Intro to Variables

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Variable Initialization

- Variable initialization refers to the act of declaring a variable (giving it a name) and assigning it a value. A variable's name is declared on the left side of the = and its value on the right side. This can be done in a single line of code, like the below. Note that a variable's name may not contain spaces or special characters, with the exception of the underscore _.

```
my_variable = 1 #my_variable is set to 1
```

- Once initialized, referring to *my_variable* in subsequent lines of code will actually refer to *my_variable*'s value, which has been set to 1. However, as their name implies, variables can have changing values. For example, we might do something like the below:

```
my_variable = 1 #my_variable is set to 1
print(my_variable) #Prints out the value of my_variable, which is 1
```

Updating Variables

- Here we change the value of *my_variable* to be (1 * 2) = 2

```
my_variable = 1 * 2
print(my_variable) #Prints out the value of my_variable, which is now 2
```

- We can also reference a variable's current value in it's own re-assignment! This can be done if the variable has already been assigned a value previously. For example:

```
my_variable = my_variable * 3
print(my_variable) #Prints out the value of my_variable, which is now 6
```

  - What the above line is doing is setting the value of *my_variable* equal to the current value of *my_variable*, which we set to 2, multiplied by 3. This ends up being: *my_variable* = 2 * 3 = 6