MONASH University
Information Technology

FIT9019
Database technology

Unit Guide

Semester 2, 2011

Last updated: 22 Aug 2011

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FIT9019 Database technology - Semester 2, 2011

Database concepts and models, relational database management systems, semantic data modelling, entities and entity relationship modelling, normalisation, user requirements specification, database specification. Storage media and data organisation, logical data structures: linear and non-linear. Physical database implementation, integrity, backup, recovery, security. Structured Query Language, database administration. Current topics; distributed database, data warehousing, Object-oriented database.

Mode of Delivery

Caulfield (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Students will be expected to spend a total of 12 hours per week during semester on this unit as follows:

Lectures: 2 hours per week
Tutorials/Lab Sessions: 2 hours per week per tutorial

and up to an additional 8 hours in some weeks for completing lab and project work, private study and revision.

Unit Relationships

Prohibitions

CSE9002

Chief Examiner

Dr Campbell Wilson

Campus Lecturer

Caulfield

Manoj Kathpalia

Academic Overview

Learning Objectives

At the completion of this unit students will:

- understand the motivations behind the development of database management systems;
- appreciate the underlying theoretical basis of the relational database model and how this model may be implemented in practice;
- understand the differences between non-relational database models and the relational database mode;
- be able to apply logical and physical database design principles to a database implementation;
- be conversant with Structured Query Language (SQL);
- understand the processes involved in database administration, transaction management, concurrency control, restart and recovery.

Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:

a. engage in an internationalised world
b. exhibit cross-cultural competence
c. demonstrate ethical values

critical and creative scholars who:

a. produce innovative solutions to problems
b. apply research skills to a range of challenges
c. communicate perceptively and effectively

Assessment Summary

Examination (2 hours): 65%; In-semester assessment: 35%

Assessment Task	Value	Due Date
Assignment 1 (Data Modelling)	20%	3pm on September 09, 2011
Assignment 2 (SQL)	15%	3pm on October 14, 2011
Examination 1	65%	To be advised

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.

Feedback

Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Interviews

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through SETU, Student Evaluation of Teacher and Unit. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, and on student evaluations, see:
http://www.monash.edu.au/about/monash-directions/directions.html
http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this unit

If you wish to view how previous students rated this unit, please go to
https://emuapps.monash.edu.au/unitevaluations/index.jsp

Required Resources

Acrobat Reader is required to view study materials.

Freely available from:http://get.adobe.com/uk/reader/

Unit Schedule

Week	Activities	Assessment
0	Please register in Allocate+ for your tutorials	No formal assessment or activities are undertaken in week 0
1	Introduction	
2	Relational Data Model	
3	Database Design 1	
4	Database Design 2	
5	Database Design 3/SQL 1	
6	SQL 2	
7	SQL 3	Assignment 1 Due 3pm on September 09, 2011
8	Physical Database Design 1	
9	Physical Database Design 2	
10	Database Security, Concurrency & Recovery	
11	Advanced Database Topics	Assignment 2 Due 3pm on October 14, 2011
12	TBA	
	SWOT VAC	No formal assessment is undertaken during SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your MUSO (Blackboard or Moodle) learning system.

Assessment Requirements

Assessment Policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit

Assessment Tasks

Participation

- **Assessment task 1**

  Title:
  Assignment 1 (Data Modelling)
  Description:
  Students will be provided with a case study and will have to perform the Entity Relationship modelling and the normalisation process.
  Weighting:
  20%
  Criteria for assessment:
  1. Quality of the benefits of database approach to the management of data.
  2. Correctness and quality of database design. This should support the business requirements outlined in the case study.
  3. Correctness of the normalisation process.
  4. Correctness of the Database Design Language (DBDL) for the normalised relations.
  Due date:
  3pm on September 09, 2011

- **Assessment task 2**

  Title:
  Assignment 2 (SQL)
  Description:
  Students will be provided with a set of relations and will have to create the database using Oracle software and develop a set of SQL queries.
  Weighting:
  15%
  Criteria for assessment:
  1. Correctness of any changes made to the relations provided to accommodate the business requirements.
  2. Correctness of the data used to populate the tables.
  3. Correctness and quality of SQL commands to implement the queries identified. These will be assessed as to whether the output of the commands answers the business queries asked.

4. Use of any Oracle features with justification in the implementation.

Due date:

3pm on October 14, 2011

Examinations

- **Examination 1**

Weighting:

65%

Length:

2 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

None

Assignment submission

It is a University requirement (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at http://www.infotech.monash.edu.au/resources/student/forms/. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz).

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html.

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at: http://policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Plagiarism (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html)
- Assessment (http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-po
- Special Consideration (http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h
- Grading Scale (http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html)
- Discipline: Student Policy (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html)
- Academic Calendar and Semesters (http://www.monash.edu.au/students/key-dates/);
- Orientation and Transition (http://www.infotech.monash.edu.au/resources/student/orientation/); and
- Academic and Administrative Complaints and Grievances Policy (http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.
- Codes of Practice for Teaching and Learning (http://www.policy.monash.edu.au/policy-bank/academic/education/conduct/suppdocs/code-of-practice-tea

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at www.monash.edu.au/students The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to http://www.lib.monash.edu.au or the library tab in my.monash portal for more information. Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis

- Website: http://adm.monash.edu/sss/equity-diversity/disability-liaison/index.html;
- Telephone: 03 9905 5704 to book an appointment with a DLO;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus.

Recommended Reading

Connolly, T. and Begg, C., *Database Systems - A Practical Approach to Design, Implementation and Management (4th ed.)*, Addison-Wesley, 2005, ISBN -13 978-0-321-21025-8.
Elmasri, R. & Navathe, S.B. *Fundamentals of Database Systems (5th ed.)*, Addison-Wesley, 2007, ISBN-13: 978-0-321-36957-2.