CS 65
Fall 2025

Lab 2: Group Tip Calculator

Due: Tuesday, September 23rd (Sec#1) and September 24th (Sect#2 and Sec#3)
Total points: 4

Part 1: The *round* function

The `round` function in Python is used to round a floating-point number to a specified number of decimal places. By default, it rounds to the nearest whole number, but you can specify the number of decimal places you want.

The function follows standard rounding rules: if the digit after the rounding place is 5 or greater, the number rounds up; otherwise, it rounds down. In cases where the number being rounded is exactly halfway between two possibilities (such as 2.5 or 3.5), Python follows **bankers' rounding**, also known as "round to even." This means it rounds to the nearest even number, helping to minimize cumulative rounding errors in large datasets.

The syntax of the function is:

```
round(number, ndigits)
```

- **`number`**: The floating-point number you want to round.
- **`ndigits`** (optional): The number of decimal places to round to. If omitted, the function rounds to the nearest integer.

For Example,

```
print(round(4.6)) # Output: 5
print(round(4.3)) # Output: 4

print(round(3.14159, 2)) # Output: 3.14
print(round(2.71828, 3)) # Output: 2.718
```

Part 2: The Challenge Exercise (this is what you'll hand in)

Create a new file called lab2.py. make sure your name is in comments at the top of your code.

Write a program that asks the user to enter in the total price of a bill, the number of people who will be splitting the bill, and the total tip amount (always in this order). The program should then display "Each person owes:" followed by the amount based on the following formula:

$$\text{Amount per person} = \frac{\text{Total Bill} + (\text{Total Bill} \times \text{Tip Percentage}/100)}{\text{Number of People}}$$

You should use the round function to ensure that the amount per person is rounded to two decimal places.

You can also assume that the number of people and tip percentage will always be an integer. The total bill may be a float.

The number of people will always be a non-zero, positive integer.

Example runs of the program:

```
Total bill: 100
Number of people: 2
Tip percentage: 25
Each person owes: 62.5
```

```
Total bill: 23.45
Number of people: 3
Tip percentage: 15
Each person owes: 8.99
```

```
Total bill: 256.87
Number of people: 10
Tip percentage: 20
Each person owes: 30.82
```

When you are finished, upload your lab2.py file to Xuesitong. For this assignment, I will test your code on several different inputs and check for the correct results, so make sure you test your program with additional test cases to ensure it is working.