COMP3311 19T3 Database Systems

Assignment 1
Data Modelling in ER

Last updated: **Monday 23rd September 11:08am**
Most recent changes are shown in red ... older changes are shown in brown.

Aims

The aims of this assignment are to:

- develop a data model from a specification
- describe the model via ER diagrams and text descriptions
- work collaboratively online via a Blog and a Wiki

Description

In this assignment, you need to work in groups online to develop a data model for a calendar application and express this model as a collection of ER diagrams and descriptive text.

This assignment is unusual in that you do not need to "submit" a file as your answer. Your work is assessed based on what you do online in your Discussion Group. The groups are open now and you can discuss in your group Blog and build your group Wiki until **11:59pm on Sunday 6th October**.

To access your Discussion Group:

- login to https://webcms3.cse.unsw.edu.au/COMP3311/19T3/
- click on "Groups" in the sidebar (under "Timetable")
- click on the group whose name is DG*nn*

If you don't see an Assignment 1 group, let me know ASAP.

Note that the Wikis are not yet attached to the Discussion Groups. Use the Blog to discuss things initially. By the time you have reached some decisions on parts of the design, the Wikis should be available.

Assessment

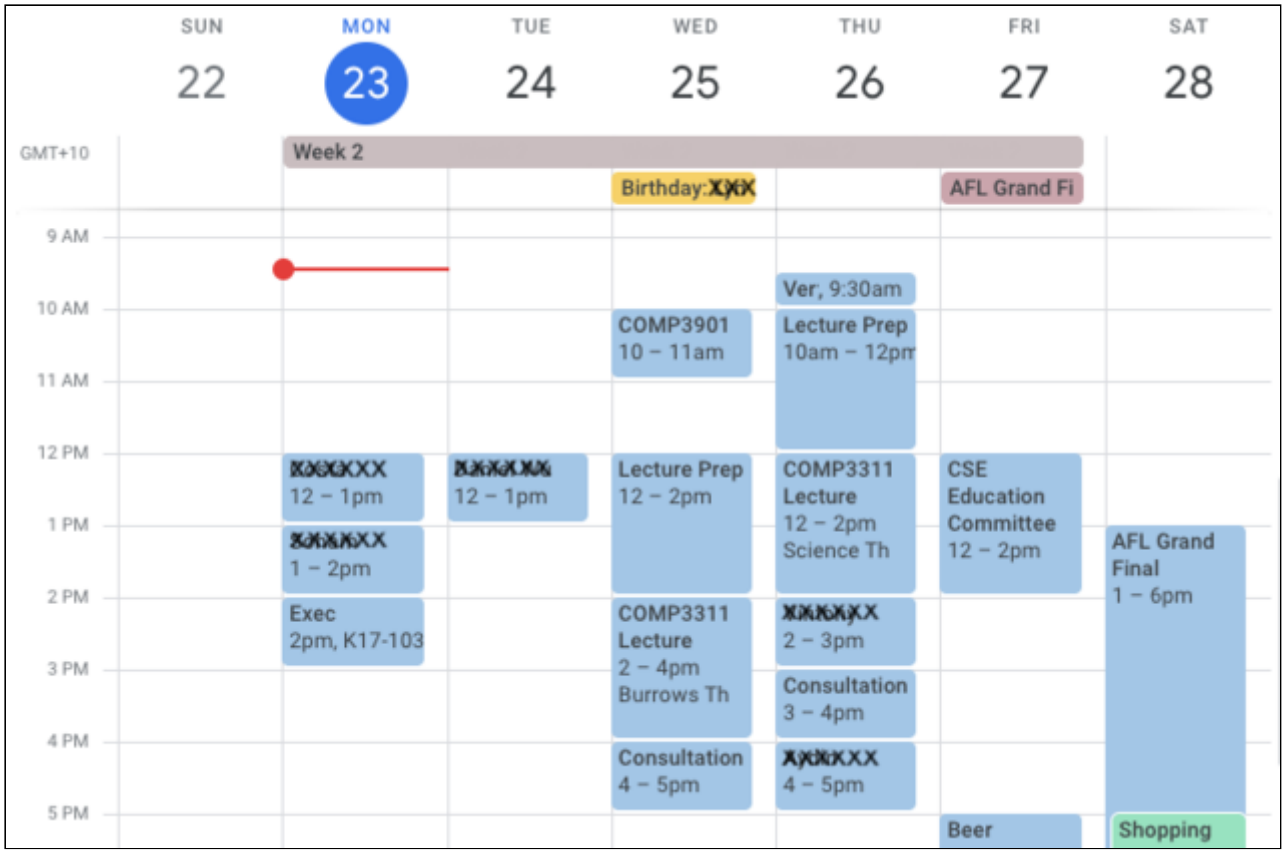
This assignment is worth a total of **5 marks**. You will be assessed according to the following:

- your effort in reading/assessing the discussion (**3 marks**)
  (assessed by monitoring your activity on the Blog and Wiki)
- the quality of your contributions to the discussion (**2 marks**)
  (assessed by other members of your discussion group)

Some notes on what I'm expecting from contributions, and how to assess others' contributions, are given below.

