INST0012 Database Theory and Practice

Assessed Exercise 1, 2020/21 Session: Database Specification and Design

This assignment counts as **50%** of the total course assessment.

Background

The objective of this assignment is to deliver a conceptual database model for a given scenario. In order to address the requirements of this assignment you will need to use techniques, software applications and tools which have been introduced and explored during the lecture videos and lab exercises in the first part of the module. You will need to use a diagramming application such as yED[1], draw.io[2] or similar, and a word processor. The detailed requirements are described below.

Submission Deadline : 3pm, Friday 19 February 2021
Return Deadline: 11pm, Friday 19 March 2021

Important Notice

This is an individual piece of coursework not a group work and you should not share and discuss your work with other peers or third parties. By submitting this piece of coursework you agree with the university regulations regarding plagiarism and fair academic practice.

This is an anonymised assignment, please do not include your name anywhere in your submission.

Submission Details

You must submit a single PDF document. Please check that the first page of your PDF document includes: (i) your student number (SRN - you will find this on your ID card), (ii) the module code and title: "INST0012 Database Theory and Practice", (iii) the lecturer's name: "Dr Rob Miller", and (iv) an indication that this is "Assessed Exercise 1". The name of the PDF file that you submit must begin with your student number (SRN - this can be found on your ID card) and the module code, in that order, without spaces - e.g. "123456_INST0012cw1.pdf".

Your submission should contain a conceptual model derived from the scenario described below, represented as an Enhanced Entity Relationship diagram (EER diagram – Chen notation). Your EER diagram must include sufficient information about entities, relationships, attributes and cardinalities as explained in the lab exercise. The scenario indicates the core parameters (attributes) that describe the participating entities and should be addressed by the design. You may introduce additional entity attributes that seem relevant to the solution. State any relevant features or constraints implied by the scenario that are not able to be represented in your diagram but that will have to be consisdered by users of and applications linked to the database, or in its design.

[1] https://www.yworks.com/products/yed-live
[2] https://www.draw.io/

Scenario

YogaLife is a lifestyle and fitness organisation that offers yoga courses to members and businesses. The organisation wants to set up a database for its members, participating businesses and instructors. The core aim is to record information about which members participated in which courses and which instructor delivered each course.

The organisation runs various courses at its various centres. Each centre has a unique name (e.g. "Chelsea Centre") and address (consider the address as atomic) and one or more rooms. Every room has a maximum capacity. Within a centre each room has a unique number, 1, 2, 3, etc.

People can register for open-to-all or exclusive-to-a-business courses at different centres, and automatically become members when they register for a course. Each course requires exactly one instructor, and an exclusive-to-a-business course additionally requires exactly one assistant. For each person, we want to store the first name, family name, and birth date. For each instructor, their single most relevant qualification is also recorded, and for each assistant their training certifications (e.g. “health and safety”) are recorded (an assistant may have more than one training certification). The model should allow information about members who have not registered for any courses yet, and instructors and assistants who have not delivered any courses yet.

Each course has a name (e.g. “Beginners”) and a unique code (e.g. the Beginners course running in July 2020 at the Chelsea Centre has code “Beg-Jul-2020-CC”). Courses consist of up to 10 one hour sessions (not all courses have the same number of sessions), all at the same centre. For each session, the date and starting hour should be recorded. For exclusive-to-a-business courses, the database should record which business booked the course. Two different sessions (for different courses) can start at the same time on the same day but must be in different rooms of a centre or at a different centres. Therefore, at a given start hour of a given day, at most one open-to-all or exclusive-to-a-business session can start in any given room of a centre.

Assessment Criteria	
Below (< 40%)	Failure to meet the criteria of the coursework
D (40% - 49%)	**A poor submission that does not address or very poorly addresses the coursework brief.** A conceptual diagram is created, but it is deficient in many respects and it does not capture the basics around entities, relationships, attributes and cardinalities.
C / PASS (50% - 59%)	**A basic submission which does address the coursework brief but contains flaws and serious imperfections.** A conceptual diagram is created containing reasonable and appropriate information, but is limited in scope. It does capture the basics around entities, relationships, attributes and cardinalities.
B / MERIT (60% - 69%)	**A well-conceived submission which addresses the coursework brief.** A conceptual diagram is created that demonstrates good understanding of the issues relating to the conceptual design and modelling of data. It does capture a good range of information around entities, relationships, attributes and cardinalities.
A / DISTINCTION (70% +)	**An excellent submission which addresses the coursework brief, showing both insight and attention to detail.** A thoughtful and justified EER or UML diagram that demonstrates excellent understanding of the issues relating to the conceptual design and modelling of data. It does capture the full breadth of information around entities, relationships, attributes and cardinalities.