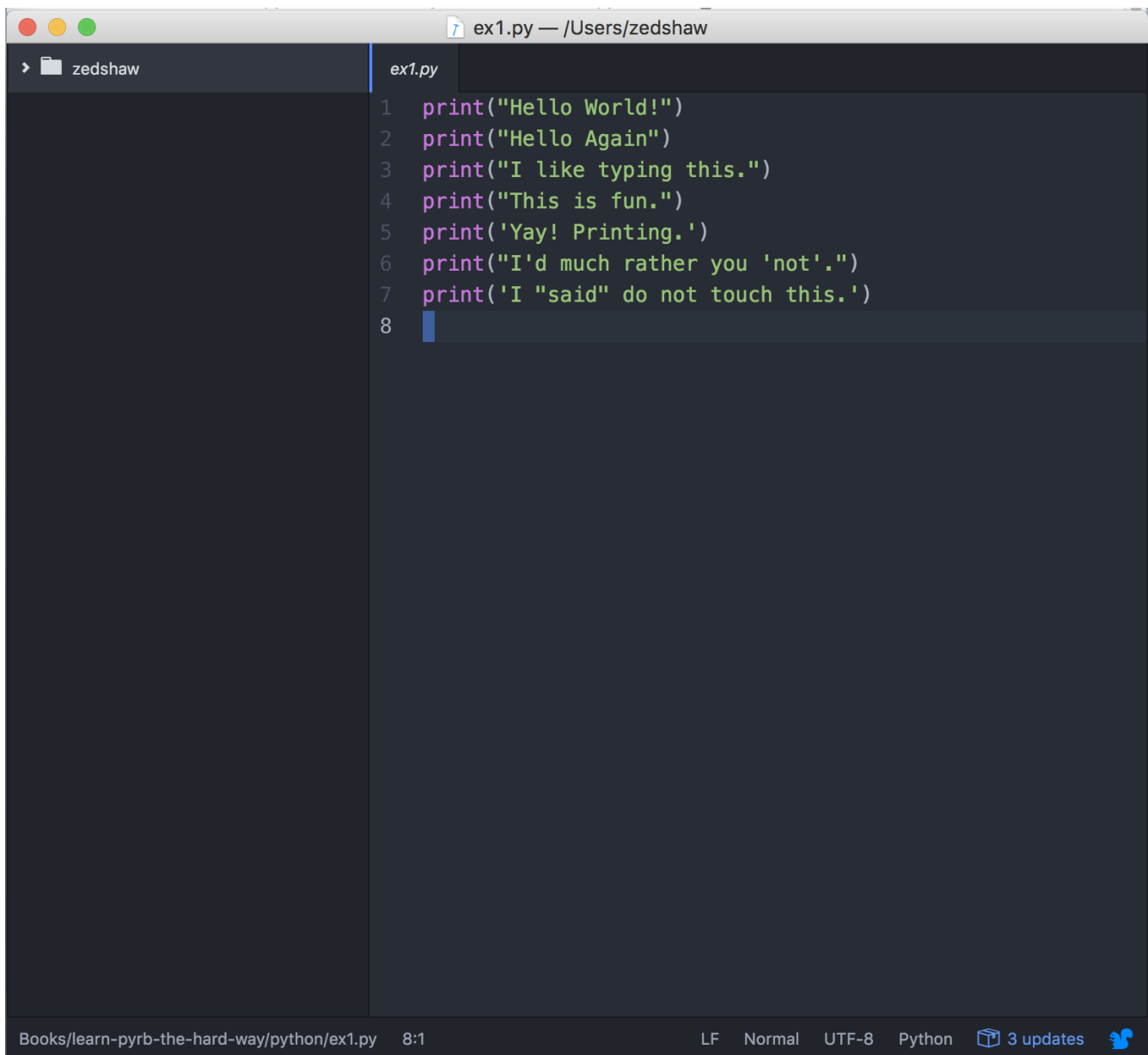
If you skipped Exercise 0, then you are not doing this book right. Are you trying to use IDLE or an IDE? I said not to use one in Exercise 0, so you should not use one. If you skipped Exercise 0 please go back to it and read it.

You should have spent a good amount of time in Exercise 0 learning how to install a text editor, run the text editor, run the terminal, and work with both of them. If you haven't done that, then do not go on. You will not have a good time. This is the only time I'll start an exercise with a warning that you should not skip or get ahead of yourself.

