DePaul University
College of Computing and Digital Media

CSC 211 - Programming in Java I

Assignment 6

In this assignment, we're going do the following:

- Add functional complexity to the Employee's "getWeeklyPay" method.

1) You can re-use your project from Assignment #5. There is no need to create a new project for this assignment. To do this, make a copy of your project folder from Assignment 5, and give the copy a new name for Assignment 6. For example, my Assignment 5 was done in "C:\Documents and Settings\hieldc\Desktop\Assignment5". I made a copy of the Assignment 4 folder and named it "Assignment6" as follows:

   "C:\Documents and Settings\hieldc\Desktop\Assignment6".

2) Now open the copied project in NetBeans. We need to rename the copied project within NetBeans. To do this, right-click on the existing "Assignment5" project and select menu option "Rename…". Change the "Project Name" from "Assignment5" to"Assignment6" and click "Rename".

3) Finally, right-click on the "Assignment6" project and select menu option "Set as Main Project".

4) The first thing we will do is change the Employee's "getWeeklyPay()" method – we're coing to add some complexity. Delete the content of the existing "getWeeklyPay()" method, leaving it empty – we're going to add some new code:

```
public double getWeeklyPay() {

}
```

   The following is the new "algorithm" we will use to calculate the Employee's weekly pay:

   A) We will differentiate "regular" hours from "overtime" hours *by day*. We will want to sum up the "regular" hours" and sum up the "overtime" hours. For each day, the hours the employee works up to 8 hours are considered "regular" hours. Hours worked past 8 are considered "overtime" hours. *(For this assignment, you MUST use a "while" loop to do this).*
   For example:

Day 1: 6 hours	Regular Hours: 6	Overtime hours: 0
Day 2: 9 hours	Regular Hours: 8	Overtime hours: 1
Day 3: 11 hours	Regular Hours: 8	Overtime hours: 3
Day 4: 8 hours	Regular Hours: 8	Overtime hours: 0
Etc…..		

   B) Their base pay is then calculated as:

      (regular hours * hourly rate) + (ovetime hours * hourly rate * 1.5)

   C) Employees will be paid a little more or a little less than their normal pay based upon their employee id.
      i. If the employee's id begins with 0, 2 or 9, they get 10% more than the pay calculated in step "B" (110% of the pay calculated in step "B")
      ii. If the employee's id begins with a 3, they get 10% less than the pay calculated in step "B" (90% of the pay calculated in step "B")
      iii. If the employee's id begins with an 8, they get 20% more than the pay calculated in step "B" (120% of the pay calculated in step "B")
      iv. Otherwise, there is no change to the pay calculated in step "B"

D) Finally, if the number of regular hours (calculated in step "A") is greater than 34, they will have deductions taken from their pay for benefits – the deductions are 6% of the pay calculated in step "C"

Example 1:

Employee's daily hours: ***Day 1: 6 hours, Day 2: 9 hours, Day 3: 11 hours, Day 4: 8 hours, Day 5: 8 hours***
Employee's hourly rate: ***$18.60***
Employee's ID: ***2468***

A)

Day 1: 6 hours	*Regular Hours: 6*	*Overtime hours: 0*
Day 2: 9 hours	*Regular Hours: 8*	*Overtime hours: 1*
Day 3: 11 hours	*Regular Hours: 8*	*Overtime hours: 3*
Day 4: 8 hours	*Regular Hours: 8*	*Overtime hours: 0*
Day 5: 8 hours	*Regular Hours: 8*	*Overtime hours: 0*
Totals:	*Regular Hours: 38*	*Overtime hours: 4*

*B) Base pay = (regular hours * hourly rate) + (ovetime hours * hourly rate * 1.5)*
*= (38 * $18.60) + (4 * $18.60 * 1.5)*
= $706.80 + $111.60 = $818.40

C) The Employee's ID begins with "2" – so, they will get 10% more than the pay calculated in step "B":
*Pay = Base Pay * 1.1;*
*= $818.40 * 1.1 = $900.24*

