CS 3743
Introduction to Database Systems
Project

In this project, you will design and implement a database application in stages. You will identify
an application in the real world, design a conceptual database scheme, specify it to a commercial
database management system, insert data, write interactive queries and update the database using
SQL, create constraints and triggers, write application programs using JAVA/JDBC and PL/SQL
and create a web interface for the database.

You can work on teams of two to three. Form your teams as soon as possible. All the team
members will get the same grade for the project. The project is divided into four stages. Each
stage has a separate due date. No late projects are accepted. You should complete each stage on
time.

The project consists of the following stages

3. Create, populate and query your database.
4. Database programming using PL/SQL, Pro*C/C++ or Java/JDBC

1 Conceptual Design: Due Monday, February 18

Identify a real world application. Your application should support multiple types of users and
multiple activities per user. Following is a list of application domains that can give you an idea.

- Movies: Maintain information on actors, directors, genres, playing times, movie theaters.
  You might have queries such as “Find movies directed by X” or “Find movies in which actor
  Y” appears. Check out the webpage http://www.imdb.com to get an idea of what can be
done.

- Apartments: Maintain information on apartments and their properties. You can provide
  an interface for offering apartments for rent or finding apartments. Check out the webpage
  http://www.rent.com to get an idea of what can be done.

Submit the following for the first stage.

1. Cover Page: Find a title for your project. Write the title of team and the team members on
   the cover page.

2. Description of the application: Describe the types of users and functions supported for each
   user. For example, consider a university domain. Types of users include students, faculty
and staff. Students can register for classes, view course information and their grades. Faculty has access to course list and assign grades to students. Staff at fee office can access financial information about students. Your application must be broad enough to support multiple types of users and wide range of activities.

3. *Queries:* List in english 10 nontrivial queries on your database.

4. *Potential data sources to populate your database:* Investigate how you can get data to populate your database. Using real world datasets are preferable since they correspond to real world database applications. SQL has a utility to load data from delimited text files to your database. Your data sources could be text files with attributes separated by some marker such as space or comma.