CS 170 ch.2 Lab 2

# Task 1

Question: Mathematical Operations (with integers) and user input

Create a new project for this exercise. Write a program that **accepts 2 integer values from the user**, with the prompts shown.

***For testing purposes, you have to output a newline after every user input (see examples below)***

Your program should then output the sum, the product, the **integer** quotient, and the **modulus** in exactly the same format as the examples below.

User input has been **bolded and underlined** for emphasis.

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| **Example 1:**  Enter the first integer: **10**  Enter the second integer: **25**  10 + 25 = 35  10 \* 25 = 250  10 / 25 = 0  10 % 25 = 10 | **Example 2:**  Enter the first integer: **15**  Enter the second integer: **5**  15 + 5 = 20  15 \* 5 = 75  15 / 5 = 3  15 % 5 = 0 |
| **Example 3:**  Enter the first integer: **12**  Enter the second integer: **10**  12 + 10 = 22  12 \* 10 = 120  12 / 10 = 1  12 % 10 = 2 |  |

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# Task 2

Question: Write a program that asks the user to enter the number of hours they worked this week. Your program should calculate and print your weekly paycheck. Keep in mind the following:

- the normal weekly hours worked are 40 (**weeklyHours** = 40)

- anything above that is considered **overTimeHours**.

- payRate represents how much you get paid per hour for the first 40 hrs.

-overTimePayRate needs to be calculated at a rate of 1.5.

Test cases:

**Test case #**             **hrs worked           hourly rate    PayCheck**

          1                                40                            $16          $640

          2                                45                             $20          $950

          3                                30                             $50          $1500

Sample Output:

How many hours did you work this week? 45

How many hours overtime? 5

What is your hourly wage? 20

This week I worked 45 hours and my paycheck is $950.00

**Note: In this program, you MUST use the printf method instead of print or println for the final output. You can use print or println when interacting with the user.**

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# Task 3

Question: Create a class called **FahrenheitToCelsius**that asks the user to enter a temperature in Fahrenheit and convert that temperature to Celsius. The equation to convert is as follows:

  celTemp = (farTemp -32) X 5/9

Display the result with 3 decimal places.

Run your code 5 times with the following examples:

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| **Fahrenheit** | **Celsius (3 decimal places)** |
| 75 | 23.889 |
| 70 | 21.111 |
| 45 | 7.222 |
| 32 | 0.000 |
| 0 | -17.778 |

Sample output:

**Enter a temperature in Fahrenheit:** 75

**The temperature in Celsius is:**  23.889

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# Task 4

Question: Write a class called **DayConverter** which asks the user to enter a number of days and outputs the equivalent duration in hours, in minutes, and in seconds.

Sample output:

**Enter a number of days:** 2

2 days is 48 hours or 2880 minutes or 172800 seconds

You will need to run your code 3 times

**test case                  #of days**

1                                2 days

2                                5 days

3                                10 days

Note: Create **constants** for all the assumptions, such as there are 60 seconds in a minute.

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