Database Systems – ISYS1001 2021 Semester 2 – Further Assessment

Mini Assignment Specification

Learning objectives
1. Apply the knowledge related to design, implement and use a relational database to solve a real world problem.
2. Reflect on the design and implementation decisions, identify challenges and suggest ways to improve based on modern database concepts.

Due date: 17/12/2021 8:00 am

1. Introduction

This mini assignment expect you to apply the knowledge you have gained in the subject to design, implement and query a real world database system. You will (a) design and implement a simple database, (b) fill it with sample data, query the database to get some meaningful information in effective manner, and(c) document your database design, implementation and query designs, results you have obtained and discuss your work.

2. Scenario

Film festivals around the world are a platform to showcase quality and popular films and appreciate the people in the film industry. There are many film festivals happening around the world. Cannes Film Festival is one example. Film festivals recognize the people in the industry with several categories of awards including actors, directors and technical people as well as the films itself. Assume you or your friends are interested in a particular film festival (one festival which would occur annually or bi-annually etc.) and wish to know about the location which the festival happen, dates, awards given in each year, who got awards, award winning film's details etc. and any other interesting things about the film festival.

3. Detailed description

Considering the given scenario, you are expected to do following tasks in this assignment:

1. Designing a database and the relational schema based on it: [20 marks]
   a. You will identify entities and attributes, relationships, multiplicity and participation constraints and design the ER diagram. The ER diagram should be drawn following the Chen's notation used in the lectures OR IE notation shown in the lecture slides.
   b. Then, you will decide on suitable data types and any attribute level constraints (such as NOT NULL). You have to define your attributes in a suitable tabular format with at least name of the attribute, selected data type, description of the attribute and any constraints on attribute values.
   c. Define the relational schema:
      You may do this iteratively, starting with first identify basic tables, attributes and then refining it to convert more complex relationships in the design.

All your tables should be in at least first normal form but if you have done the design and mapping correctly, your tables would be in third normal form.

You have to think about the constraints such as primary and foreign keys. You may add any other constraints deemed required also. Then you may improve the preliminary work by adding referential integrity constraints.

2. Implementing the database : [20 marks]
    a. Looking at the relational schema and the data description resulted from part 1 above, you will implement the database with suitable tables and constraints. *First, create a sample database with <suitable name>_<your studentID>, and implement all tables there.*
    b. Insert sample values to the database and demonstrate that the integrity constraints are met when entering data.
    NOTE: Some web links to obtain sample data relating to the given scenario are given below.

    Academy Awards Winners:

    https://www.kaggle.com/unanimad/the-oscar-award

    Oscar Aawrds:

    https://www.kaggle.com/unanimad/the-oscar-award

    Cannes Film Festival Historical Data

    https://en.wikipedia.org/wiki/Palme_d%27Or

    You may use above sources or any other suitable source to obtain sample data. You have to enter a reasonable amount of data only to the database so that the query results can be obtained in next sections. *Any data sources should be clearly mentioned and referenced in the report*. **Please note you are not expected to use large amount of data as in your main assignment done earlier.**

3. Designing and implementing queries and views [20 marks]

    When your database is up and running, now it is time to retrieve data to answer some reasonable queries. First, think yourself and derive some meaningful questions regarding the data of your database, which can be converted to SQL queries to get answers. Make sure you think about using a single table, several tables, obtaining data based on conditions, string manipulation etc.(there are many other aspects you can think about).

    Then, for each of your question, design and implement an appropriate SQL query to produce the required answer in effective manner.

    You should demonstrate that you can,
    Level1: (3 or more queries)
    Use basic SQL SELECT statements, with use of numeric data, date-time functions, string comparison and manipulation, and other related basic methods with suitable WHERE clauses.

Level 2: (3 or more queries)
Use joins and sub-queries, with GROUP BY, ORDER BY, aggregate functions and related clauses.

