Factorial

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CSIS 2430-001

Objective:

**With your newly chosen programming language, your goal is to implement facto-
rial for a prompted integer. Make sure you include in your analysis how well the
algorithm worked with your newly chosen language. When does it fail? Why?**

What Worked:

The algorithm worked well in python. It was very easy to grab the user input from the
console. Python is built very nicely to run scripts like this factorial script.

What Didn't Work:

I had to research factorials of 0 and 1 so that the program would return the correct answer.
I had forgotten that both 0 and 1 return 1.

Comments:

I am very happy so far with the python language and I am excited to program some web
applications with it.

Code:

```python
"""Calculate the factorial for the given positive number"""
def factorial(number):
    # If the number is 0 or 1 ... return 1
    if number <= 1:
        return 1
    # Vars for while loop and to store the calculation
    count = 1
    total = 1
    #Loop through to find the factorial
    while count <= number:
        total = total * count
        count += 1
    return total


if __name__ == '__main__':
    # Display what the program is/does
    print ("\nCalculate the Factorial of a Non-Negative Integer")
    # Get the number the user wants the factorial of
    number = input('\nEnter a number: ')
    # Checks to make sure the number is not negative
    while number < 0:
        # Ask the user for another number
        print('\nPlease enter a positive integer ')
        number = input('Enter a number: ')
    else:
        # Call the function and display the answer
        total = factorial(number)
        print '\nThe Factorial of',number,'is',total
```

```
[darin@darin-HP:~/Documents/CSIS2430Spring2014]$python factorial.py

Calculate the Factorial of a Non-Negative Integer

Enter a number: 100

The Factorial of 100 is 933262154439441526816992388562667004907159682643816214685929638952175999932299156089414639761565182862536979208272237582511852109168640000000000
00000000000000
[darin@darin-HP:~/Documents/CSIS2430Spring2014]$python factorial.py

Calculate the Factorial of a Non-Negative Integer

Enter a number: 0

The Factorial of 0 is 1
[darin@darin-HP:~/Documents/CSIS2430Spring2014]$python factorial.py

Calculate the Factorial of a Non-Negative Integer

Enter a number: 10

The Factorial of 10 is 3628800
[darin@darin-HP:~/Documents/CSIS2430Spring2014]$
```