CSP1150/CSP5110: Programming Principles
Reading 1.3: Multiple Assignment

A nifty feature of Python (and some, but not most, other languages) is the ability to *assign multiple values to multiple variables in a single statement*, e.g.

Python
```
x, y = 1, 2
```

This will assign 1 to the variable x, and 2 to the variable y.

At this stage it may be hard to see why this is particularly useful, but here's a simple example of something that it facilitates: *swapping the values of two variables*.

In most languages, to swap the values of two variables you would need to use a third variable and it would take a few steps...

JavaScript
```
var a = 1; // define a and set it to 1
var b = 2; // define b and set it to 2

var temp = a; // define temp and set it to a (1)
a = b; // set a to b (2)
b = temp; // set b to temp (1)
```

Using a multiple assignment, this can be done more efficiently in Python:

Python
```
a = 1 # define a and set it to 1
b = 2 # define b and set it to 2

a, b = b, a # set a to b and b to a
```

There are of course other uses for this feature, including the ability for functions to return multiple values which you can store into multiple variables.