More on the WHILE Statement

Summing Numbers

If we wanted to add the numbers from 1 to 5, and store that value in a variable, we know how to count the numbers 1 to 5 already, we do it using a variable X that starts as one (1) and gets incremented each time the program executes that loop:

Sample WHILE Statement

```
# PROGRAM Print1To5
X = 1
while (X < 6):
        print(X)
        X = X + 1
# EndWhile;
# END.
```

To add the numbers together, we need a new variable, let's call it `SumTotal`, and we will set its starting value (also called the "*initial value*") to zero (0) and let's add the variable `X` onto the variable `SumTotal` during each execution of the loop. So the first time in the loop `X` is 1 and `SumTotal` is 1 (1 + 0 = 1), the next time around the loop `X` is 2 and `SumTotal` is 3 (2 + 1 = 3), the next time around the loop `X` is 3 and `SumTotal` is 6 (3 + 3 = 6), the next time around the loop `X` is 4 and `SumTotal` is 10 (4 + 6 = 10), the next time around the loop `X` is 5 and `SumTotal` is 15 (5 + 10 = 15), the loop then stops executing.

X	1	2	3	4	5
SumTotal	1	3	6	10	15

So the code below shows how we could write this program, there are just three extra lines: the first new line sets the initial value to zero (0), the second new line is inside the loop and it adds the current value of `X` to the current value of `SumTotal`, and the final new line prints out the value of `SumTotal`.

Summing Numbers Using the WHILE Statement

```
# PROGRAM Sum1To5:
X = 1
SumTotal = 0
while (X < 6):
        SumTotal = SumTotal + X
        X = X + 1
# EndWhile;
print(SumTotal)
# END.
```

So the output we will get from this program is:

```
15
```

And this is just counting to five (5), but we can use this to do any sum.