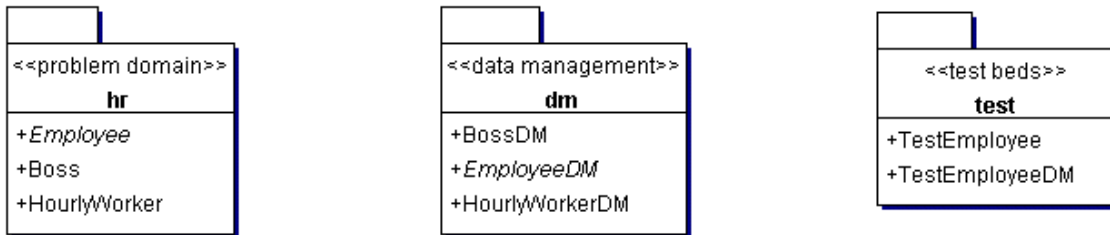


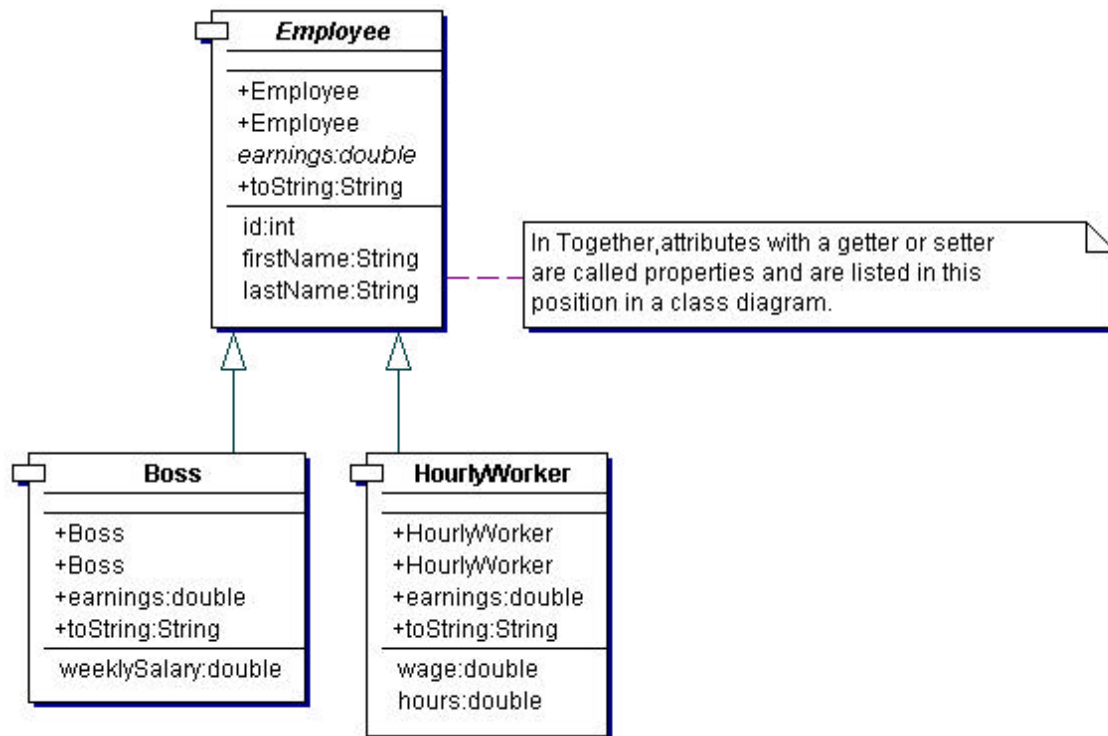
## AITP National Java Programming Contest 2001

Your team is developing a part of the Human Resource (HR) system. An overview of the system is given in the UML diagram shown below.



The GUI package is not shown because it is outside the scope of your project assignment.

