

CS 1301 – Summer 2009

Pair Homework 2 – Conversions/Tip Calculator

Due: Friday, Aug 28th, before 6 PM

Out of 100 points

Files to submit: 1. hw2.py

You will be writing several functions, but they will all be saved in one file: hw2.py. Please save all of the functions in this one file or you will lose points.

For Help:

- TA Helpdesk – Schedule posted on class website.
- Email TAs

Notes:

- **Don't forget to include the required comments and collaboration statement (as outlined on the course syllabus).**
- **Do not wait until the last minute** to do this assignment in case you run into problems.
- If you find a significant error in the homework assignment, please let a TA know immediately.

Part 1 – Conversions (45 pts)

Section A – Mass (15 pt s)

For part A, you will write a function called **mass()** which takes in a value in kilograms and converts that value into stones. For reference, there are 0.157 stones (yes, that's a real unit!) in 1 kilogram. Please **return** the value. Save this function in your **hw2.py** file as well.

Sample Output:

```
>>> mass(4)
0.628
>>> mass(8)
1.256
```

Section B – Volume (15 pts)

In this section, you will need to convert volumes. There are 2.11 US pints in one liter.

Write a function called **volume()** that takes in a value in liters and converts it to US pints.

Since we want to know what we're dealing with, **print** the value out with a nice little sentence explaining the conversion that just happened. Please print the values to 2

decimal places. See the sample output below. Save this function in your **hw2.py** file as well.

4.0

-Round the tax to the nearest cent by use of string formatting. Remember, you're working with money, so how are dollar amounts usually presented?

Sample output:

```
>>>tipCalculator()  
How much is the bill before tax and tip? 7.80  
What percent tip do you want to leave? 15  
Tax is $0.61  
Tip is $2.00  
Total is $10.41
```

Grading Rubric

Part 1 - Conversions - 45 points

Part A - 15 points

Function named correctly (mass) - 5 points

Performs correct conversion - 5 points

Returns the value - 5 points

Part B - 15 points

Function named correctly (volume) - 5 points

Performs correct conversion - 5 points

Print statement containing values to 2 decimal points - 5 points

Part C - 15 points

Function named correctly (monkeys) - 5 points

Performs correct conversion - 5 points

Print statement containing values to specified decimal points - 5

points

Part 2 - Tip Calculator - 55 points

Gets input from user - 5 points

Input is cast correctly - 7 points

Tax is calculated correctly - 7 points

Tip is calculated correctly - 7 points

Total is calculated correctly - 7 points

Uses math.ceil() as needed - 7 points

Outputs are correct - 15 points (5 each for tax, tip, and total)

For a grand total of 100 possible points.

Written By: Melody Nailor, Spring 2009

Adapted By: Trevor Register, Summer 2009