CSE3421 winter 2008

Assignment #1: Due Feb 19, 2008, 3 pm.

Weight 4%

In this assignment you are given an ER diagram (ERD), found in Appendix A, and you are requested to:

(task 1.) Convert an ERD to tables, without using SQL.

(task 2.) Create tables using SQL. Your SQL statements should represent as many as possible (all, if possible) of the constraints that are represented in the ERD (such as key constraints, participation, etc).

(task 3.) populate the created tables with appropriate data.

This assignment should be completed individually, i.e., not in groups of students.

Details:

1. For task 1, you can just type the schemas of the tables in a text file, named `schemas.txt`. For the types of the fields, you do not need to use genuine SQL types syntax, but feel free to do so if you wish.
2. For task 2, you should use actual SQL syntax (create table …) and create the tables in DB2. Keep your SQL "create table" statements in a file named `createTables.sql`. Use the createTables.sql file and create the tables in your database. A sample createTables.sql file can be found in Appendix B. (note, the tables created from this file have nothing to do with the context of this assignment and the file is provided here just as a sample).
3. For task 3, you should do the following:
    a. Create a Java program, `A11.java`, that will generate values which are appropriate domain values for the attributes of the tables that you have created in step 2. The design of this program is left to you. You can choose to generate random values, as long as they conform to the types of the domain values of the tables' attributes. The number of values that you will generate is left to you, but you should make your A11.java such that this number can be easily changed (e.g. counter in a loop).
    b. Run your A11.java program and save your data values in file(s) as you see fit.
    c. Create a second Java program, `A12.java`, that will read your generated values that have been saved and stored in step 3.b and create appropriate SQL statements (insert into …) that are capable to insert the values into the appropriate tables of your database. Save those SQL statements into a file named `insertData.sql`. A sample createTables.sql file can be found in Appendix C. (note, the contents of this file have nothing to do with the context of this assignment and the file is provided here just as a sample).
    d. Use your insertData.sql file and populate your database.

What to submit

Hand in the following items:

1. A **hardcopy** of your schemas.txt file (created for task 1).
2. A **hardcopy** of the `createTables.sql` file containing the SQL queries that you created for task 2.
3. A **hardcopy** of the `insertData.sql` file containing the insert SQL statements that you created for task 3.
4. **Hardcopies** of screenshots that illustrate the workings of your assignment. These should include:
    a. A list of all the tables (schemas only) in DB2.
    b. Sample screenshots of some tables after they have been populated with data, in DB2.
    c. Sample sessions of running your assignment (for each task and/or combinations of the tasks, as you see fit).
    d. Display of the created files createTables.sql and insertData.sql.
    e. Screenshots of the process of compiling your A11.java and A12.java programs; and screen shots of the directory showing the .class flies after the compilation.
5. Electronic copies of all the above (*schemas.txt* file, *createTables.sql* file, *instertData.sql* file, and a file named *screenshots.doc* (MS Word format) which contains all the screenshots that you accumulated) as well as the files *A11.java* and *A12.java*.

How to submit your assignment.

- Please drop off your assignment (paper copy) in your section's CSE3421 drop-off box in the Computer Science Building (ground floor; across the Prism labs).

  Also, submit your A11.java, A12.java, createTables.sql, insertData.sql, schemas.txt and screenshots.doc files, using the submit command

```
submit 3421 a1 A11.java A12.java createTables.sql
insertData.sql schemas.txt screenshots.doc
```

What happens if I miss the deadline?

