

## Errors in Python (Teacher Version)

### Corresponding Material

Functions and Exceptions, Lesson 5: Exceptions

### Discussion

We use try...except to catch errors in Python and handle them based on their type. We have looked at the *ZeroDivisionError* and *ValueError* so far but more error types exist, some which we have seen at other times in the course and some we have not yet encountered. In this activity, we'll do some research on these additional error types.

### Exercise

A list of error types are shown below. Fill in the information about when this error occurs and some example lines of code that would throw this error. If you're not sure, do some trial and error in your Sandbox! (A good starting place could be this article:

<https://www.tutorialsteacher.com/python/error-types-in-python>)

	<b>Name of Error</b>	<b>When does this error occur?</b>	<b>Example</b>
1	SyntaxError/ ParseError	<ul style="list-style-type: none"> <li>- Occurs when a certain statement is not written correctly</li> <li>- Occurs before program runs!</li> </ul>	<pre>age = int(input("Enter age: ")) age_next_year = age + 1 print("Next year I will be:") print(age_next_year)</pre>
2	UnboundLocalError	<p><b>Occurs because when you make an assignment to a variable in a scope, that variable becomes local to that scope and shadows any similarly named variable in the outer scope</b></p>	<pre>age = 10 def age_next_year():     age = age + 1 age_next_year() print(age)</pre>
2	TypeError	<p><b>Occurs when an operation or function is applied to an object of an inappropriate type</b></p>	<pre>name = 'Molly' age = 14 print("My name is " + name + " and I am " + age + " years old.")</pre>



3	ValueError	<b>Occurs when a function's argument is of an inappropriate type</b>	<pre>name = 'Molly' age = 'fourteen'  print("My name is " + name + " and I am " + int(age) + " years old.")</pre>
4	NameError	<b>Occurs when an object could not be found</b>	<pre>name = 'Molly'  print("My name is " + name + " and I am " + age + " years old.")</pre>
5	ZeroDivisionError	<b>Occurs when the second operator in the division is zero</b>	<pre>value_one = 5 value_two = value_one - 5  total = value_one/value_two  print(total)</pre>
6	IndexError (Fill this one in after you complete lesson 7.1)	<b>Occurs when trying to access an item at an invalid index</b>	<pre>my_string = 'hi!' print(my_string[3])  OR  my_string = 'hi!' print(my_string[len(my_string)])</pre>

## Conclusion Questions

1. Why do you think more than one error type exists?

**When an error occurs, it is very helpful to get some information about what went wrong so we can fix our program accordingly. The different error types allow us to narrow down the bugs that exist.**

2. Are there any error types that don't exist that you think should?

***Answers will vary***