**Laboratory Exercise 5.1 - Creating and Using the University Database in Oracle**

1. Create the Student, Faculty, Class, and Enroll tables in the database as shown in Figure 5.2 in the textbook. You will find the DDL in the text file called *Fig\_5.1\_DDL&InsertsforUniversityExample.txt* stored in this directory.

Note: To help you see how the commands work, open both the text file and the SQL\*Plus window in Oracle. You will move back and forth between the open windows. You should highlight and copy the CREATE TABLE commands (one at a time) and paste them into SQL\*Plus at the SQL> prompt. You should see the message: *Table Created* after each statement is executed.

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2. Now insert the records into your tables. To do this, copy each INSERT command (one at a time) and paste them into SQL\*Plus at SQL> prompt. You should see the message: *1 row created* after each statement is executed.

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3. Design SQL queries for the following questions:

a. Find the names of all History majors.

**SELECT firstName, lastName**

**FROM student**

**WHERE major='History';**

b. Find the class number, schedule, and room for all classes that Smith of the History department teaches.

**SELECT classNumber, schedule, room**

**FROM class c**

**JOIN faculty f**

**ON c.facId=f.facId**

**WHERE f.name='Smith' AND f.department='History';**

c. Find the names of all students who have fewer than average number of credits.

**SELECT firstName, lastName**

**FROM student**

**WHERE credits < (SELECT AVG(credits) FROM student);**

d. Find the names of all the teachers that Ann Chin has, along with all her classes and midterm grades from each.

**SELECT f.name, c.classNumber, e.grade**

**FROM faculty f**

**JOIN class c**

**ON f.facId=c.facId**

**JOIN enroll e**

**ON c.classNumber=e.classNumber**

**JOIN student s**

**ON e.stuId=s.stuId**

**WHERE s.firstName='Ann' AND s.lastName='Chin';**

e. For each student, find the number of classes he or she is enrolled in.

**SELECT s.stuId, s.firstName, s.lastName, count(e.classNumber) AS total\_classes**

**FROM student s**

**LEFT JOIN enroll e**

**ON s.stuId=e.stuId**

**GROUP BY s.stuId;**

4. Execute the five queries in the database and show the results.

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