5.1: UPDATING VARIABLES

Contributed by Chuck Severance
Clinical Associate Professor (School of Information) at University of Michigan

A common pattern in assignment statements is an assignment statement that updates a variable, where the new value of the variable depends on the old.

```
x = x + 1
```

This means "get the current value of `x`, add 1, and then update `x` with the new value."

If you try to update a variable that doesn't exist, you get an error, because Python evaluates the right side before it assigns a value to `x`:

```
>>> x = x + 1
NameError: name 'x' is not defined
```

Before you can update a variable, you have to *initialize* it, usually with a simple assignment:

```
>>> x = 0
>>> x = x + 1
```

Updating a variable by adding 1 is called an *increment*; subtracting 1 is called a *decrement*.