CSE4DBF 2016

Assignment1– Part 2 (7.5%)

Due date: 10.00am Wednesday, April 27th 2016

AIMS AND OBJECTIVES:

✓ to convert the ER/EER model into a relational data model;
✓ to implement a relational database system (using ORACLE12c);
✓ to apply Normalization techniques (Bottom-Up approach) on the user-defined forms;
✓ to compare top-down and bottom-up database design approaches.

This is an individual Assignment. You are not permitted to work as a group when writing this assignment.

Copying, Plagiarism: Plagiarism is the submission of somebody else's work in a manner that gives the impression that the work is your own. The Department of Computer Science and Information Technology treats plagiarism very seriously. When it is detected, penalties are strictly imposed.

No extensions will be given: Penalties are applied to late assignments (5% of total assignment mark given is deducted per day, accepted up to 5 days after the due date only). If there are circumstances that prevent the assignment being submitted on time, an application for special consideration may be made. See Student Handbook for details. Note that delays caused by computer downtime cannot be accepted as a valid reason for a late submission without penalty. Students must plan their work to allow for both scheduled and unscheduled downtime.

SUBMISSION GUIDELINES:

This assignment is to be submitted in hard-copy format to the relevant submission box on the first floor of the Beth Gleeson Building by 10:00 am Wednesday April 27th, 2016.

SUBMISSION CHECKLIST:

✓ The transformation steps from your EER Model to your final tables (Task 1); Make sure to show each step of the transformation, and the final transformation tables;
✓ The DDL implementation for the '**Getaway Holidays Reservation Database'** tables from Task 1 (create table statements), and the required insert statements (Task 2a and 2b respectively).
✓ Resulting BCNF tables as the normalization output of Appendix A, B, C and D in Assignment 1 Part 1 (Task 3).
✓ The comparison of the Top-Down and Bottom-Up database design approaches for this particular problem (200-300 words) (Task 4).

Students are referred to the Department of Computer Science and Information Technology's Handbook and policy documents with regard to plagiarism and assignment return, and also to the section of 'Academic Integrity' on the subject learning guide.

TASKS:

1. Transform the EER model (Appendix A) to Relational tables, making sure you show <u>**all**</u> the steps. The final set of tables should contain necessary information such as table names, attribute names, primary keys (<u>underlined</u>) and foreign keys (*in italics*).

   [40%]

2. a) Implement the tables in the ORACLE 12c Relational DBMS. When creating tables make sure you choose appropriate data types for the attributes and specify any null/not null or other constraints whenever applicable.

   b) Write one insert statement for each of your tables using realistic data. Make sure you take into consideration all the necessary constraints.

   [40%]

3. Apply **Normalization Techniques** (Bottom-Up approach) on Appendices A, B, C and D from Assignment 1 Part 1 to come up with BCNF tables.

   [15%]

4. Discuss the differences between the result of the top-down approach from question 1 above and the result of the bottom up approach from question 3 above. Provide some analysis on why they are similar or different for this particular problem.

   [5%]

APPENDIX A – EER Diagram