# CS 1301  Pair Homework 2 – Conversions

**Due: Friday September 4th, before 11:55 PM**
**Out of 100 points**
**Files to submit: HW2.py**

**THIS IS A PAIR PROGRAMMING ASSIGNMENT!!**

You are welcome to work with a partner *from your recitation*, but you may also work alone if you wish. Your pair may collaborate with other students in this class. Collaboration means talking through problems, assisting with debugging, explaining a concept, etc. You should not exchange code or write code for other pairs. Collaboration at a reasonable level will not result in substantially similar code. For pair programming assignments, you and your partner should turn in identical assignments with both your names at the top.
***NOTE: EACH partner is responsible for turning in their own assignment! If you fail to turn in your assignment, you will receive a zero, regardless of if your partner turned in their assignment or not.***

For Help:
- TA Helpdesk – Schedule posted on class website.
- Email TA's or use T-Square Forums
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.

## Conversions / Calculations (100 points)

You will write a few python functions for practice with calculations. In your HW2.py file, include a comment at the top with your name, section, GTID/Email, and your collaboration statement. Here is an example of an appropriate collaboration statement (the # character in Python is for comments that are not part of the code):
#George P. Burdell 902112358
#gburdell3@gatech.edu
#My partner, Name, and I worked on this assignment alone, using only this semester's course materials.
***ALWAYS REMEMBER THE COLLABORATION STATEMENT***
Also include each of the following functions:

- **square**
- **taylorSwift**
- **girlScoutCookies**
- **conversionTime**
- **tipCalulator**
- **falafel**

**1. Function Name:**

**square**

Parameters:

**base**

Return Value:

**result**

Description:

Write a function that takes in the base and then return the result of squaring the base.

Test Case:
python>>> y=square(5)

Ok

python>>> print(y)

25

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**2. Function Name:**

**taylorSwift**

Parameters:

**numFans**

Return Value:

**None**
Description:
Taylor Swift's backstage meet-and-greet after her concert will have a preset number of fans (numFans). Each fan will get three minutes to talk to TSwizzle and get her autograph, Assuming TSwizzle will start the backstage tour at exactly 9:00PM and each fan takes only 3 minutes, at what time will TSwizzle be done? Print the time out with a descriptive sentence and return None. You may assume that security won't let enough fans into the line so that Tayler has to stay past 11:59pm.

Test Case:
python>>> taylorSwift(33)

Taylor Swift is done at 10:39 PM.

Ok

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**3. Function Name:**

**girlScoutCookies**

Parameters:

**None**

Return Value:

**None**

Description:

This Girl Scout season is going to be a huge hit! As this year's accountant, write a user interactive function that takes in how many boxes of Girl Scout Cookies the customer wants to buy and how much money they currently have. Then, calculate the difference (assuming a box is $4) between how much they would owe and how much money they have and print the amount to the screen. Each box of cookies is $4 and you may assume that the customer does not have enough money each time (because they really like girl scout cookies).

Test Case:
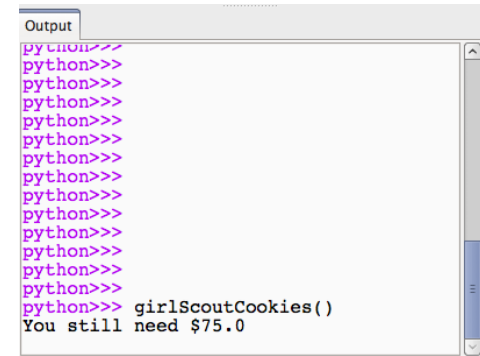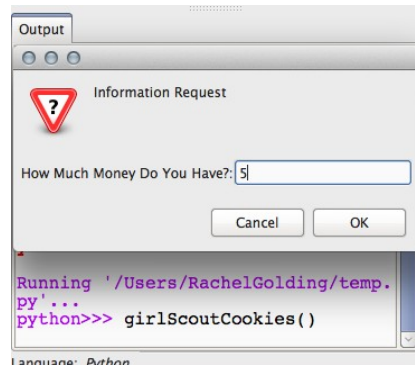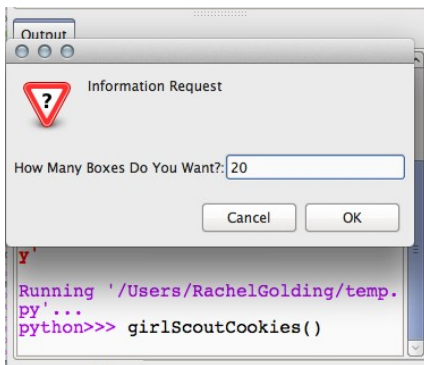


