DBMS LAB (CS355)

Mini Project
Indian Institute of Technology, Patna
November 9, 2022
Submission Deadline: **Task-1: 6 PM, 9/11/2022; Task-2,3,4: EOD, 15/11/2022**

Instructions:

1. Marks will be deducted in case of plagiarism.
2. Appropriate comments (if necessary) are mandatory.
3. You need to submit a detailed report describing the steps for performing the given Task.

Goal: *The goal of this project is to provide a realistic experience in the conceptual design, logical design, implementation, operation, and maintenance of a small relational database.*

Application description: *The application needs to be developed for IIT Patna Campus Amenities Administration. The administration needs to keep track of many services for their users. The detailed specifications are not available, however there are some minimum points that you need to consider for this project.*

• *There are different kinds of service possibly based upon the type of amenity or facility we are referring to (such as services related to guest house, market shops, etc).*

- *Guest House Related Service: Such as handling room booking request, food booking, bill generation, staff duty scheduler, etc*
- *Market Shop Related Services: Such as maintaining records for shop keeprs, license period, extension period, monthly rent/electricity details, feedback/performance management, etc*

Project requirements:

Task 1. E-R Model

• Construct an E-R diagram representing the conceptual design of the database.
• At minimum you must include all the entity and relationship sets implied by the aforementioned description. You may go beyond the minimum.
• Be sure to identify primary keys, foreign keys, relationship cardinalities, etc.

Task 2. Relational Model
• After creating an initial relational design from your E-R design, refine it based on the principles of relational design we have studied in the course.
• Create the relations using MySQL database you used for earlier assignments.
• Create indices, constraints, triggers as appropriate.
• If you refine your design, you may discover flaws in the E-R design, go back and change it. Your final E-R design must be consistent with your relational design.

Task 3. Populate Relations
• Include enough data to make answers to your queries interesting and nontrivial. There is no need for overkill in this regard.
• You may write a procedure to generate input data.

Task 4. Sample Queries:
You should run a number of test queries to see that you have loaded your database in the way you intended. The queries listed below are those that the users may want to use frequently. You can plan to write function/procedures/triggers/queries to address the followings.

- Guest House related

o Monthly bookings for the guest house in different categories
o The total monthly expenditure for the guest house
o Generation of bills
o Availability of room
o Monthly food billing

- Market Shop related

o Current shop details of different areas of the campus
o Details of shop keepers and their security pass validity
o Reminders for expiring license agreement period
o Pending charges from each shop
o Summary of performances of each shop

Deliverable

You need to prepare a project documentation file as well as a video demonstration cum presentation of your project work. You need to record the presentation and share the link during submission. The demonstration (10-15 minutes) must include the followings

a) E-R diagram, plus any explanatory notes with a description
b) Relational schema with a description
c) Your data in the database. Just run select count(*) on each of your tables so that we can see how big they are. Export the data of each table in a csv file.
d) The code you wrote for each of the listed queries/procedures/functions/ index/triggers and the result from running the queries.
e) Except the above mentioned queries what are the other interesting queries you can run in your system

Files to be submitted:

1) Project documentation file (containing ER Diagram, All the descriptions, MYSQL queries, codes, etc): CS355_rollno1_rollno2.pdf
2) All supporting data files in csv format
3) A README.txt file for any additional details and Video demonstration/presentation link
4) All the files need to be submitted here: https://www.dropbox.com/request/YIAQdtFyxjnE3SVdTQxr