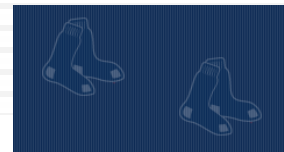


海大資工 Java程式設計課程



Homework 1-1

2

- Write an application that inputs three integers from the user and displays the sum, average, product, smallest and largest of the numbers.
 - ▣ [Note: The calculation of the average in this exercise should result in an integer representation of the average. So if the sum of the values is 7, the average should be 2, not 2.3333....]

Problem-Solving Tips

3

- ❑ 1. Prompt the user for three integer values and use Scanner method nextInt to read them into their respective int variables.
- ❑ 2. Use a series of if statements to determine the smallest and largest numbers. You must use relational operators in the if conditions to compare two numbers at a time.
- ❑ 3. Calculate the sum, product and average, and assign them to variables called sum, product and average, respectively. Then, display the results in an information message dialog.
- ❑ 4. Test your program thoroughly using different test inputs and determine whether your program produces the correct results. Try entering 10, 20, and 30 and see if your results match the sample output above.

Example

4

Enter first integer: 10

Enter second integer: 20

Enter third integer: 30

For the numbers 10, 20 and 30

Largest is 30

Smallest is 10

Sum is 60

Product is 6000

Average is 20

Homework 1-2

5

- Create a class called Employee that includes three pieces of information as instance variables—a first name (type String), a last name (type String) and a monthly salary (type double).
 - ▣ Your class should have a constructor that initializes the three instance variables.
 - ▣ Provide a set and a get method for each instance variable. If the monthly salary is not positive, set it to 0.0.
- Write a test application named EmployeeTest that demonstrates class Employee's capabilities.
 - ▣ Create two Employee objects and display the yearly salary for each Employee. Then give each Employee a 10% raise and display each Employee's yearly salary again.

Problem Solving Tips

6

- 1. Class Employee should declare three instance variables.
- 2. The constructor must declare three parameters, one for each instance variable. The value for the salary should be validated to ensure it is not negative.
- 3. Declare a public set and get method for each instance variable.
 - The set methods should not return values and should each specify a parameter of a type that matches the corresponding instance variable (String for first name and last name, double for the salary).
 - The get methods should receive no parameters and should specify a return type that matches the corresponding instance variable.

Example

7

Employee 1: Bob Jones; Yearly Salary: 34500.00

Employee 2: Susan Baker; Yearly Salary: 37809.00

Increasing employee salaries by 10%

Employee 1: Bob Jones; Yearly Salary: 37950.00

Employee 2: Susan Baker; Yearly Salary: 41589.90

Homework 1-3

8

- Drivers are concerned with the mileage their automobiles get. One driver has kept track of several tankfuls (油箱) of gasoline (汽油) by recording the miles (英里) driven and liter (加侖) used for each tankful.
- Develop a Java application that will input the miles driven and gallons used (both as integers) for each tankful.
- The program should calculate and display the miles per gallon obtained for each tankful and print the combined miles per gallon obtained for all tankfuls up to this point.
- All averaging calculations should produce floating-point results.
- Use class **Scanner** and **sentinel-controlled repetition** to obtain the data from the user.

Example

9

Enter miles (-1 to quit): 350

Enter gallons: 18

MPG this tankful: 19.44

Total MPG: 19.44

Enter miles (-1 to quit): 475

Enter gallons: 16

MPG this tankful: 29.69

Total MPG: 24.26

Enter miles (-1 to quit): -1

作業要求

10

- 命名都要符合CamelCase style
- 類別都要設定package，名稱為`ntou.cs.java2014.你的英文名字`
- 類別內要有註解，至少要簡述此類別與每個方法
- 每題都要有兩個類別，一個為主要類別，一個為測試類別(只包含main)
 - 1-1類別名稱: Calculator以及CalculatorTest
 - 1-2類別名稱: Employ以及EmployTest
 - 1-3類別名稱: GasMeter以及GasMeterTest
- 請繳交電子檔，電子檔包含.java檔與.class檔(上傳至moodle)。
- 屍體(無法compile或執行)不計分。
- 相同版本分數平均。