

Activity 1

Oct. 5, 2010

Python Basics

During lecture you learned about functions, `if` statements, and `for` loops. Let's practice using them! Open up a new Python shell and then a new module. You will be doing your work in the module. Be sure to save the file as 'YOURNAMEclass2.py'.

1. Take a look at the following code:

```
>>> def clamp100(x):  
    if x < 100:  
        x = 100  
    return x
```

```
>>> x = 101  
>>> y = 99  
>>> clamp100(x)  
101  
>>> clamp100(y)  
100  
>>>
```

This is a function we wrote called `clamp100` that takes in a value `x` and sets it to 100 if the value is less than 100. The function then returns the new value of `x`. Notice that if `x` is greater than 100, the value of `x` remains unchanged. The function can take in a string too. What do you think it does with a string? Take a look!

```
>>> clamp100("Can we clamp this too?")  
'Can we clamp this too?'
```

The string is a value that does not evaluate to something less than 100. So the function simply returns the string as it received it. In your module write a function called `clamp50`. It should look pretty similar to the code above. You could do your work right in the shell

but opening up a new module allows you to save your work and come back to it. Hit F5 and return to your Python shell. In the shell create a new variable `x` and assign it some value. Then test your function by writing in the shell `clamp50(x)`. The shell should return a value. Is it what you expected? If not go back and check the code you wrote.

2. Write a function that takes in a value and doubles that value if it is less than 100. Test it just as you did in the last problem.
3. Write a function that takes in two values, `x` and `y`, and assigns `x` the value of `y` if `x` is less than `y`. Don't be afraid to ask a TA if you're confused!
4. Look at the following code:

```
>>> def changeString(string):
    if string[0] == "R":
        return "L" + string[1:]
    else:
        return string
```

```
>>> changeString("Race")
'Lace'
>>> changeString("Face")
'Face'
```

Can you figure out what `changeString` is doing? Rewrite `changeString` so that it changes the first letter of a string to a 'W' the string begins a 'Q'. Test your function.

5. Take a look at the following code:

```
>>> def Between5and10(x):
    if x > 5 and x < 10:
        return True
    else:
        return False
```

This function combines two `if` statements with the `and` operator. Write and test a function that takes in a value and sets that value to 100 if the value is greater than 0 and less than 100. Otherwise it sets the value to 200. The function then returns the variable it took in.

6. Now take a look at this function:

```
>>> def theCount():
    for i in range(1, 11):
        print "The Count says", + i

>>> theCount()
The Count says 1
The Count says 2
The Count says 3
The Count says 4
The Count says 5
The Count says 6
The Count says 7
The Count says 8
The Count says 9
The Count says 10
>>>
```

What is the code doing? What does the for loop do? Write your own function that prints ‘‘The number of cookies the Cookie Monster eats is ’’ and then the numbers 1-10.

Handin

E-mail 'YOURNAMEclass2.py to cs0931tas@cs.brown.edu.