PCC- CS 593 OOPS LAB

ASSIGNMENT 4

DATE OF EXPERIMENT: 14.08.2023

TOPIC: JAVA PROGRAMMING ON OBJECT & CLASS

1. Create a class called Invoice that a hardware store might use to represent an invoice for an item sold at the store. An Invoice should include four pieces of information as instance variables— a part number (type String), a part description (type String), a quantity of the item being purchased (type int) and a price per item (double). Your class should have a constructor that initializes the four instance variables. Provide a set and a get method for each instance variable. In addition, provide a method named getInvoiceAmount that calculates the invoice amount (i.e., multiplies the quantity by the price per item), then returns the amount as a double value. If the quantity is not positive, it should be set to 0. If the price per item is not positive, it should be set to 0.0. Write a test application named InvoiceTest that demonstrates class Invoice's capabilities.

Sample Output:

```
Original invoice information
Part number: 1234
Description: Hammer
Quantity: 2
Price: 14.95
Invoice amount: 29.90

Updated invoice information
Part number: 001234
Description: Yellow Hammer
Quantity: 3
Price: 19.49
Invoice amount: 58.47

Original invoice information
Part number: 5678
Description: Paint Brush
Quantity: 0
Price: 0.00
Invoice amount: 0.00

Updated invoice information
Part number: 5678
Description: Paint Brush
Quantity: 3
Price: 9.49
Invoice amount: 28.47
```

2. 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 (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 each object's yearly salary. Then give each Employee a 10% raise and display each Employee's yearly salary again.

Sample Output:

```
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
```

3. Create a class called Date that includes three pieces of information as instance variables—a month (type int), a day (type int) and a year (type int). Your class should have a constructor that initializes the three instance variables and assumes that the values provided are correct. Provide a set and a get method for each instance variable. Provide a method displayDate that displays the month, day and year separated by forward slashes (/). Write a test application named DateTest that demonstrates class Date's capabilities.

Sample output:

```
The initial date is: 7/4/2004
Date with new values is: 11/1/2003
```