**4. Function Name:**

**conversionTime**

Parameters:

**metersPerSecond**

Return Value:

**None**

Description:

As we all know, the SI base units are the way to go for measuring anything in the physical world. However, due to some strange countries, not all of us know SI. Write a function that takes in metersPerSecond as a parameter

and convert to miles per hour, feet per second, and kilometers per hour and then Print all of them with a descriptive sentence and round to 2 decimal places. 1 meter = 3.28084 feet; 1 km = 1000 m; 1 mile = 5280 feet

Test Case:
python>>> conversionTime(30)
You have 67.11 mph, 98.43 feet per second, and 108.00 kilometers per hour.
Ok

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**5. Function Name:**

**tipCalculator**

Parameters:

**None**

Return Value:

**totalCost**

Description:

After an eventful night at the Waffle House, you have decided to bring along your handy-dandy laptop to calculate the total cost of the dinner. Ask the user how much the Bill was, what percentage tip they would like to pay, and if they had any coupons for that evening. **ROUND THE TIP UP TO NEAREST DOLLAR.**

**NOTE: The discount is taken off of the initial bill and tax is applied after this discount. However, you must pay a tip on the initial bill received and the tip is not taxed. Tax is 8%. Use string formatting to generate a string of the total cost like money is displayed (2 decimal points).**

To round tip up, use math.ceil() after importing math.
For example, if your meal was $100, your chosen tip was 15%, and you have a $10 off, then your totalCost is $112.20. **Return, do NOT print, the total cost as a string, containing a $ at the front, such as "$112.20".**

**6. Function Name:**
        **falafel**
Parameters:
        **falafelBalls, hummus, & pitaBread**
Return Value:
        **None**
Description:
While working at the Falafel shop, you must calculate how many falafels you can make at any given time. 6 falafelBalls are required in each pita (1 pita per sandwich)  and two [tablespoons] of hummus. **The parameters falafelBalls, hummus, and pitaBreak represent the current inventory** Print to the screen how many sandwiches can be made as follows: "With 13 falafel balls, 3 pitas and 4 hummus, you can make a maximum of 2 falafels."

# RUBRIC

- **square | 5 Points**
  - ○ Function named correctly **(2.5 Points)**
  - ○ Returns correct result **(2.5 Points)**

- **taylorSwift | 15 Points**
  - ○ Function named correctly **(2.5 Points)**
  - ○ Calculates Correct Time **(5 Points)**
  - ○ Displays time Correctly **(5 Points)**
  - ○ Prints correct result **(2.5 Points)**

- **girlScoutCookies | 20 Points**
  - ○ Function named correctly **(2.5 Points)**
  - ○ Correctly Inputs Data **(5 Points)**
  - ○ Calculates Difference **(10 Points)**
  - ○ Prints correct result **(2.5 Points)**

- **conversionTime | 15 Points**
  - ○ Function named correctly **(2.5 Points)**
  - ○ Calculates Correct units **(10 Points)**
  - ○ Prints correct result **(2.5 Points)**

- **tipCalulator | 25 Points**
  - ○ Function named correctly **(2.5 Points)**
  - ○ Inputs Correct Data **(5 Points)**
  - ○ Calculates Tip Correctly **(5 Points)**
  - ○ Calculates Tax Correctly **(5 Points)**
  - ○ Calculates Discount Correctly **(5 Points)**
  - ○ Returns correct result **(2.5 Points)**

- **falafel | 20 Points**
  - ○ Function named correctly **(2.5 Points)**
  - ○ Calculates Correct Falafel Amounts **(10 Points)**
  - ○ Prints correct result **(7.5 Points)**