Type the following text into a single file named `ex1.py` . Python works best with files ending in `.py` .

```
1      print("Hello World!")
2      print("Hello Again")
3      print("I like typing this.")
4      print("This is fun.")
5      print('Yay! Printing.')
6      print("I'd much rather you 'not'.")
7      print('I "said" do not touch this.')
```

Your `Atom` text editor should look something like this on all platforms:

A screenshot of a code editor window. The title bar at the top says "ex1.py — /Users/zedshaw". The editor has a dark theme. On the left, there's a sidebar with a folder icon and the name "zedshaw". The main area shows a Python script with 8 lines of code, each preceded by a line number from 1 to 8. The code is: 1 print("Hello World!") 2 print("Hello Again") 3 print("I like typing this.") 4 print("This is fun.") 5 print('Yay! Printing.') 6 print("I'd much rather you 'not'.") 7 print('I "said" do not touch this.') 8. The bottom status bar shows "Books/learn-pyrb-the-hard-way/python/ex1.py 8:1", "LF Normal UTF-8 Python", and "3 updates" with a Twitter icon.

Don't worry if your editor doesn't look exactly the same; it should be close though. You may have a slightly different window header, maybe slightly different colors, and the left side of your `Atom` window won't say "zedshaw" but will instead show the directory you used for saving your files. All of those differences are fine.

When you create this file, keep in mind these points:

- 1 I did not type the line numbers on the left. Those are printed in the book so I can talk about specific lines by saying, "See line 5..." You do not type line numbers into Python scripts.

- 2 I have the `print` at the beginning of the line, and it looks exactly the same as what I have in `ex1.py`. Exactly means exactly, not kind of sort of the same. Every single character has to match for it to work. Color doesn't matter, only the characters you type.

In OSX Terminal or (maybe) Linux *run* the file by typing:

```
python3.6 ex1.py
```

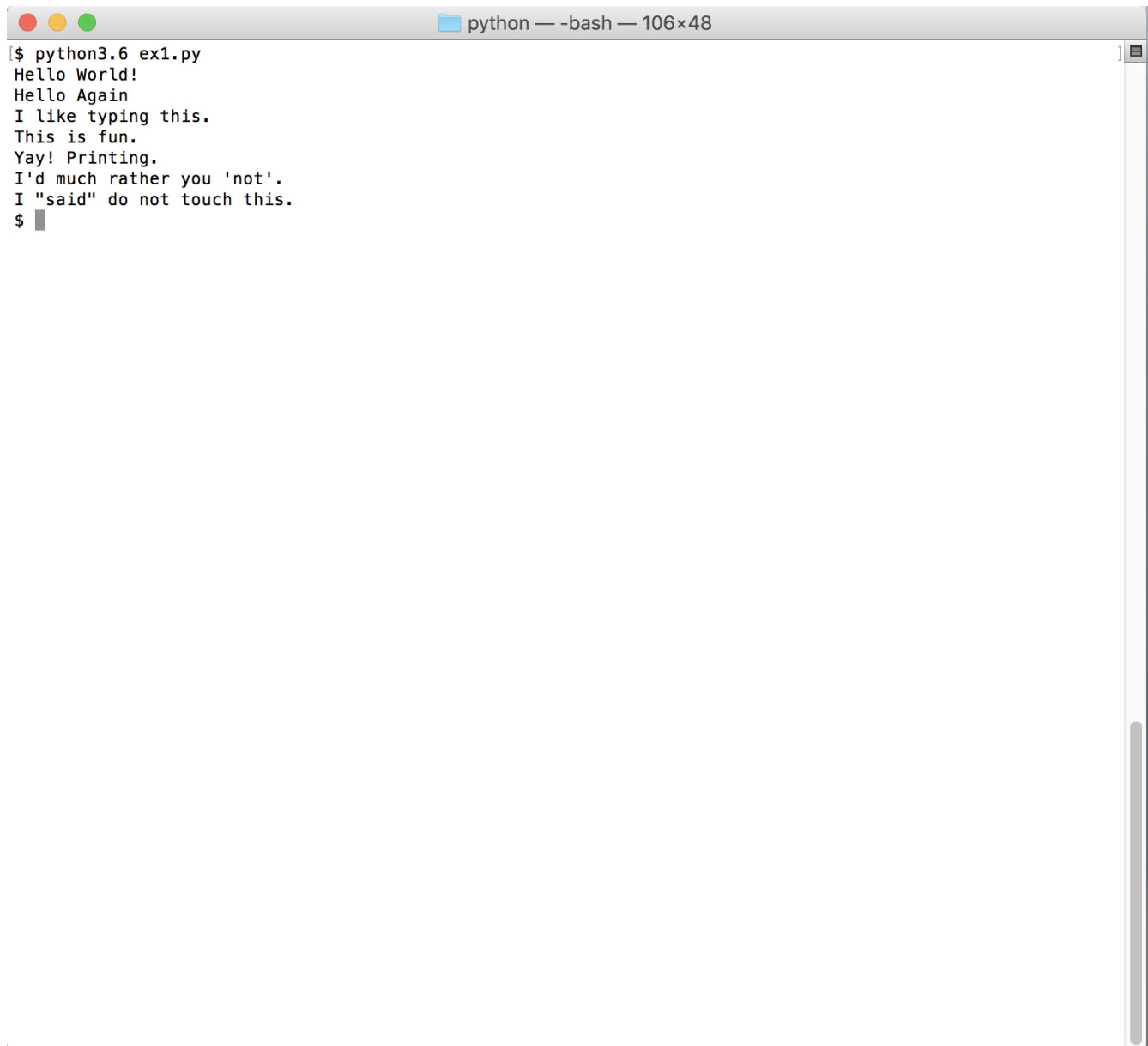
On Windows, remember you *always* type `python` instead of `python3.6` like this:

```
python ex1.py
```

