COP2250 – Assignment 2

The purpose of this assignment is for you to demonstrate knowledge of:

(a) Instance variables vs class variables
(b) Instance methods vs class methods
(c) Know how to call class methods vs how to call instance methods
(d) To a lesser extent use of the Java pre-defined classes – Date, DateFormat, and NumberFormat

The assignment

Write a Java program that can be used to calculate the weekly salary for hourly paid employees. The program initially accepts the employee's id, the number of hours worked, and the hourly pay rate. An employee may work additional hours. When this happens, the additional number of hours must be added to the original amount, and the salary is re-calculated. The program must output on separate lines the employee's id number, the number of hours worked, the hourly pay rate, and the salary, for each employee. In addition, the program must also output the total amount of money paid out by the company. Your output should be similar to **Figure 1**

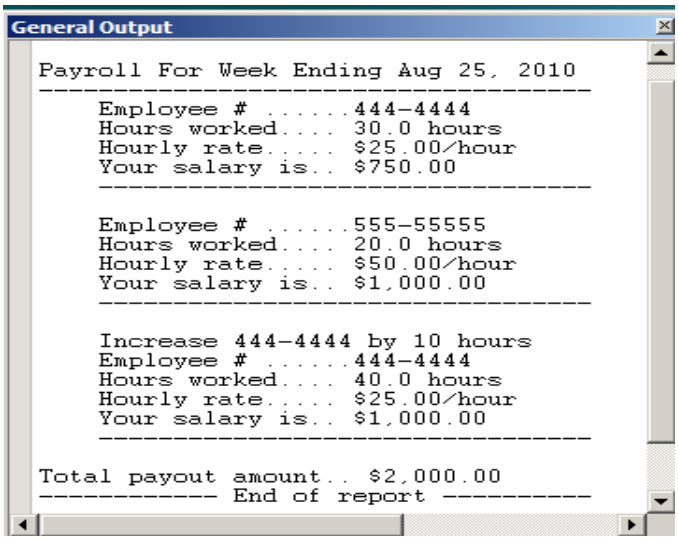

Figure 1 Expected output

In designing your program consider the following:

(a) Write a class called Payroll to include, but not limited to:

- Instance variables for number of hours worked, and hourly rate of pay.
- Class variable for accumulating the weekly payroll.
- A mutator instance method that calculates an employee salary, and accumulates the weekly payroll.

- Constructor that accepts the employee's id number, the number of hours worked, and the hourly rate per employee.

(b) Design a test class called **TestPayroll** that implements the **Payroll** class. See **Listing 1** for incomplete definition of the test class.

```
1.  import java.util.Date; // Used for creating a Date object
2.  import java.text.DateFormat; // Used for specifying the format of the date
3.  import java.text.NumberFormat; // Used for specifying the type of currency
4.
5.  class TestPayroll
6.  {
7.      public static void main(String [] arg)
8.      {
9.          // Set up the formatters
10.         Date d = …….
11.         DateFormat df = …….
12.         NumberFormat nf = ……
13.
14.         System.out.println("\nPayroll For Week Ending " + df.format(d));
15.         System.out.println("-------------------------------------");
16.         Payroll employee1 = new Payroll("444-4444", 30, 25);
17.         employee1.calculateSalary();
18.         displaySalary(employee1, nf);
19.
20.         // Define employee 2
21.
22.         System.out.println("\tIncrease " + employee1.getEmployeeId() + " by 10 hours");
23.         employee1.increaseHours(10); // 10 hours increase
24.         // Re-calculate the salary and print
25.
26.         System.out.println("Total payout amount.. " +  nf.format(Payroll.getTotalPayout()));
27.         System.out.println("------------ End of report ----------");
28.     }
29.     public static void displaySalary(Payroll e, NumberFormat nf)
30.     {
31.         System.out.println("\tEmployee # ....." + e.getEmployeeId());
32.         // ….complete the method …..
33.         System.out.println("\t--------------------------------\n");
34.     }
35. }
```

Listing 1