

Introduction to Python Programming

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Exercise Two: Assignment Statements

The simplest form of an assignment statement assigns a value to a named variable. For instance, in the example below the value of “2” is assigned to a variable named numberOne and the value of “3” is assigned to a variable named numberTwo.

```
numberOne = 2
numberTwo = 3
```

Now the variables numberOne and numberTwo can be used in further assignment statements.

```
numberTwo = numberOne + numberTwo
```

The variable numberTwo now contains the value of 5. Note that in the assignment statement there is always ONE variable on the left and some form of mathematical or computable expression on the right. In python the variable on the left assumes the *type* of the expression on the right. This could be a string, floating point number, integer, or boolean.

For example

```
>>> flag = "Boy"
>>> print flag
Boy
>>> flag = True
>>> print flag
True
>>> flag = 3.14159
>>> print flag
3.14159
>>> flag = 2
>>> print flag
2
```

You can combine numeric types in assignment expressions, but you cannot mix numeric types with other types. For example:

```
>>> flag = 2 + 3.14159
>>> print flag
5.14159
>>> flag = 2 + "Boy"
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
TypeError: unsupported operand type(s) for +: 'int' and 'str'
```

There is a strange thing that happens when you combine numeric types with boolean (true/false) types.

```
>>> flag = 2 + True
>>> print flag
3
>>> flag = flag + False
>>> print flag
3
```

In the above example the boolean True is converted to "1" and the boolean False is converted to "0" before they are used in the expression and the resulting expression calculated and displayed. Unlike many languages, Python makes some assumptions about what the programmer wants to do. This can make coding faster and easier, but because of this behavior the novice programmer has to be particularly careful.

Finally, operations like...

$$A = A + B$$

Are so common in computer programming that Python allow statements like

$$A += B$$

to be used instead of $A = A+B$. The other numeric operators (-, *, /, **) can be used in a similar manner.