D) Since the number of "regular" hours worked is greater than 34, there is a 6% deduction taken from their pay for benefits:
*Pay = Pay * 0.94 = $846.23*

Example 2:

Employee's daily hours: ***Day 1: 8 hours, Day 2: 10 hours, Day 3: 10 hours, Day 4: 9 hours, Day 5: 9 hours***
Employee's hourly rate: ***$22.10***
Employee's ID: ***3690***

A)

Day 1: 8 hours	*Regular Hours: 8*	*Overtime hours: 0*
Day 2: 10 hours	*Regular Hours: 8*	*Overtime hours: 2*
Day 3: 10 hours	*Regular Hours: 8*	*Overtime hours: 2*
Day 4: 9 hours	*Regular Hours: 8*	*Overtime hours: 1*
Day 5: 9 hours	*Regular Hours: 8*	*Overtime hours: 1*
Totals:	*Regular Hours: 40*	*Overtime hours: 6*

*B) Base pay = (regular hours * hourly rate) + (ovetime hours * hourly rate * 1.5)*
*= (40 * $22.10) + (6 * $22.10 * 1.5)*
= $884.00 + $198.90 = $1082.90

C) The Employee's ID begins with "3" – so, they will get 10% less than the pay calculated in step "B":
*Pay = Base Pay * 0.9;*
*= $818.40 * 0.9 = $974.61*

D) Since the number of "regular" hours worked is greater than 34, there is a 6% deduction taken from their pay for benefits:
*Pay = Pay * 0.94 = $916.13*

Example 3:

Employee's daily hours: ***Day 1: 5 hours, Day 2: 0 hours, Day 3: 4 hours, Day 4: 4 hours, Day 5: 6 hours***
Employee's hourly rate: ***$12.20***
Employee's ID: ***1234***

A)

Day 1: 5 hours	*Regular Hours: 5*	*Overtime hours: 0*
Day 2: 0 hours	*Regular Hours: 0*	*Overtime hours: 0*
Day 3: 4 hours	*Regular Hours: 4*	*Overtime hours: 0*
Day 4: 4 hours	*Regular Hours: 4*	*Overtime hours: 0*
Day 5: 6 hours	*Regular Hours: 6*	*Overtime hours: 0*
Totals:	*Regular Hours: 19*	*Overtime hours: 0*

*B) Base pay = (regular hours * hourly rate) + (ovetime hours * hourly rate * 1.5)*
*= (19 * $12.20) + (0 * $12.20 * 1.5)*
= $231.80 + $0.00 = $231.80

C) The Employee's ID begins with "1" – so there is no change to the pay calculated in step "B":

Pay = Base Pay = $231. 80

D) Since the number of "regular" hours worked is less than 34, there is no deduction taken from their pay for benefits:

Pay = $231. 80

5) No changes are needed to the Driver or Timecard classes in this Assignment.

6) Now compile your project – the "Driver.java", "Employee.java" & "Timecard.java" files will be compiled. Fix any compiler errors as usual. Then - run the program.

7) Done!

8) Example Inputs & Outputs *(you must type in the bold-blue text below)*

```
Employee First Name:
Betty
Employee Last Name:
White
Employee Id:
8732
Employee Hourly Rate:
25.00
Enter Hours for day 1:
8
Enter Hours for day 2:
12
Enter Hours for day 3:
11
Enter Hours for day 4:
13
Enter Hours for day 5:
6

Employee:
-----------------------------------
Name:         Betty White
Id:           8732
Hourly Rate: $25.00
Weekly Hours: 50
         Day 1: 8
         Day 2: 12
         Day 3: 11
         Day 4: 13
         Day 5: 6
Weekly Pay:  $1579.20
```

Submission:

- This assignment is due before the start of class next week (on or before 5:45 pm on Monday, May 24th). Late assignments will be penalized 10% per week.
- Your submission should consist of your entire Assignment 5 project folder put into a single ZIP file (or a "TAR" file, or a "RAR" file). Check with me on other formats.
- All submissions are to be made via the course's Course OnLine site
- You may email me with any questions on this assignment at any time between now and the due date.