If you did it right then you should see the same output as I in the *What You Should See* section of this exercise. If not, you have done something wrong. No, the computer is not wrong.

What You Should See

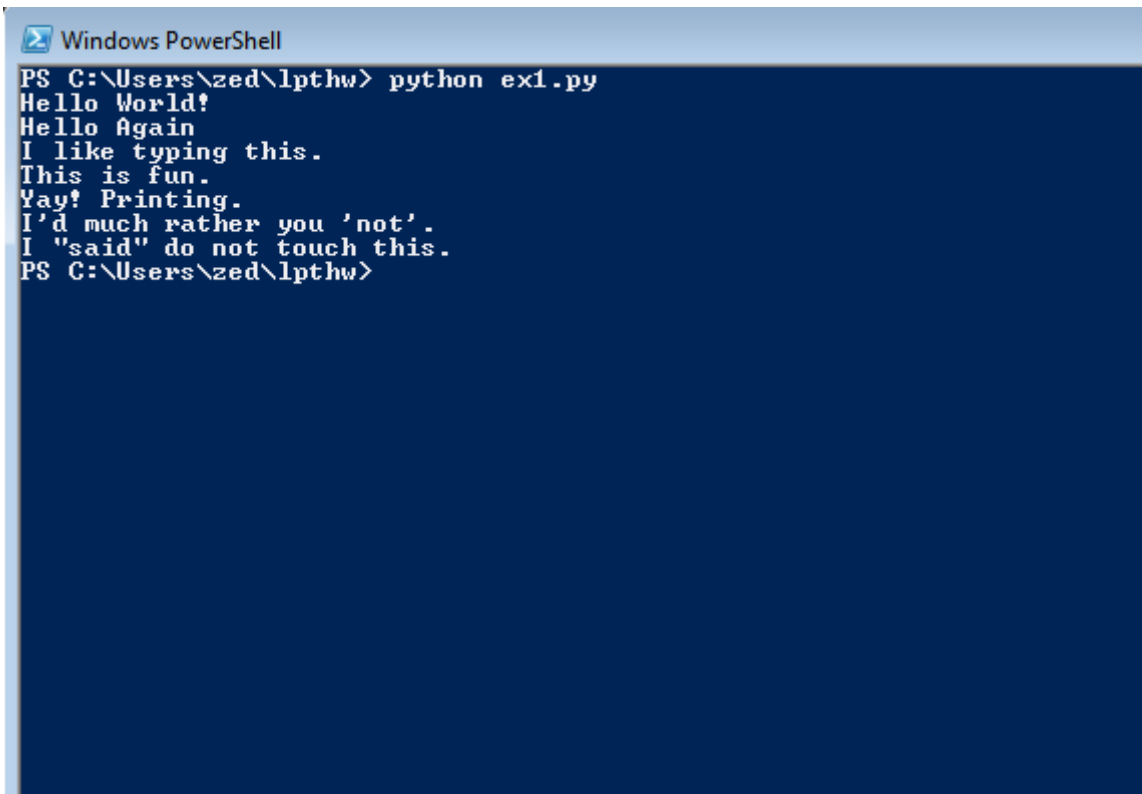
On macOS in the Terminal you should see this:

