Computer Science Department  
Michigan State University  
CSE480 Database Systems  
Lab Week #2  

Note: Try to finish each section within the time indicated. However, if you cannot finish it by the time indicated, go to the next section and come back to it at the end. TA will go to the next section for any clarification or questions right after the time indicated. You may finish the lab off line if you cannot finish it within the lab period and show your work to TA in your next lab. But this should be an exception than a rule.

YOUR NAME:

1. (25 minutes)  
Draw ER diagram for the following entity types and include at least 10 relationship types of your own for these entity types in the ER diagram.

(a) Student(Sid, SSNo, StuName, CurAddress, LocalTel, PermAddress, PermTel, Sex, BDate, Gpa) PK: < Sid >

(b) Department(Did, DeptName, DeptAddress, Tel) PK: < Did >

(c) DegreeProgram(Pid, ProgName, ProgType, UnivReq, CollReq, DeptReq) PK: < Pid >

(d) ProbationalStudent(sid, StartSemester, EndSemester, GPA) PK: < sid >

(e) CourseDescription(Cno, Title, Credits, Description) PK: < Cno >

(f) CourseOffering(SeqId, SectionNo, Semester, Year) PK: < SeqId, SectionNo >
(g) TextBook(TextId, TextName, Publisher, ISBN) PK: <TextId>
(h) Faculty(FacName, FacSSNo, OfficeAddress, Tel) PK: <FacSSNo>

2. (20 minutes)
This week you will Run sql commands from a file.

Manual for Oracle SQL:
http://download-west.oracle.com/docs/cd/B10501_01/server.920/a96540/toc.htm

(a) Create a file, call it lab2.sql, using an editor such as vi-editor.
Insert the following sql commands into the file lab2.sql

```
drop table Student;
create table Student(
    Sid number(10) CONSTRAINT PK_Student PRIMARY KEY,
    StuName varchar2(30),
    LocalTel number(10));
```

```
insert into Student values(12, 'John Doe', 5171112222);
select * from Student;
insert into Student values(12, 'Mark Moore', 5172224444);
```

(note the second tuple has the same key value on purpose)

Now open another window and get into sqlplus.
run the file lab2.sql you just created in sqlplus as follows:
start lab2.sql

i. Why do you see the error message in the output?

ii. Give the name of the constraint that is being violated.

iii. Go back to the editor, correct the problem and run the file again.

(b) Go back to the editor and append the following to the file lab2.sql

```
Drop table StudentCourse
{PUT THE ABOVE LINE AT THE BEGINNING OF THE FILE}
```
Create table StudentCourse(
  sid number(10),
  cid number(8),
  Grade number(3,1),
CONSTRAINT PK_Student_Course PRIMARY KEY (sid, cid),
CONSTRAINT FK_sid_Student FOREIGN KEY (sid) REFERENCES Student(Sid));

insert into StudentCourse values(12, 54, 3.5);
insert into StudentCourse values(412, 54, 3.5);

Again run the file in sqlplus as follows:
start lab2.sql

i. Why do you see the error message in the output?

ii. Give the name of the constraint that is being violated.

iii. Correct the problem by inserting appropriate tuple in the Student table.

3. (40 minutes)
Now consider the ER digram that you created earlier in the class. Create a file of sql commands to create tables for the entity types (not the relationship types) in the ER diagram. Make your own domains for the attributes.