

CSI2312 - Database I

Assignment 1 2016

Instructions.

This is an individual assignment and it is based on Chapters 1 and 2. Submit your answer via BlackBoard Learn, before the due date.

1 Database Management Systems (10 marks)

Consider the following relational schema about Kids (Campers) that register for Summer Camps in Adventures in Science in Engineering at uOttawa.

Camper(CName : string, Age : string, Email : string, tshirt : string, Fee : real)

Camp(CampID : int, CampTitle : string, EmpID : int, StartDate : date, Year : date)

Signup(CName : string, Name : string)

Mentor(EmpID : int, Name : string, EmploymentDate : date, Salary : currency)


The Database Management System (DBMS) provide, amongst others, the following five functions:

1. Uniform data administration,
2. Data independence,
3. Data integrity,
4. Concurrent access, and
5. Data security.

Explain, by using of your own examples against the database, exactly what each one of these five functions ensure.

2 Entity Relationship Diagrams (15 marks)

Consider the following description of the GoGoGreen electric scooter rental company that is based in Ontario. The headquarters is in Ottawa and GoGoGreen currently has ten branches throughout the province.

- Each branch has an inventory of electric scooters, all of which are recorded in a catalog.
- For each scooter, we record the unique registration number, the make (e.g. Suzuki), the model (e.g. Dolce Vita), the year of manufacturing (e.g. 2015), the rental price per hour (e.g. \$12.00 per hour), the main color (e.g. red) and the battery duration (e.g. 100 hours).
- A branch may have many scooters of the same make and model, but the registrations number is unique throughout the company. 
- Before renting a scooter from the company, a customer must first register as a member of a local branch. The data held on a member include her membership number, name, address, phone number and the date she first registered at the branch. We also record credit card details.
- Once registered, a member is free to rent a scooter for a duration from (minimum) 1 hour to (maximum) 48 hours.
- The data held on each scooter rental is the rental contract number, the date, the membership number, the registration number of the scooter, the daily rental price, as well as the time rented out and returned. A status attribute is used to indicate whether a scooter is available or not.
- For each branch we record the branch number, name, address and phone number.
- Each branch has a manager, who is responsible for the day to day running of the branch. A branch also has at least two additional staff members, who are full-time employees. For each staff member, we record her name, address and social insurance number.

Draw an EER diagram for the GoGoGreen database, using the description given above. Show **all your assumptions** clearly.