A screenshot of a terminal window with a grey title bar. The title bar contains three colored window control buttons (red, yellow, green) on the left and the text 'python — -bash — 106x48' on the right. The terminal area is white and contains the following text:

```
[$ python3.6 ex1.py  
Hello World!  
Hello Again  
I like typing this.  
This is fun.  
Yay! Printing.  
I'd much rather you 'not'.  
I "said" do not touch this.  
$
```

A vertical scrollbar is visible on the right side of the terminal window.

On Windows in PowerShell you should see this:

A screenshot of a Windows PowerShell terminal window. The title bar says "Windows PowerShell". The prompt is "PS C:\Users\zed\lpthw>". The user has entered the command "python ex1.py". The output of the script is displayed line by line: "Hello World!", "Hello Again", "I like typing this.", "This is fun.", "Yay! Printing.", "I'd much rather you 'not'.", and "I 'said' do not touch this.". The prompt "PS C:\Users\zed\lpthw>" is shown again at the bottom.

```
Windows PowerShell
PS C:\Users\zed\lpthw> python ex1.py
Hello World!
Hello Again
I like typing this.
This is fun.
Yay! Printing.
I'd much rather you 'not'.
I "said" do not touch this.
PS C:\Users\zed\lpthw>
```

You may see different names, before the `python3.6 ex1.py` command, but the important part is that you type the command and see the output is the same as mine.

If you have an error it will look like this:

```
$ python3.6 python/ex1.py
File "python/ex1.py", line 3
    print("I like typing this.
          ^
SyntaxError: EOL while scanning string literal
```

It's important that you can read these error messages because you will be making many of these mistakes. Even I make many of these mistakes. Let's look at this line by line.

- 1 We ran our command in the Terminal to run the `ex1.py` script.

- 2 Python tells us that the file `ex1.py` has an error on line 3 of `ex1.py`.
- 3 It prints this line of code for us to see it.
- 4 Then it puts a `^` (caret) character to point at where the problem is. Notice the missing `"` (double-quote) character?
- 5 Finally, it prints out a "SyntaxError" and tells us something about what might be the error. Usually these are very cryptic, but if you copy that text into a search engine, you will find someone else who's had that error, and you can probably figure out how to fix it.

Study Drills

The Study Drills contain things you should *try* to do. If you can't, skip it and come back later.

For this exercise, try these things:

- 1 Make your script print another line.
- 2 Make your script print only one of the lines.
- 3 Put a `#` (octothorpe) character at the beginning of a line. What did it do? Try to find out what this character does.

From now on, I won't explain how each exercise works unless an exercise is different.



Note

An "octothorpe" is also called a "pound", "hash", "mesh", or any number of names. Pick the one that makes you chill out.

Common Student Questions

These are *actual* questions that real students have asked when doing this exercise.

Can I use IDLE?

No, you should use Terminal on macOS and PowerShell on Windows, just like I have here. If you don't know how to use those, then you can go read the "Command Line Crash Course" in Appendix A.

How do you get colors in your editor?

Save your file first as a `.py` file, such as `ex1.py` . Then you'll have color when you type.

I get `SyntaxError: invalid syntax` when I run `ex1.py`.

You are probably trying to run Python, then trying to type Python again. Close your Terminal, start it again, and right away type only `python3.6 ex1.py` .

I get `can't open file 'ex1.py': [Errno 2] No such file or directory` .

You need to be in the same directory as the file you created. Make sure you use the `cd` command to go there first. For example, if you saved

your file in `lpthw/ex1.py` , then you would do `cd lpthw/` before trying to run `python3.6 ex1.py` . If you don't know what any of that means, then go through *Appendix A*.

My file doesn't run; I just get the prompt back with no output.

You most likely took the code in my `ex1.py` file literally and thought that `print("Hello World!")` meant to type only `"Hello World!"` into the file, without the `print` . Your file has to be *exactly* like mine.

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