3.4. Syntax errors

Python can only execute a program if the program is syntactically correct; otherwise, the process fails and returns an error message. **Syntax** refers to the structure of a program and the rules about that structure. For example, in English, a sentence must begin with a capital letter and end with a period. this sentence contains a **syntax error**. So does this one

For most readers, a few syntax errors are not a significant problem, which is why we can read the poetry of e. e. cummings without problems. Python is not so forgiving. If there is a single syntax error anywhere in your program, Python will display an error message and quit. You will not be able to complete the execution of your program. During the first few weeks of your programming career, you will probably spend a lot of time tracking down syntax errors. However, as you gain experience, you will make fewer errors and you will also be able to find your errors faster.

Can you spot the syntax error in the code below?

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```
1 print("Hello World!"
2
```

Activity: 1 -- ActiveCode (ac4_4_1)

Error

```
SyntaxError: EOF in multi-line statement on line 3

^
```

Description

This message indicates that Python can't figure out the syntax of a particular statement. Some examples are assigning to a literal, or a function call

To Fix

Check your assignment statments and make sure that the left hand side of the assignment is a variable, not a literal or a function.

Check your understanding

debug-4-1: Which of the following is a syntax error?

- A. Attempting to divide by 0.
- B. Forgetting a colon at the end of a statement where one is required.
- C. Forgetting to divide by 100 when printing a percentage amount.

Check me Compare me

✔ This is a problem with the formal structure of the program. Python knows where colons are required and can detect when one is missing simply by looking at the code without running it.

Activity: 2 -- Multiple Choice (question4_4_1)

debug-4-2: Who or what typically finds syntax errors?

- A. The programmer.
- B. The compiler / interpreter.
- C. The computer.
- D. The teacher / instructor.

Check me Compare me

✔ The compiler and / or interpreter is a computer program that determines if your program is written in a way that can be translated into machine language for execution.

Activity: 3 -- Multiple Choice (question4_4_2)

You have attempted 4 of 3 activities on this page

✔ Completed. Well Done!

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