The Problem Domain

Online calendars are now essential for managing activities in most organisations. UNSW uses Outlook to provide a global calendar system; other online calendars include Google Calendar and Apple's Calendar. For example, here is my Google calendar for one week:



You can see in the above example that the calendar contains various kinds of events; some are one-offs (e.g. AFL Grand Final), while others are repeating (e.g. COMP3311 Lectures, Birthday). Events are also coloured, because they are drawn from different calendar sources and merged into this single view (e.g. Birthday comes from a calendar of birthdays, while the brown AFL Grand Final entry comes from a calendar of Australian public holidays).

Most calendar apps provide a similar set of functionalities. Our goal is to build the Ultimate Calendar App, and the initial stage is to design a data model that can support all of the functions that we want.

Requirements

To get you started with your design, here are some details on the kinds of data items that might need to be stored in the back-end of the calendar app:

Users

- individuals who use the calendar
- we need to know at least their name and email address
- they also have a username and password for authentication
- some (very few) users have administration privileges

Groups

- named collections of individuals
- useful as shorthand for scheduling events for specific groups

Events

- there are various kinds of events
  - associated with a particular day/date (e.g. birthday)
  - scheduled at a given time on a given day (e.g. a meeting)
  - recurring on a regular basis (e.g. a COMP3311 lecture)
- each event is owned by the individual user who creates it
- each event has a title and visibility (public, private)
  - a private event is shown simply as "Busy" in the interface
- an event may be associated with a location (where it will occur)
- an event may be associated with a set of individual users (invitees)

- an event may recur in a number of ways
  - on a particular day of the week (Mon,Tue,Wed,Thu,Fri,Sat,Sun)
  - weekly, every 2/3/4 weeks
  - monthly (on same date of month), every 2/3/.../11 months
  - on the first/second/third/last Xday of each month
  - for a fixed number of times (e.g. 10 times)
  - annually
- a recurring event will have a starting date and an ending date
- at specified times before each event an alarm event can be triggered
- there may be multiple alarms associated with an event
  (e.g. 15 mins before, 5 mins before, 1 minute before)
- an event can have an associated list of users who are invited
  - users on the list can be flagged as "Attending" or "Not Attending"

Calendars

- named collections of events (e.g. "John's Weekly Meetings/Classes")
- each event is attached to a specific calendar
- each calendar has accessibility restrictions (per user and default)
  (e.g. some users have read/write, some have read-only, some have no access)
- if a user has read permission on a calendar, they see private event titles instead of "Busy"
- each calendar is owned by a user; a user may own many calendars;
- users may subscribe to other peoples' calendars (if they can read them)
- each calendar has a colour (set by its owner); a subscriber may set a different colour for their own view

Our calendar supports users of various kinds. Regular users can be identified by their email address. They also have a name and a password. Admin users have additional capabilities beyond what a regular user has.

Online Discussion Groups

You have been allocated to a Discussion Group on Webcms3 with a name like `DG01`. Each Discussion Group has access to a Blog and a Wiki. Use the Blog for online discussions and the Wiki for describing your data model. The kinds of activities that you should be doing in the group:

- Team Bonding (Blog)
  - a place to get to know your other team members
  - also be a useful place to organise roles (see below)
  - post a welcome message and tell other group members how you might contribute (e.g. you know how to draw ER diagrams)
- Design Discusion (Blog)
  - where to sort out the details of what the system will provide
  - the discussion here provides the basis for the data model
  - post partial ER diagrams here if they clarify things
- Data Model (Wiki)
  - determine what entities/attributes exist and how they are related
  - build an ER diagram as the final outcome of the discussion
  - the ER diagram will likely go through several revisions as the discussion proceeds
  - add descriptive text to elaborate aspects of the model that may not be obvious in the ER diagram

How to contribute effectively to online collaboration

- do **not** post a complete ER diagram straight away and tell the rest of the group "Done!"; build the model collaboratively
- build the data model incrementally; focus on working out one aspect before moving on to others
- make suggestions for decision decisions without being too dogmatic
- respect other people's contributions (e.g. "Yes, that's one possible approach, but have you considered ...")
- allow everyone to take a turn updating the Wiki

Don't hold too many offline meetings, as these will not be recorded towards your contribution. If you do hold an face-to-face meeting, nominate someone to write the "minutes" (i.e. who was there and what you worked out).

Once the design task is complete, I will set up a peer evaluation system where you can indicate how effectively each member of the group contributed to the development of the data model.

Have fun, *jas*