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University of Canterbury

COSC265 Assignment 2016

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Goal: After completing this assignment you should be able to design EER schemas.
Assessment: Worth 25%, due on 18.8.2016, 5pm
Drop-dead date: One week after due date. Penalty for late submission: 15%
Submit your solution via Learn.
This assignment is to be done individually. You should be aware of the University of Canterbury Academic Integrity Policy (http://www.canterbury.ac.nz/ucpolicy/?SearchBy=Keyword&Value=Academic+Integrity).

The task
You are chosen to design a database for the Student Volunteer Army. Below is a description of the data that needs to be recorded, maintained and accessed. Your submission should include the EER schema, and a short report. The report should clearly state any assumptions you make. If necessary, you can explain some components of your solution. You may also discuss any difficulties you faced in developing your EER schema. The report should not be longer than 500 words.

The requirements

You need to design a database that will support the operation of the Student Volunteer Army (SVA). The student volunteer army started with Facebook on 4th of September 2010. Over 2,500 students volunteered and cleared 65,000 tons of liquefaction resulting from the Christchurch earthquake. After the earthquake on 22.2.2011, the SVA helped clear over 360,000 tons of liquefaction in over 75,000 volunteer working hours. SVA's Facebook page had more than 26,000 followers after March 2011. SVA volunteers offered a wide-range of help from providing hot meals, clean water, guidance, professional assistance, and other services such as delivering chemical toilets, information pamphlets, laying sandbags, data entry and manning call centres.

Currently, the SVA has over 1,400 members and is the second largest club at the University of Canterbury. The majority of SVA members are UC students, but not all. The database stores the following information about SVA members: first name, last name, student number (if a UC student), gender, date of birth, address, mobile number, and email address.

SVA is run by the Executive Committee (EC), whose members are all UC students. This committee consists of the President, Vice President, Secretary, Treasurer, two Logistics Officers, two Events Managers, a Communications Manager, two Marketing Managers, a Webmaster, three Academic Volunteering Coordinators (two general and one for the Law school), two In-School Mentors, a Legacy Project Coordinator, and five Platoon Leaders. Each member of the SVA is assigned to a Platoon Leader, unless the person is member of the executive committee. For each EC member, the database should store: first name, last name, short biography, something unique about person, position in the committee, and mobile number.

SVA members can apply to be a member of the EC (if they are UC students). There is a deadline for applications every year. This year, applications need to be submitted by 31.7.2016. Some of the positions on the EC require special skills. For example, the Logistics Officer must have a NZ full driving licence, Marketing Managers must have experience with design software, and the Webmaster must have appropriate Web development experience.

In order to register a particular job, Christchurch residents can call a free phone number, send a text message or enter their request via a website. For each registered job, the database should store information about how the job was registered (free call number, text message or website), the name of the resident, description of help needed, address, preferred date and time. The Events Managers process the registered jobs and prioritise them. They also add additional information about jobs that are selected to be carried out (as events): the estimated number of volunteers needed and the number of hours per volunteer.

The SVA conducts a variety of events, some of which come from the community, and others are events suggested by the EC or SVA members. Events are classified into one of the following categories:

- **Muscle** (gardening, painting, cleaning etc.)
- **Dish it up** (e.g. feeding the homeless)
- **Green** (Sustaining, Diversifying, Mucking in and growing our future)
- **Outreach** (Reaching out, Raising funds, and securing our future)
- **Creativity** (beautifying, painting, etc.)
- **Other** (e.g. helping Red Cross to pack winter clothes, help in running Bunning Warehouse community BBQ)

The following details need to be stored for each event: event name, category, start date and time, end date and time, location (i.e. the meeting place), description, contact person (i.e. the member of SVA in charge of the event), and contact email address. For some events, there might be additional notes added (e.g. "*Bring your own drink bottle and warm comfy clothing*"). An event might be repeated several times; e.g. Bunning Warehouse community BBQs may be running on several weekends. Some events have reward(s) given to each volunteer by a particular partner (e.g. free Subway voucher provided by Subway Bush Inn). For each event, the event manager prepares the initial budget which needs to be approved by the Treasurer and the EC.

SVA members and people from the community can sign up for events (via the Web page or the SVA app). The information that needs to be stored from non-members of SVA assigned to a job are first name, last name and contact details (email address and mobile number).

The SVA has a number of partners, such as City Care, the University of Canterbury, Red Cross and Subway. Details of partner organisations are saved in the database, including the business/organization name, logo, information about the contact person from each organisation (first name, last name, email address and mobile number), and the organisation's office address. Some partners provide monetary donations, while others provide in-kind support, rewards for volunteers, or participate in the events (e.g., City Care might organize collection of green waste for Green events).

SVA publish news articles on their website which also need to be stored in the database. The information about each news article consists of its title, date posted, article URL, URL of image inserted in the article and the text of the article.

SVA accepts cash donations. Some people prefer to be anonymous donors, but some want to be informed of future SVA events after making a donation. For those donors, the database should store the following details: first name, last name, email address, physical address and mobile number.

SVA owns several vehicles and trailers, and the database needs to store information about them. Each vehicle/trailer has a plates number, and the database should store the date of the last WOF certificate. For a vehicle, the database should store the number of seats (in addition to the driver), and for trailers it is necessary to store the capacity. Vehicles and trailers may be booked for a particular event.

SVA also provides various scholarships for members in collaboration with partners, such as participating in the Outward Bound retreat. The database should store the name of the scholarship (e.g. Outward Bound), the name of the contact person, the number of scholarships available, the start and end dates, and any restrictions (e.g., the Outward Bound is available to people aged 18 to 24). A scholarship might be offered several times, and the database therefore needs to store information about a particular offering. Interested SVA members can apply for a particular scholarship by the specified deadline.

The University of Canterbury has recently introduced the Co-Curriculum record scheme, which formally recognizes students extracurricular and volunteer work, including volunteering for SVA. The SVA database therefore needs to store information about the events a particular student participated in.

Typical queries that the database should support involve the following:

- Find all volunteers who participated in Muscle events in 2016.
- Find all news articles posted between January 2016 and March 2016.
- Find all Green events in which City Council participated.

A few notes on marking

Your solution will be marked on several aspects:

- Appropriateness of constructs you use. In EER diagrams, often there are several ways of modelling the same data. However, some of these ways would be more appropriate than others, due to various factors, such as the semantics of the domain, the typical kinds of operations that will be performed on the database etc. Make sure you analyse the requirements properly.

- Make sure you use the correct EER notation and naming guidelines.

- Your solution does not need to be done on a computer, but needs to be readable.

- You are allowed to introduce additional assumptions. However, not every assumption is reasonable. Think carefully about any assumption you would like to add. You are welcome to discuss your assumptions with the lecturer/tutors.