LBSC 690: Information Technology
Mid-Term (Take Home) Exam

William Webber
CIS, University of Maryland

Spring semester, 2012

Do not look at Page 2 until you have read all of these instructions and are ready to begin the exam.

Exam Duration: Two hours, starting from the time you start reading the questions on the following pages. Please write your start time and completion times on your answer.

Length: This paper has 3 pages including this cover page.

Authorised Materials: Examinees may use any online or offline resources, including lecture notes.

Internet Access: Examinees will need to have a computer with internet access to complete the exam.

Date Released: The exam was released on March 14th, 2012, at 11:00am.

Date Due: The exam is to be submitted, by March 27th, 2012, at 5:30pm. Submission may be electronically, by email to `wew@umd.edu`; or it may be in hard copy. Late submissions will not be accepted.

No Clarifications: In order to maintain fairness between examinees, no clarification questions may be asked of the instructor. If you find anything unclear, please make reasonable assumptions and state your assumptions in your answer.

Academic Dishonesty: Discussing the exam with other examinees, or posting about it in a public forum, before the due date constitutes academic dishonesty.

Advice to Examinees: Do not get bogged down in a single question; allow time to attempt every question. A partial answer is better than no answer.

Question 1:

You are working at an online library, run by an organization incorporated in the US, whose website is at `www.youmelib.com`. Currently, the website is hosted at a data center in Dallas, Texas. The library director is thinking of moving the website to a data center in Munich, Germany, because she has received a cheaper quote for that location. However, she has a number of concerns about performing the move:

1. Will the domain name have to change to `www.youmelib.com.de`, since the web site is being moved to Germany?

2. Even if the domain name stays the same, how will web browsers be able to find the new site, since it is moving to a new physical location?

3. If a legal or regulatory issue comes up, which jurisdiction will the website be under: US, German/EU, or something else?

Write a few sentences addressing each of these questions. Where the issue is technical, give a brief description of the technical matters involved. Where the answer is unclear, say so, and mention some of the issues involved.

[40 marks in total]

Question 2:

Your aunt wants to set up an online dedication page to her cat. She has uploaded an image of the cat to `http://bit.ly/ycdA8w`. The cat is called "Mr. Spinks". The web page is to have the following features:

1. The title "My Best Friend" is to appear in the browser title bar

2. The cat's name is to appear in large letters on the top of the page

3. The cat's picture is to appear below the cat's name

4. The following three of the cat's virtues are to be listed, in a bullet-point list, below the cat's picture:
   - "Mr. Spinks doesn't judge me"
   - "Mr. Spinks doesn't tell stories about me"
   - "Mr. Spinks doesn't pretend to like my food"

5. The background color of the page is to be chartreuse

6. The cat's name is to be displayed in italic font

Create a web page that meets these requirements. Use CSS wherever appropriate. Copy the entire content of the web page and the CSS file (as source code) into your answer. Also, upload the page so that it displays at:

<div align="center"><code>http://terpconnect.umd.edu/~YOURID/mrspinks.html</code></div>

The exact URL above must be used, with `YOURID` replaced by your directory id.

[40 marks in total]

Question 3:

You and your friends decide to set up a mutual lending library for your personal book collections, and you have been asked to design the database for it. The database will list, for each group member, all the books that that group member owns. Then, when a group member borrows a book from another group member, the database will record who has borrowed the book and when it is due. Though only one person can borrow a book at any one time, group members want to keep a record of all the books that a person has borrowed over time.

Draw up a design for the database as an entity-relationship diagram. Indicate in the diagram the properties you wish each entity to have. Draw the relations between the entities, including their cardinality (one-to-one, one-to-many). Indicate the foreign key, primary key relations.

NOTE: *the drawing may be made (neatly) by hand. If you choose to submit by electronic copy, time taken to scan in the drawing is **not** included in exam time.*

[40 marks in total]

[120 MARKS FOR EXAM]

end of exam