The problem domain classes have been designed, coded, and tested. These classes are located in the hr package. The class diagram for the hr package is:



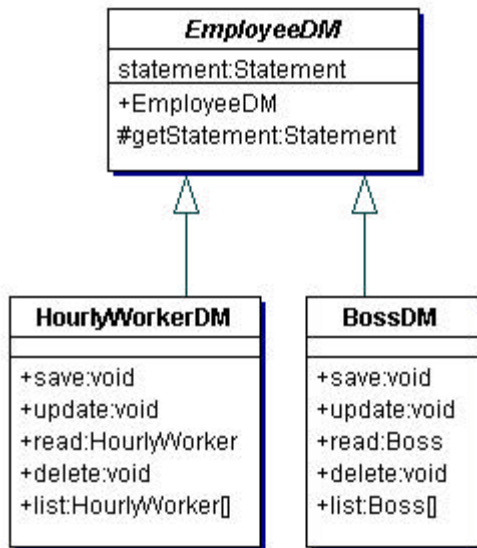
A class called TestEmployee in the test package has been written to test the problem domain classes (hr package).

The data management classes (dm package) for the HR system have been designed. Your task is to code the methods in the data management classes. You will be provided with the basic class and method shells. You will have to provide the code for each method.

You will be using Microsoft Access as your database and will be provided with a created access database. A test database with a small amount of data has been provided for you.

This database is called HumanResources. The path to the database will be given to you during your instructions.

The class diagram of the dm package is provided below:



You must code the methods in the data management package. You must also code a test bed that will be used to test each method you code. Every method in the dm package must be tested.

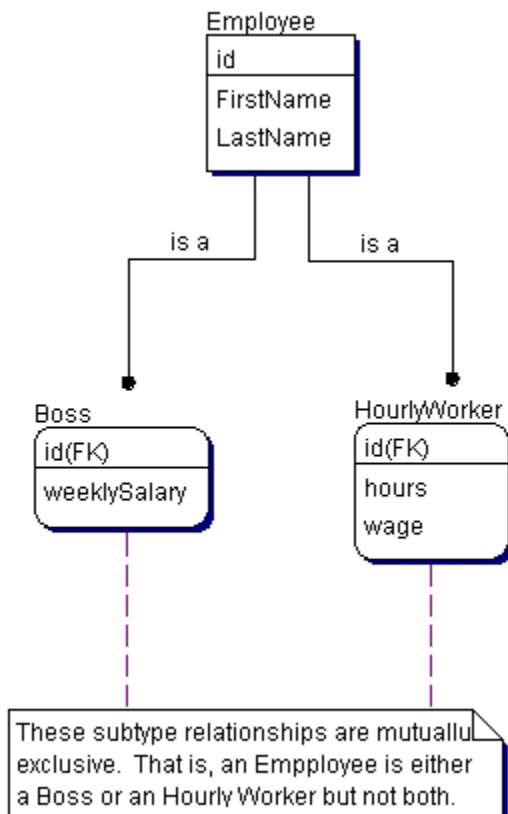
You will need to use Java Database Connectivity (JDBC) to do this. The work needed to connect to the database has been done for you. All you need to use is the getStatement method provided by the EmployeeDM class.

The database design is shown on the next page. Note that the database is completely normalized. The employee name is stored in the Employee table. The salary data is stored in the subtype tables. There is a one-to-one relationship between the class design and the entity-types in the ERD (Entity Relationship Diagram describing the database structure).

The list method should return a sorted array of employee (Boss and HourlyWorker for each respective class) reference variables (handles) sorted by employee last and then first name.

SQLException's should not be handled inside the data access methods but should be rethrown to the calling routine.

When you write your test bed be sure to indicate the class and the method you are testing. The output of your test should be displayed on a GUI widget (you can use something similar to the TestEmployee class).



Hints:

This is to be a client server application. Do keep the connection to the database open when you are not using the database.

You may find it useful to add additional methods and/or classes to the design to reduce code redundancy. This is permissible.