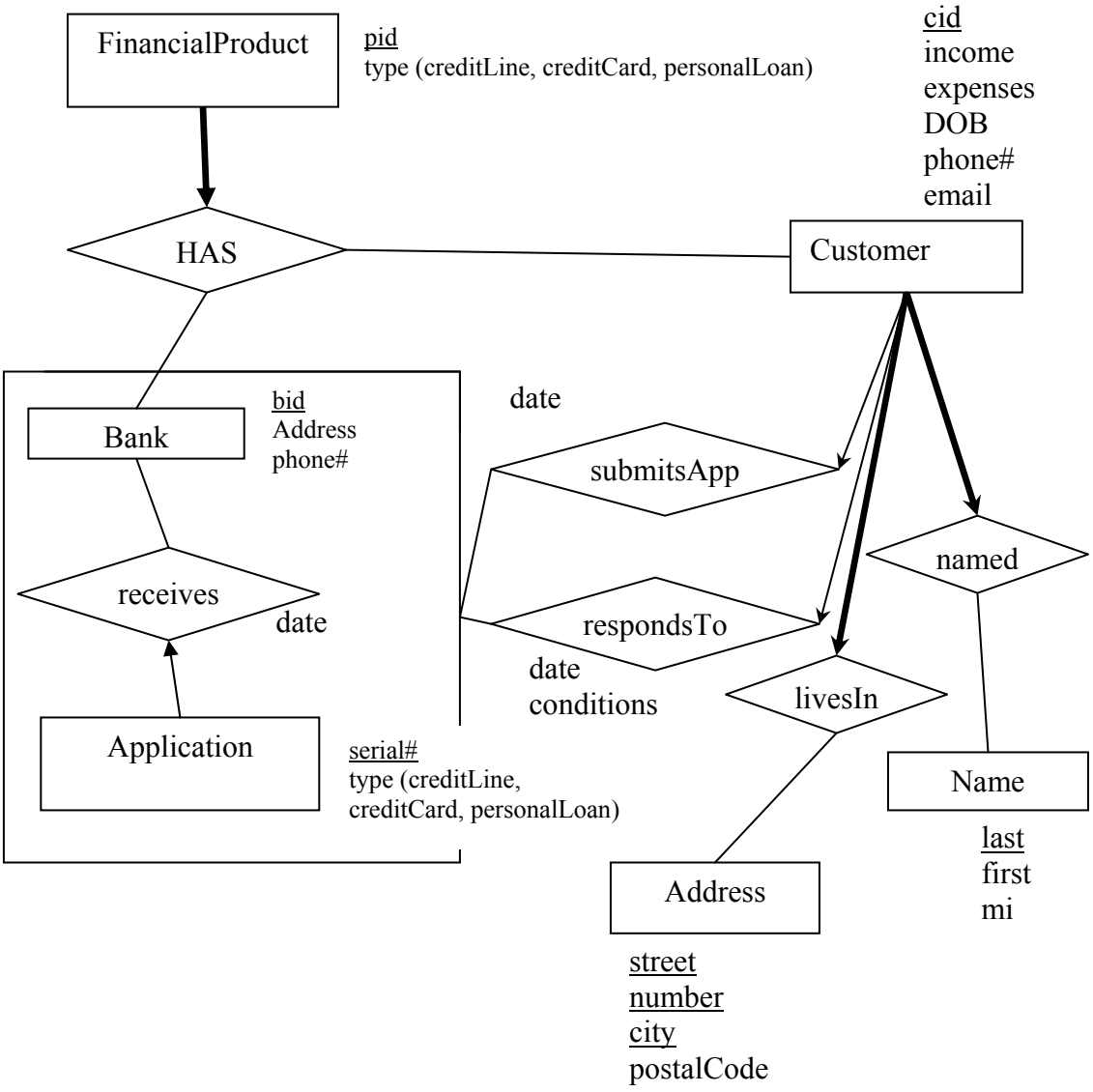
If you miss the due date/time, but hand it in within 24 hours of the deadline there will be a 20% deduction of your score for penalty (e.g. if your original score is 80%, you will end up getting 64%). After that, no late assignment will be accepted and a mark of 0 will be recorded.

Use the following cover page for submitting your hardcopies, filling out your student number etc as follows:

CSE3421 Winter 2008 Assignment 1 (cover page)

Student Number	
CS#	
Last Name	
First Name	
Email Address	

Appendix A
(ERD)



Notes:

- type (attribute of FinancialProduct) can only be one of creditLine, creditCard, personalLoan.
- For the types of the attributes, use your own judgement.

Appendix B
(sample createTables.sql file)

```
- Create 2 tables.

-- First connect to the database
   connect to c3421A;

-- the Employee1 entity
DROP TABLE Employee1;
CREATE TABLE Employee1 (
    eid CHAR (10) NOT NULL,
    address VARCHAR (50) NOT NULL,
    phone# CHAR (10),
    PRIMARY KEY (eid)
);

-- the Employee2 entity
DROP TABLE Employee2;
CREATE TABLE Employee2 (
    sin CHAR (9) NOT NULL,
    name VARCHAR (30),
    home_phone# CHAR (10),
    since DATE,
    PRIMARY KEY (sin)
);

list tables;
connect reset;
terminate;
```

Appendix C
(sample insertData.sql file)

```
-- First connect to the database
   connect to c3421A;

-- Customer entity
INSERT INTO Customer VALUES('cust_id000', 'cust_name 0', 'cust_address
0', 'cust_ph 0', 'cust_email 0');
INSERT INTO Customer VALUES('cust_id001', 'cust_name 1', 'cust_address
1', 'cust_ph 1', 'cust_email 1');
INSERT INTO Customer VALUES('cust_id002', 'cust_name 2', 'cust_address
2', 'cust_ph 2', 'cust_email 2');

-- Employee1 entity
INSERT INTO Employee1 VALUES('1234567890', '1 Main Street',
'1234567890');
INSERT INTO Employee1 VALUES('2345678901', '2 Main Street',
'2355669987');
INSERT INTO Employee1 VALUES('3456789012', '3 Main Street',
'5678547801');


connect reset;
terminate;
```