CST8132 Object-Oriented Programming

Lab 5: Store Management System II

Due Date: Check Brightspace for due dates

Marks: 20 marks (worth 5% of term mark)

Demo: Demo your code (which you submitted in Brightspace) and output to your lab professor.

Recommended Reading: Chapter 9, 11, 15 of Deitel and Deitel, Java How to Program book

Exercise

Update lab 4 to incorporate the following:

1. Use ArrayList instead of arrays
2. Change the flow of the program as given in the output.
3. Reading from file (emp.txt provided) AND reading from keyboard (check expected output)
4. While reading from file, read all employees in the file
5. The format of each line of the file is:
    - an int – either 1 or 2 – 1 represents Regular, 2 represents Contractor
    - an int – Employee Number
    - a string – First Name
    - a string – Last Name
    - a string – Email
    - a long – Phone Number
    - for regular employees,
        - a double – salary
    - for Contractors,
        - a double – hourly rate
        - a double – number of hours
6. While reading from keyboard, read details of only one employee and go back to the menu
7. Process increments (regular employees: 3% increase, contractor employees: $1 increase on hourly rate)
8. Print details & process increment will work only if ArrayList has employees, otherwise print appropriate message (check expected output)
9. Exception handling should be added to all possible situations. Your program should not crash at any point.
10. Your output should match exactly with mine
11. All invalid inputs should be properly handled
12. Only one Scanner for the entire project
13. In order to print error messages in red, you can use System.err.println().
14. All object-oriented principles (data hiding, encapsulation, inheritance, polymorphism etc.) should be taken care of.
15. You should have Person, Employee, Regular, Contractor, Store, and Lab5 classes.

Format your code with proper indentation and formatting. Your code should be properly commented. Test plan and Javadoc are also required for this exercise.

Grading Scheme

Item	Marks
Person class	Requirement
Employee class	2
Regular class	2
Contractor class	2
Store class	5
Lab5 class	3
Comments (normal comments & Javadoc)	3
Test plan	3

Submission

Submit your work (all java files, UML, Javadoc, test plan) to Brightspace as a zipped folder named <LastName><FirstName>Lab5.zip (Example: ThomasAnuLab5.zip) by the due date given in Brightspace. Also, demonstrate your work to your lab professor. Both submission and the demo of submitted code are required to get grades.

Check next page for Expected output

Expected Output (**blue** – user input)

```
Enter name of the store: Quality
How many employees do you have? a
Number of employees shoud be an interger greater than zero... please try again
How many employees do you have? 0
Number of employees shoud be an interger greater than zero... please try again
How many employees do you have? -1
Number of employees shoud be an interger greater than zero... please try again
How many employees do you have? 1.2
Number of employees shoud be an interger greater than zero... please try again
How many employees do you have? 5
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 3

 ***** No employees to process *****

1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 4

 ***** No employees to print *****

1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 8
Invalid choice... choice should be a positive integer from 1-5... please try again
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 2
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 4
================================================================================
               QUALITY STORE MANAGEMENT SYSTEM
================================================================================
      Emp# |                Name |           Email |        Phone |     Salary|
================================================================================
    100101 |            John Doe |    doe@test.com |       123456 |   8166.67 |
    100120 |          Matt James |   matt@test.com |       456789 |    375.00 |
    100125 |          Sam Thomas |    sam@test.com |       123789 |   7083.33 |
```

```
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 1
Enter details of employee 4
1.  Regular
2.  Contractor
Enter type of employee: 5

 ****** Type should be 1 or 2.. please try again ******

Enter details of employee 4
1.  Regular
2.  Contractor
Enter type of employee: 1
Enter Employee Number: 100210
Enter first name: Paul
Enter last name: Samson
Enter email: paul@test.com
Enter phone number: 213456
Enter annual salary: 82000
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 1
Enter details of employee 5
1.  Regular
2.  Contractor
Enter type of employee: 2
Enter Employee Number: 100213
Enter first name: Peter
Enter last name: Mathew
Enter email: pet@test.com
Enter phone number: 321645
Enter hourly rate: 45
Enter number of hours worked: 10
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 1
Enter details of employee 6
1.  Regular
2.  Contractor
Enter type of employee: 100215

 ****** Type should be 1 or 2.. please try again ******

Enter details of employee 6
1.  Regular
2.  Contractor
Enter type of employee: 1
Enter Employee Number: 100215
Enter first name: Allen
Enter last name: Thomas
Enter email: allen@test.com
Enter phone number: 112233
Enter annual salary: 99000
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 4
```

```
================================================================================
                QUALITY STORE MANAGEMENT SYSTEM
================================================================================
      Emp# |                 Name |           Email |        Phone |     Salary|
================================================================================
    100101 |             John Doe |    doe@test.com |       123456 |   8166.67 |
    100120 |           Matt James |   matt@test.com |       456789 |    375.00 |
    100125 |           Sam Thomas |    sam@test.com |       123789 |   7083.33 |
    100210 |          Paul Samson |   paul@test.com |       213456 |   6833.33 |
    100213 |         Peter Mathew |    pet@test.com |       321645 |    450.00 |
    100215 |         Allen Thomas |  allen@test.com |       112233 |   8250.00 |
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 3
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 4
================================================================================
                QUALITY STORE MANAGEMENT SYSTEM
================================================================================
      Emp# |                 Name |           Email |        Phone |     Salary|
================================================================================
    100101 |             John Doe |    doe@test.com |       123456 |   8411.67 |
    100120 |           Matt James |   matt@test.com |       456789 |    380.00 |
    100125 |           Sam Thomas |    sam@test.com |       123789 |   7295.83 |
    100210 |          Paul Samson |   paul@test.com |       213456 |   7038.33 |
    100213 |         Peter Mathew |    pet@test.com |       321645 |    460.00 |
    100215 |         Allen Thomas |  allen@test.com |       112233 |   8497.50 |
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 8
Invalid choice... choice should be a positive integer from 1-5... please try again
1. Read employee details from keyboard
2. Read employee details from file
3. Process increments
4. Print Employee Details
5. Exit
Enter your choice: 5
Good bye... have a good day!
```