Roll Number _____

CS3400 Database Systems

SQL Lab Session (Group-3) - 21st Dec 2006

For the questions given below, write the corresponding SQL statements in part A. In part B, write the SQL statements after executing and modifying (if necessary) on SQL Server Management Studio. In part C, write down SQL statements after executing them on SQL Learning Suite. The primary keys for each of the relations are underlined.

Student (int StudentID, varchar(255) Name, char Gender, date DOB, varchar(255) Curriculum, varchar(25) Major, int Year_of_Joining)
Course (varchar(255) CourseID, varchar(255) CourseName, int Credit)
PreRequisite (varchar(255) CourseID, varchar(255) PreReqID)
CourseOffering (varchar(255) CID, varchar(25) Semester, int Year, varchar(255) Instructor)
GradeReport (int SID, varchar(255) CID, varchar(25) Sem, int Year, char(2) Grade)

The foreign key, primary key relationships:
PreRequisite (CourseID) references Course (CourseID)
PreRequisite (PreReqID) references Course (CourseID)
CourseOffering (CID) references Course (CourseID)
GradeReport (SID) references Student (StudentID)
GradeReport (CID) references Course (CourseID)
GradeReport (Sem) references CourseOffering (Semester)
GradeReport (Year) references CourseOffering (Year)

1. Retrieve the details (CourseName, Credit) of all those courses which were offered in 'Spring' semester such that its pre-requisite was offered in 'Monsoon' semester.

   Select Distinct C.CourseName, C.Credit
   From Course C, CourseOffering C1, CourseOffering C2, PreRequisite P
   Where C.CourseID = P.CourseID and C.CourseID = C1.CID and C1.Semester = 'Spring' and P.PreReqID = C2.CID and C2.Semester = 'Monsoon';

2. Update the credits of all those 4 credit courses to 5 credits, in which at most 50 students enrolled in 'Spring' 2005 and at least one student failed.

   Update Course C
   Set C.Credit = 5
   Where C.Credit = 4

```
and C.CourseID in (Select G1.CID From GradeReport G1
                   Where G1.Sem = 'Spring' and G1.Year = 2005
                   Group By G1.CID
                   Having Count(*) <= 50)
and C.CourseID in (Select G.CID From GradeReport G
                   Where G.Sem = 'Spring' and G.Year = 2005 and
                   G.Grade = 'F'
                   Group By G.CID
                   Having Count(*) >= 1);
```

For the SuperMarket Schema, answer the following:

Market(M_ID varchar(20) primary key, M_Name varchar(255), M_Location varchar(50), M_City varchar(50), M_State varchar(50))

Customer(C_ID varchar(20) Primary Key, C_Fname varchar(20), C_Lname varchar(20), C_Income_Range varchar(20), C_Gender varchar, C_City varchar(50), C_State varchar(50))

Item (I_ID varchar(20) primary key, I_Name varchar(255), I_Manufacturer varchar(50), I_Price money, I_Desc varchar(50))

Time(T_ID varchar(20) primary key, T_Day integer, T_Month varchar(20), T_Year integer)

Sales(I_ID varchar(20) references Item(I_ID), C_ID varchar(20) references Customer(C_ID), M_ID varchar(20) references Market(M_ID), T_ID varchar(20) references Time(T_ID), Qty integer, Primary key(I_ID,C_ID,M_ID,T_ID))

3. For each income range of the customers, find the average price of the items which they have purchased.

```
Select C.C_Income_Range, AVG(I.I_Price)
From Customer C, Item I, Sales S
Where C.C_ID = S.C_ID and I.I_ID = S.I_ID
Group By C.C_Income_Range;
```

4. Delete all those tuples from the table 'Item' where a) the items are purchased in the markets of 'Texas' state in the year 2000 by the customers who are not of this state, b) and of which at least 20 quantities were sold in total.

```
Delete From Item
Where I.I_ID in (Select S.I_ID
                 From Sales S, Time T, Market M, Customer C
                 Where M.M_ID = S.M_ID and T.T_ID = S.T_ID and
                 C.C_ID = S.C_ID and M.M_State = ‘Texas’ and
                 C.C_State != M.M_State and T.T_Year = 2000
                 Group By S.I_ID
                 Having Sum(S.Qty) >= 20);
```