**Design Notebook – Assignment # 2**

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**Class: CS1150 #007**

**Due: Sept 12, 2024**

**Step 1: Problem Statement**  
Create a water intake calculator. The program must obtain from the user the following inputs for two people: name, weight, and exercise time in minutes. Next, the program computes each person’s daily water requirement, exercise water requirement, and total water requirement. The program also computes the differences between the two people for weight, exercise time, daily water requirement, exercise water requirement, and total water requirement and presents these differences in a table.

**Step 2: Understandings**

**What do I know**

* I know how to create a main() method along with execution code.
* I know how to assign data types to variables
* I know how to do equation with the created variables
* I know how to output the code with System.***out***.println and System.***out***.printf methods

**What I Don’t Know – What I’m struggling with – Questions I have**

* I had issues converting double data types to float or integer data types. Had to play around with assigning data types to output desired results.
* Assignment specifies two people when the instructions only require coding for one individual (e.g. Joe). Will talk to instructor if I should stick to only doing code for that one person or add a second person.
* I struggled and spent a lot of time outputting the code as a table. There must be an easier way to do this.
* Using format specifiers when outputting the code for the differences was difficult.

**Step 3: Pseudocode for Main**

* Note that pseudocode is an English version of what your program does – it is NOT pure Java code – it is a mixture of English and Java
* The following is an example of the pseudocode for main. Notice that it is mostly written in English. By sticking with English, it helps to keep the focus on the solving the problem without concern with Java syntax. We can “walk through” through the pseudocode pretending to be the computer to ensure it does what we are expecting before any code is even written. The goal is to make writing the code quick and easy.

Ask user for name of 1st person  
Store user input in variable namePerson1  
Ask user for 1st person’s weight in pounds  
Store user input in variable weightPerson1  
Ask user for 1st person’s exercise minutes  
Store user input in variable exerciseTimePerson1

Calculate 1st person’s daily water requirement:  
 **dailyWaterPerson1 = (weightPerson1 \* 0.67) / 8.**0

Next, determine how much water is required when exercise is included:  
 **exerciseWaterPerson1 = ((exerciseTimePerson1 / 30) \* 12) / 8.0**

Last, calculate 1st person’s total water requirements:  
 **totalWaterPerson1 = dailyWaterPerson1 + exerciseWaterPerson1**

Repeat the above steps for person #2

Display results in a nicely formatted table  
Display for each person their name, weight and exercise minutes  
Display for each person their daily water, exercise water and total  
water  
Display differences for weight, exercise mins, daily water, exercise  
water & total water

**Step 4: Lessons Learned**

* I learned how to use format specifiers when outputting the code with System.out.print() (e.g. System.***out***.printf("%6.2f", Joe\_total\_water\_needed))
* I learned to import the **Math class** and used the**abs() function** to output absolute when doing the differences. Google helped me with this.
* I learned to import the **Scanner class**.
* By doing a little research, I found out there are methods for using tables and libraries to do so. Hopefully, I can use these later in the course.
* Learned to backtrack and change coding since I ended up having issues using format specifiers when it came to variables assigned with double data types.