In this homework you are asked to write a Java application using JDBC to access a database. Your program should operate on the Student-Registration-Course schema given in homework 3. Your program should function as follows.

1. Establish a connection with the DBMS.

2. Set up three tables (Student, Registration, Course) from three data files (student.dat, registration.dat, and course.dat). Those files can be downloaded from Blackboard (Course Documents -> Oracle Database). For each of these files, the first line includes the names of the fields and the corresponding types. You should create the three tables according to these lines. The other lines contain data (records) which should be inserted into the corresponding tables. For example, the student.dat looks like the following:

```
SSN INTEGER, SNAME VARCHAR(20), GENDER VARCHAR(8), DEPARTMENT VARCHAR(20), AGE INTEGER
1001, 'Dolly', 'female', 'math', 22
1002, 'James', 'male', 'math', 21
1003, 'Duke', 'male', 'history', 23
1004, 'Henry', 'male', 'history', 19
...
```

The table student you set up from student.dat should look like:

<table>
<thead>
<tr>
<th>SSN</th>
<th>SNAME</th>
<th>GENDER</th>
<th>DEPARTMENT</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>Dolly</td>
<td>female</td>
<td>math</td>
<td>22</td>
</tr>
<tr>
<td>1002</td>
<td>James</td>
<td>male</td>
<td>math</td>
<td>21</td>
</tr>
<tr>
<td>1003</td>
<td>Duke</td>
<td>male</td>
<td>history</td>
<td>23</td>
</tr>
<tr>
<td>1004</td>
<td>Henry</td>
<td>male</td>
<td>history</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
3. After the tuples of each table have been inserted, your program should perform the following SQL queries.

4. First, your program should work for the following queries:
   (1) Find the SSNs and names of all students who took the course with course number (cnum) 401.
   (2) For each student, find the maximum score he/she ever got. Output the student’s SSN and the maximum score.

5. Next, your program should perform the following updates to the tables.
   (1) A student named Tom, who is in the Math Department, has transferred to the History Department. Update your student table accordingly.
   (2) Two new students have been added to the database. Their SSNs are 1031 and 1032, respectively. The former student’s name is Linda, female, age 21, who is in the History Department, and the latter student’s name is Darwin, male, age 20, who is in the Math Department. Update your student table.
   (3) The instructor of course number (cnum) 202 has decided to raise by 5 score of all students whose scores are less than 80 in that course. Update the registration table.
   (4) Student with SSN 1010 decides to cancel all his/her courses. Delete the corresponding information in the registration table.

6. Show the contents of the four tables after the above updates and have the contents printed. You should use SQL statements to access all data in these four tables.

7. Finally, your program should drop all three tables.

Compile your program using ”javac” and execute it using ”java” on bert/ernie. Your program name should be yourloginname.java (therefor the public class name should be yourloginname in your program), and turn it in to ”hw4”.

Deadline for electronic turning in is Dec. 2nd, 5PM, but if you make your final electronic turning in before Dec. 1st, 2PM, you will get extra 5% score of your total score.

Hand in your hard copy on Dec. 1 on class, or in TA’s office hour, or you can drop it in TA’s mail box in SEO 905. But the deadline to turn in hard copy is Dec. 2nd, 5PM.

(Note: Your program is not required to have a GUI. Please refer to the Help manual on JDBC on Blackboard.)