CIT130 – chapter 2 – helper file

Here is a sample exercise with a possible answer that might help with completing your homework assignment.

Question:

Write a pseudocode to ask for the number of half-dollars, quarters, dimes and nickels. Calculate and display the total number of pennies based on the given input. Choose descriptive variable names. For example, if the user enters 2 half-dollars and 1 quarter, 2 dimes and 3 nickels, the total number of pennies would be 160. As you know, half-dollar coin is made up of 50 pennies, a quarter is 25 pennies, etc.

Answer:

1. Write "Enter the number of half dollar coins: "
2. input halfD
3. Write "Enter the number of quarters: "
4. input quarters
5. Write "Enter the number of dimes: "
6. input dimes
7. Write "Enter the number of Nickels: "
8. input nickels
9. set amount = halfD * 50 + quarters * 25 + dimes * 10 + nickels * 5
10. display " the total amount is: " + amount

Q6. Write a pseudocode to ask for the speed of a car in miles per hour and the distance to travel. Calculate and display the time in hours to get to the destination. The calculation is pretty simple. For example, if the speed is 70 miles per hour and the distance to travel is 1000 miles, it will take 1000 / 70 = 14.28 hours. The simple formula is distance / rate.

Answer:

1. Write " What is the speed of the car per hour: "

2. input speed

3. Write " What is the distance you would like to travel: "

4. input distance

5. set time = distance /speed

6. display " It will take " + time + " hours "

Question:

Write a **Java** program to perform the following operations. Write all the instructions is ONE java file. **Clearly explain the output (don't just display a number). Don't forget documentation. Because you have 3 parts for this exercise, clearly show the beginning of each portion.**

a) Ask the user to input the weight of a person in pounds and covert it to kilograms and grams. Display all data (input and computed). Assume, one pound is 0.454 kilograms. There are 1000 grams in a kilogram. So, if the user enters, 100 pounds, the weight in kilograms is 45.4 kilograms and 45400 grams. Make sure to display the output with additional information to describe the output. Don't worry about formatting the output.
b) Ask for the number of females and the number of males registered in a class. Display the percentage of males and females. So, if there are 8 males and 12 females in a class, the total is 20 and the percentage of males is 8/20 which is 40%, and the percentage of the females is 12/20 = 60%. Display all input and output variables. I need the percent shown and not a decimal number such as .4 or .6.

The Answer: **NOTE the proper documentation style and specific comments throughout the code.**

```
/* Cit130_Hw2.java: Assignment #2 – CIT130: Java Programming */

/*

Author: One of you

Due Date:

Time take to complete this exercise: 1hr 55mins

   pseudo-code = 15min, program coding with documentation = 60min, compile/debug/test/format = 40min

*/


/* Program Purpose:


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Part a. This program accepts input from the console to convert a person's weight in pounds to kilograms and grams.

Input variables:

weight_in_pounds: User input of person's weight in pounds


Output variables:
```

POUND_KILOGRAM: Constant value to convert pound to kilogram

KILOGRAM_GRAM: Constant value to convert kilogram to gram

weight_in_kilograms: Converted weight from pound to kilogram

weight_in_grams: Coverted weight from kilogram to gram

Part b. This program accepts input from the console for number of females and males registered in a class.

Computes total and percentage of females and males.

Input variables:

number_of_females:

number_of_males:

Output variables:

total_females_males:

percentage_females:

percentage_males:

*/

```
/*************************
 * Start of program code *
 *************************/

import java.util.Scanner;    //include package class needed to accept input from console
```

```
public class Cit130_Hw2
{
  public static void main(String[] args)
  {
  // Declare a variable of Scanner type called userInput
  Scanner userInput = new Scanner(System.in);

  /********************
   * Start of Part a. *
   ********************/

  // Prompt user to input a person's weight in pounds
  System.out.println(" ");   // Insert blank line
  System.out.println(" ");   // Insert blank line
  System.out.println("   HW2 Part a. >>> Program to convert weight in pounds to kilogram and grams
<<< ");   // Part a. Program heading
  System.out.println(" ");   // Insert blank line
  System.out.print("Enter a person's weight in pounds: ");

  //define your variables here
  double weight_in_pounds;
  final double POUND_KILOGRAM = 0.454;
  final double KILOGRAM_GRAM = 1000;   //Declare constant values for conversion from pound to
kilogram & kilogram to grams
  double weight_in_kilograms;
  double weight_in_grams;

  weight_in_pounds = userInput.nextDouble();
```

```
  // Convert pounds to kilograms

  weight_in_kilograms = weight_in_pounds * POUND_KILOGRAM;

  // Convert kilograms to grams
  weight_in_grams = weight_in_kilograms * KILOGRAM_GRAM;

  // Display result
  System.out.println(" ");   // Insert blank line
  System.out.println(" ");   // Insert blank line
  System.out.println("You entered weight in pounds : " + weight_in_pounds);
  System.out.println("Converted weight in kilograms: " + weight_in_kilograms);
  System.out.println("Converted weight in grams    : " + weight_in_grams);
  System.out.println(" ");   // Insert blank line
  System.out.println(" ");   // Insert blank line

  /********************
   * Start of Part b. *
   ********************/
  int number_of_females;
  int number_of_males;
  int total_females_males;
  double percent_females;
  double percent_males;
  // Prompt user to input number of females and males registered in a class
  System.out.println("   HW2 Part b. >>> Program to compute percentage of number of females and
males registered in a class <<< ");   // Part b. Program heading
  System.out.println(" ");   // Insert blank line
  System.out.print("Enter number of females: ");
```

```
   number_of_females = userInput.nextInt();

   System.out.print("Enter number of males  : ");

   number_of_males = userInput.nextInt();

   // Compute total of females and males

   total_females_males = number_of_females + number_of_males;

   // Compute percentage of females

   percent_females = ((double) number_of_females / (double) total_females_males) * 100; //CASTING IS
NEEDED to get our decimal division

   // Compute percentage of males

   percent_males = ((double) number_of_males / (double) total_females_males) * 100;

   // Display result

   System.out.println(" ");   // Insert blank line

   System.out.println(" ");   // Insert blank line

   System.out.println("You entered number of females : " + number_of_females);

   System.out.println("You entered number of males   : " + number_of_males);

   System.out.println(" ");   // Insert blank line

   System.out.println("Total number of females and males: " + total_females_males);

   System.out.println(" ");   // Insert blank line

   System.out.println("Percentage of females: " + (int) percent_females + "%");

   System.out.println("Percentage of males  : " + (int) percent_males + "%");

   System.out.println(" ");   // Insert blank line

   System.out.println(" ");   // Insert blank line

   } //end of main method

} //end of the class definition
```