LIS 533: Database Design for Information Management

Course Outline

Fall 2018

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Description

An introduction to core concepts, principles, and techniques of database design for information management, from user requirement analysis, to data and information modeling and querying.

Student Learning Outcomes

At the completion of this course, the students will be able to:

1. Explain features and strengths of database technology for information management and its relation to web technology.
2. Elaborate on the importance of discovering and analyzing users’ information management needs and requirements in developing database applications.
3. Explain key concepts of relational database model.
4. Apply database design methodologies and associated techniques to real world information management situations.
5. Use ER modeling in database design.
6. Use a relational DBMS to implement database designs.
7. Use SQL for database queries and data manipulation.
8. Understand normalization.

Content

- Database application lifecycle
- User requirement analysis and fact-finding techniques
- Entity-Relationship modeling
- Developing relational models
- Normalization
- Defining relational databases with phpmyadmin and SQL
- Manipulating database content using Query-By-Example and SQL
Class Meetings and Websites:

This is a face-to-face class that meets on Wednesdays from 1:00 pm – 3:50 pm in ED 106. This course has a website in eClass for submitting assignments and sharing reading materials.

Students will also use the phpmyadmin system (available from here: https://apps1-dev.educ.ualberta.ca/phpmyadmin/index.php) to create and access databases.

Students are welcome to make an appointment with Dr. Reyes Ayala at any time to discuss course-related questions.

Methods

A combination of lectures, in-class discussions and exercises, group work, and computer demonstrations will be used throughout this course.

Required Text


Assessment

Classwork: 20%
Homework: 40%
Term Project: 40%

Term Project

The term project is designed to give you an opportunity to apply database theory as well as design methodology and techniques to a real world situation. You will create a database application for an organization (e.g. a library, a movie rental company, a law firm, a driving school, or a company that specializes in IT training). You will research how such an organization typically operates, and identify the part of the organization for which you are going to create a database application. You will then design and create this database application.

Homework

These assignments provide you with opportunities to practice individual methods and techniques of database design and implementation.

Classwork

These are small, group assignments that will take place throughout the course. They are designed to test your understanding of the readings. Classwork is due by the end of the class session.
SLIS Grading Procedure

Grades reflect professional judgements of student achievement made by instructors. These judgements are based on a combination of absolute achievement and relative performance in class. The instructor should mark in terms of raw scores, rank the assignments in order of merit, and with due attention to the verbal descriptions of the various grades, assign an appropriate final letter grade. ([SLIS Grading Procedure](#))

Late Submission

Students are expected to submit assignments on time. The due dates are specified in eClass. If an extenuating circumstance such as a medically diagnosed illness or family emergency arises, which prevents you from submitting your assignments; you should contact the instructor as soon as possible before the due date. Late work without the permission of the instructor will receive a grade with a 10% penalty (or 10 points out of 100) per day after the due date. A student who is having trouble with assignments is strongly encouraged to contact the instructor as early as possible for personal advising.

Academic Integrity

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the [Code of Student Behaviour](#) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Inclusive Language & Equity

The Faculty of Education is committed to providing an environment of equality and respect for all people within the university community, and to educating faculty, staff, and students in developing teaching and learning contexts that are welcoming to all. The Faculty recommends that students and staff use inclusive language to create a classroom atmosphere in which students’ experiences and views are treated with equal respect and value in relation to their gender, racial background, sexual orientation, and ethnic background. Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, or mental or physical health are advised to discuss their needs with Specialized Support and Disability Services.

Recording of Lectures

Recording of lectures is permitted only with the prior written consent of the professor and all students in the classroom, or if recording is part of an approved accommodation plan.