

CS 1301 - Homework 11

Due before November 7, 1:46 am on Vista (WebCT). You can resubmit your work up until the deadline.

All problems require a UML class diagram. Draw neatly by hand and turn it in to me in class, stapled, in order.

1. **Rectangle.java** – Do problem 7.1 from the text.
2. **Account.java** – Do problem 7.3 from the text.
3. **Employee.java** –The Employee class should have:
 - a. A constructor that accepts a name as an argument. The name should be read-only.
 - b. A private instance variable, **hours**, which is an array of 7 doubles which correspond to the number of hours worked for each day of the week.
 - c. **double getHours(int day)** – A method which returns the number of hours worked for **day**, where **day** takes on values 0, 1, ..., 6. This value will be obtained from the **hours** array.
 - d. **void setHours(int day, double hours)** – A method which sets the number of **hours** worked for **day**. The **hours** will be put into the **hours** array.
 - e. **int numDaysWorked()** – A method which returns the total number of days worked. If a day has 0 hours, then it is not counted.
 - f. **double totalHours()** – A method which returns the total hours worked.
 - g. **String toString()** – A method which returns a message like this:

Dave Gibson worked 4 days for a total of 46.35 hours.

Finally, write a test class, **EmpTest.java** – This class will provide a program that will use the Employee class from problem 3. Provide UML for both classes showing the dependence. The EmpTest class should have a main which looks like this:

```
Employee e = new Employee( "Your Name" );
e.setHours(0,10.0);
e.setHours(2, 9.5);

System.out.println( e.getName() + ", " + e.numDaysWorked() + ", " + e.totalHours() );

e.setHours(3, 9.5);
e.setHours(6, 11.4);

System.out.println( e.getName() + ", " + e.numDaysWorked() + ", " + e.totalHours() + ", " + e.getHours(3) );

e.setName( "goober" ); // should cause compile error, comment out after testing.
e.name = "goober"; // should cause compile error, comment out after testing.

System.out.println( e.toString() );

Employee e2 = new Employee( "Your Friend's Name" );
System.out.println( e2.toString() );
```