Level 3: Views
Design and implement views to use with the database (2 views)

You can re-use the SQL queries and approaches from the lectures and practicals but as the scenario is different, you cannot use them directly. Remember to cite and self-cite your sources, if any. If you submit work that you have already submitted for a previous assessment (in this unit or any other) you have to specifically state this.

4. Documentation

You need to document what you have done in each stage of the assessment so that another person can get a clear idea about what you have done. You are expected to produce only a report in this assessment.

1. Report on your database
   Your report should include sections on:
   a. Introduction
   b. Design of the database
        i. Explaining why you have selected the entities, relationships, data types etc.
        ii. ER diagram, relational schema and any other material you have produced in the design stage i.e. part 1 of the assignment
        iii. Any assumption you made during the design of the database.
   c. Implementation of the database and inserting data , data sources
   d. Design of queries and use of the database
        iv. Design and implementation of queries, sample outputs.
        v. Design and implementation of the views and the sample outputs.
   e. Short user guide on how your scripts are to be executed (1 page)
   f. Discussion of your work including challenges, limitation and future directions (ways to improve your work with other features you have not considered).

Include a suitable cover page indicating your name, ID, lab group and document title to your report. Your report would be around 10-12 pages.

5. What you will be submitting

Your submission will be done via Blackboard and the same assignment link as the previous (final) assignment would be used.

You should submit single zip file of all the work produced in this assessment to the **"Further Assessment submission**" link provided in the Further Assessment folder.

First, create a folder with name < YourFirstName><YourLastName>_<your student ID>. Then place all your work inside this folder. Example: *JohnWhite_12134567. Your report should be in PDF format.*

The folder should contain:

1. Your SQL/database programming files: You have to submit all your .sql files or any other file resulted in part 2 and 3. Make sure you submit all files with create statements, queries, views etc. Name your files in appropriate manner and they have to be referred in your user guide section correctly.
2. Your report
3. A signed and dated assignment cover sheet in PDF format. Assessment coversheet is available under Assessments page of Blackboard. You can sign a hard copy and scan it in or you can fill in a soft copy and digitally sign it.

Zip this folder and submit to the "Further Assessment submission" link provided in the Further Assessment folder. Make sure that your zip file contains what is required. Anything not included in your submission cannot be marked. It is your responsibility to make sure that your submission is complete and correct.

6. Marking rubric

Marks will be given out of 100.

Short viva/demonstration of your work	20 marks
Design and implementation of SQL / programming parts (Part 2and 3 the detailed description), based on the work you have submitted . This section get marks for use of scripts, use of suitable comments, readability of queries etc. also Only 5/100 marks will be allocated to data	40 marks
Report (40 marks)	40 marks **Design documents (20 marks) will be part of the report**

7. Requirement to pass the further assessment

You should score at least 40% of the further assessment to pass it.

Plagiarism is a serious offence. This assignment has many correct solutions so plagiarism will be easy for us to detect (and we will). For information about plagiarism, please refer to http://academicintegrity.curtin.edu.au

In the case of doubt, you may be asked to explain your code and the reason for choices that you have made as part of coding to the unit coordinator. A failure to adequately display knowledge required to have produced the code will most likely result in being formally accused of cheating. Finally, be sure to secure your code. If someone else gets access to your assignment for any reason (including because you left it on a lab machine, lost a USB drive containing the code or put it on a public repository) you will be held partially responsible for any plagiarism that results.

8. Due date and late submissions

You must submit the solution to this assignment by Friday 17th November 2021 8:00 a.m Perth Time

9. Clarifications and Amendments

This assignment specification may be clarified and/or amended at any time and any amendments will be informed via email.

10.   General instructions

- Think about the total marks allocation, time you would spend on each section and mark allocation for each section very carefully.
- All your SQL code/ programs should be commented to explain what each query/ section does and how the section works.
- Doing the design of the database on paper would be much easier than doing it in a computer screen. It will help you to "think aloud", make different decisions and then refine your diagrams in iterative manner. You can convert your ER diagram to a computer drawn diagram using MS Visio or another software if you wish, after refining it to make it better.

End of the Mini-assignment