

Writing Python Scripts - Functions

Defining a Function:

To write a function in Python you must follow quite a strict template. Firstly you must define the name of the function and state that you are starting to define a function like so:

```
def example_function():
```

This should appear in your Python script as:

```
def example_function():
```

Here def and then a space lets the computer know you are defining a function. Next `example_function` is where you state what you would like to call your function. Finally you must enter a pair of brackets and a colon immediately after your function name.

Arguments:

In the brackets after the function name you enter the arguments the function will expect when it's called, for example:

```
def example_function(a,b,c):
```

This should appear in your Python script as:

```
def example_function(a,b,c):
```

This tells the function it should expect to be called with three variables and it should define these variables as a, b and c respectively. So you could call the function with the values 0.1, 0.4 and 0.7 by entering:

```
example_function(0.1,0.4,0.7)
```

This should appear in your Python script as:

```
example_function(0.1,0.4,0.7)
```

This would define a, b and c as 0.1, 0.4 and 0.7 respectively within the function.

You could also do this by defining the values outside the function so they can be used again in other functions without redefinition however if you want your function not to expect any input values when it is called just enter the brackets.

Calculations and Commands:

Now we need to enter what we want the function to do. After you've defined the function you need to go to a new line and indent this line of text, this is important as it lets the computer know that this is part of the function, for example:

```
def example_function(a,b,c):  
    d = a*b*c
```

This should appear in your Python script as:

```
def example_function(a,b,c):  
    d = a*b*c
```

All lines that should be included in the function must be indented to let the computer know they should be within the function.

Outputting a Value:

To get our function to output a value of something it has calculated or retrieved we must enter return and a space followed by the variable in the function you want to output, for example:

```
def example_function(a,b,c):  
    d = a*b*c  
    return d
```

This should appear in your Python script as:

```
def example_function(a,b,c):  
    d = a*b*c  
    return d
```

This is a complete function that should run without fault however if your function simply executes a command such as getting Baxter to move, you do not need the return part as your function doesn't need to output anything.