COSC265 EER Assignment

Game Distribution

1 Assignment Outline

This assignment focuses on the use of the EER model to design conceptual schema for various databases. You should complete your work with EER Tutor found at `https://ictg.cosc.canterbury.ac.nz:8005/`.

This assignment is worth 24% of the overall grade for COSC265. It is made up of two components, practice problems worth 8% and a larger problem to be submitted via Learn worth 16%. **Note that these two components are due at different times!**

1.1 Assessed Problems

We have selected three problems in EER-Tutor for you to complete:

- 23 Surveillance (2%)
- 29 Elections (2%)
- 53 Publications (4%)

Your solutions to these problems are due by 08/08/2020 at 5:00 pm.

Note: that you can only submit a solution to each problem once, and that no feedback is given at the point of submission.

1.2 Large Problem

The requirements of large problem are outlined in the section below.

This large problem is due on 21/08/2020 at 5:00 pm. Submissions will be accepted for a week beyond this time, but a deduction of 15 marks will be made to your final grade. (So if you got 80 of the 100 marks available, you would receive a final score of 65.) Submissions beyond this time will not be accepted.

It is required that you prepare your final submission using EER-Tutor, using the free hand mode (question 99). It is a good idea to develop your initial solution on paper. You must also generate a report. This is a simple document that should list the set of assumptions that you are making about the mini-world that you are modelling. *Note that assumptions should not just be restatements of the requirements, or be obvious consequences of the requirements.* You should aim to limit your report to approximately 500 words — exceeding this limit should be done with care!

You can submit your solution via Learn nearer to the due date. Your schema should be a `.png` image, and your report a `.pdf` document. Both should clearly display your full name and student ID.

2 Requirements

Introduction

We are going to model a small platform for publishing and buying games. The goal of the platform is to make it easy for people to buy and share games, thus discouraging piracy. Having a platform for game distribution means that smaller game development firms can more easily distribute their games.

Users

- Users have a unique username and email and a preferred language.
  The user secures their account using a password that is at least 8 characters long and have at least one number and one non-alphanumeric character.
- A user must authenticate their email account before they are allowed to use the new account.
- Users accounts can be one of two types, a customer account, or a publisher account:
  - Customer accounts have the name of that person. The person has a date of birth.
  - A customer will have at least one credit card on record. This is how they pay for games. A credit card has a credit card number, the name of the holder of the card, an expiry date, and a card security number as well as a card type, e.g. Visa, Master Card, ...
  - Please note that up to two people can share the same credit card account(unique). In that case, each person will have their own card: the card number, expiry date and the security code is the same on both cards, but the name of the holder must be different.
  - Publisher accounts have the name of the business that uses that account. They also provide the bank account number where the money from sales made on the platform are deposited.

Games

- Publisher users can publish games. A game will have a unique number, a name, and a date published as well as the current price to buy a licence of the game.
- Each game has at least one executable. Each executable is identified by a version number and the operating system that that it works on. It will also have a change log that states what improvements have been made and the location in the system the file(s) can be found.
- Customer users can then buy licences of a game using a credit card. Each licence is identified by the game they want to buy, and a random sequence of numbers. The date the licence is purchase is also recorded. It also records the price paid for the licence as as the price can be changed by the publisher.
- A customer can pay more to buy a licence that can be lent to different users.
- A licence by default is owned by the customer who purchased it, but they can also be gifted to another customer.

Sales Report

- Publisher users need reports on the how the licences are selling.
- They should be able to determine how many games licenses they have sold, this can be individual sales, or monthly totals etc.

Friendship

- A customer user can send requests to become friends with another customer user.
- If this friend request is accepted then:
  - They can gift game licences to each other.
  - They can lend game licences, if the game licence allows this.
  - When a customer lends their licence to another customer, this is for a set period of time. The start and end date need to be stored.
  - During this lending period the lender cannot use the game.

Chat Group

- Customers can form messaging groups to communicate.
- Any Customer can create a new chat group. They are the admin of this group, and they can appoint other customers as admins of the group.
- Any user in a group can add a new user to a larger group if they are already friends and the admin of the group approves the addition.
- Any user can leave a group except if they are the only admin in the group.
- A group can only be deleted if an admin performs the action.
- Members of a chat group can post messages to the group. Each message has a text component and also optional attachments.
- Each message is identified by a number unique within that messaging group.
- A time stamp is also saved for each message.