This lab is designed for students who have not yet become independent in their Python programming. It is best to do this lab completely on your own. On the other hand, do not just sit there stuck, and don't guess. So, if you need help, seek it out, but be sure to ask your helper to give you the smallest hint they can possibly think of. It’s best if they help you by asking you questions.

1. Open a new file and call it learning.py. In that file enter the following function:

```python
def tally1():
    who = input("Enter the winner, me or you, in quotes: ")
    if who == "me":
        print "I won!"
    else:
        print "You won!"
```

Run the program several times so you see both messages getting printed.

2. Add a new function to your file that calls `tally1` four times. Here's the shell.

```python
def tally2():
    for i in range(4):
        #What Python statement should go here?
```

Fill in the missing statement and then follow the debug cycle. First, run the program on a variety of well-chosen inputs. If it doesn’t work as it should, step away from the computer and trace the particular call that didn’t work properly. Be sure to make a careful picture of memory with all the variables in the program. When you understand the error (and only then) try again. Repeat this process as often as you need, but never make a change until you are 100 percent sure that you understand why Python is giving you the output it is giving you.

3. Copy `tally2` to make a new function called `tally3`, but modify it so that it has one parameter: the number of times you want to call `tally2`. Here is a sample run to show you the output you are trying to achieve:

```python
>>> tally3(3)
Enter the winner, me or you, in quotes: "me"
I won!
Enter the winner, me or you, in quotes: "you"
You won!
Enter the winner, me or you, in quotes: "me"
I won!
```

Make sure your program will work for any positive integer, prompting the user the appropriate number of times.
4. Make sure you’re comfortable with the Python boolean values True and False by taking the time to understand all the output below.

```python
>>> 2<>3
True
>>> 2==3
False
>>> 2<3
True
>>> 2<3 and 3<4
True
>>> 2<3 and 4<3
False
>>> if True:
... print "hi"
... else:
... print "bye"
hi
>>> if False:
... print "hi"
... else:
... print "bye"
bye
```  

5. Here is a version of tally1 called tally4 that returns True if “I” won, and False otherwise.

```python
def tally4():
    who = input ("Enter the winner, me or you, in quotes: ")
    if who == "me":
        return True
    else:
        return False
```

Call this program a few times to make sure you understand it.

6. Make a new function called tally5 that has one parameter n and calls tally4 n times. Have this program print the number of times “I” won and the number of times “I” didn’t win. You have all the tools you need: you just need to put together two ideas that are earlier in this worksheet. You’ll need to debug your program probably. Again, if your program doesn’t run correctly, step away from the keyboard and trace it making a careful picture of memory. Here you have a parameter so don’t forget the first step (in which the actual parameter is assigned to the formal parameter). Only when you understand the exact input you’re getting should you attempt to modify your program.

7. Finally, modify tally5 so that it prints instead either ”I won!” or ”You won!” or ”It’s a tie!” Here, what you learned in the midterm should help. Here’s some sample output:
>>> tally5(6)
Enter the winner, me or you, in quotes: "me"
Enter the winner, me or you, in quotes: "me"
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "me"
Enter the winner, me or you, in quotes: "me"
I won!

>>> tally5(6)
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "me"
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "me"
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "me"
It's a tie!

>>> tally5(4)
Enter the winner, me or you, in quotes: "me"
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "you"
Enter the winner, me or you, in quotes: "you"
You won!

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