CS 5000 – Summer 2023
Assignment #1, 50 Points

Simple Java Programs – Chapters 1 and 2

Develop a complete Java program for each of the following problems. Please name the programs as indicated and add proper program headers and output labels as shown below. ***Please use only concepts and programming constructs/syntax we discuss to date.***

Program #1 (10 points): Create a new Java program, named ***HelloWorld***, in your IDE and type the following code. Compile the code and run it. Make sure you **replace the dots in the header section (red comments) with your full name and the name of your IDE, such as Jgrasp.** The code in red color is called comments.

```
// Class:      CS 5000
// Term:       Summer 2023
// Name:       ...
// Instructor: Dr. Haddad
// Assignment: 1
// IDE:        ...

import java.util.Scanner; //import scanner class

public class HelloWorld
{
    public static void main(String args[]) //program main method
    {
        Scanner s = new Scanner(System.in);
        System.out.print("Please enter your name: "); //prompt user for input
        String name = s.nextLine();  //read user input
        System.out.println("Hello " + name + "!"); //print out your message
    }
}
```

Program #2 (20 points): Write a java program, named ***SumDigits***, to read from the user an integer number (as numeric value, using integer variable and method `nextInt()` of the scanner class). Assume the input value is limited to be between 0 and 9999. The program computes and displays the sum of the digits in the number (**Do not use loops or treat the number as string of characters**). Manipulate the input number mathematically using proper math operators (division and remainder) to determine the sum of its digits. For example, if the user enters the integer value193, the program will determine the sum and display the following output. Sample test data below does not show the input prompts.

First test:

```
The input number is:   1234
The sum of digits is:  10
```

Second test:

```
The input number is:   1111
The sum of digits is:  4
```

Third test:

```
The input number is:   2233
The sum of digits is:  10
```

Make sure the program has a proper header and inline comments, see program #1 above. Use proper labels for the input prompt message (such as `Please enter 4-digits integer number:`), and label and line-up the outputs. Use Java tabs character (\t) to line-up the outputs after the labels. Make sure your code displays the outputs following the test data format.

Program #3 (20 points): Write a java program, named ***DrivingCost***, to compute the driving cost of a trip. The program prompts the user to enter the distance to drive (in miles) as double value, the fuel efficiency of the car (mpg) as double value, and the price per gallon (price) as double value. Then the program computes the cost of the trip and displays the output as follows. Sample test data below does not show the input prompts.

Test data 1:

```
The distance (miles):          101.0
Fuel efficiency (mpg):         21.0
Price per gallon (dollars):    $1.54
The trip cost (dollars):       $7.406666666666666
```

Test data 2:

```
The distance (miles):          100.0
Fuel efficiency (mpg):         20.0
Price per gallon (dollars):    $2.0
The trip cost (dollars):       $10.0
```

Make sure the program has a proper header and inline comments, see program #1 above. Use proper labels for the input prompts; and use outputs labels as shown above. Use Java tabs character (\t) to line-up the outputs after the labels. Make sure your code displays the outputs following the test data format.

Submission:

1. Before submitting your programs, make sure you review the assignment submission requirements and grading guidelines posted in D2L. The grading guidelines explain some of the common errors found in programming assignments.
2. The assignment due date is posted in D2L.
3. Please compile and run your java files (only the .java files) right before you upload to the assignment submission folder in D2L.