

FIT5168
Object and semi-structured database

Unit Guide

Semester 1, 2010

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

Last updated: 22 Feb 2010

Table of Contents

<u>FIT5168 Object and semi-structured database - Semester 1, 2010</u>	1
<u>Chief Examiner:</u>	1
<u>Lecturer(s) / Leader(s):</u>	1
<u>Caulfield</u>	1
<u>Introduction</u>	2
<u>Unit synopsis</u>	2
<u>Learning outcomes</u>	2
<u>Contact hours</u>	2
<u>Workload</u>	2
<u>Unit relationships</u>	2
<u>Prerequisites</u>	2
<u>Teaching and learning method</u>	3
<u>Teaching approach</u>	3
<u>Timetable information</u>	3
<u>Tutorial allocation</u>	3
<u>Unit Schedule</u>	3
<u>Unit Resources</u>	5
<u>Prescribed text(s) and readings</u>	5
<u>Recommended text(s) and readings</u>	5
<u>Study resources</u>	5
<u>Assessment</u>	6
<u>Overview</u>	6
<u>Faculty assessment policy</u>	6
<u>Assignment tasks</u>	6
<u>Examination</u>	7
<u>Due dates and extensions</u>	7
<u>Late assignment</u>	7
<u>Return dates</u>	8
<u>Appendix</u>	9

FIT5168 Object and semi-structured database - Semester 1, 2010

Chief Examiner:

Dr Maria Indrawan

Senior Lecturer

Phone: +61 3 990 31916

Fax: +61 3 990 31077

Contact hours: Thursday 3-4, other times by appointment

Lecturer(s) / Leader(s):

Caulfield

Dr Maria Indrawan

Senior Lecturer

Phone: +61 3 990 31916

Fax: +61 3 990 31077

Contact hours: Thursday 4-5, Friday 2-3

Introduction

Welcome to FIT5168.

This 6 unit point unit is an elective to Master of Information Technology. The unit has been designed to extend students' knowledge of database technology and its application. Students need to be familiar with relational database concepts. The unit will introduce students to data management techniques related to storing and retrieving XML documents.

Unit synopsis

Management of semi-structured data. The unit looks at the limitation of current relational based DBMS in handling XML. Explore the concept of modelling XML using XML Schema and retrieving it using XSLT. Design issues in creating native XML database. Exploring the approaches taken by current relational DBMS in storing and retrieving XML-based data.

Learning outcomes

At the completion of this unit students will:

- have the knowledge of managing data that may not be appropriately modelled and implemented as relational model;
- be able to design data repository for XML documents;
- be able to apply appropriate technology to manage XML data;
- be able to use current DBMS to store and retrieve non-relational data such as XML and multimedia;
- appreciate the strength and weaknesses of several approaches such as object relational, native XML and object oriented DBMS in handling the XML and multimedia database.

Contact hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Workload commitments for this unit:

- two-hour lecture
- two-hour tutorial
- a minimum 6-8 hours of personal study including meeting time to complete group assignments.

Unit relationships

Prerequisites

Recommended knowledge: Knowledge of relational database.

Teaching and learning method

Teaching approach

The teaching of this unit will consist of lectures, tutorials, self-study and group work. The main concepts of the unit will be delivered during lectures. Practical exercises on the concepts will be carried out during tutorials. It is expected that students will attempt the tutorial exercises prior to attending the tutorial classes. The tutorial classes will be used to discuss problems encountered while completing the exercises or to discuss important issues that students may need to be aware of in completing the exercises.

From week 4, students will be allocated 30 minutes at the end of the tutorial class to perform group work related to the assignments. During this period, each group needs to report to the tutor on the progress made on the assignment work.

Although tutorials are not compulsory, it is the student's responsibility to attend and participate in tutorial discussion as tutorials are the preferred venue for clarification and queries on the topics. Unless students have good reasons to miss tutorial classes, no consultation outside tutorial classes will be provided in regards to the tutorial exercises and discussion.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, <http://mutts.monash.edu.au/MUTTS/>

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: <http://allocate.its.monash.edu.au/>

Unit Schedule

Week	Date*	Topic	Tutorials	Key dates
1	01/03/10	Introduction, XML	No Tutorials	
2	08/03/10	Data Model and Introduction to XML Schema	XML	
3	15/03/10	Advanced XML Schema	XML Schema	
4	22/03/10	XML Namespace, Document Engineering	XML Schema	
5	29/03/10	GOOD FRIDAY, no lecture	No Tutorials	
Mid semester break				
6	12/04/10	XPATH, Introduction to XSLT	Namespace, Document Engineering	
7	19/04/10	Advanced XSLT	XPATH, XSLT	Assignment 1 due, Friday 23rd April
8	26/04/10	XML in Relational DB (1)	XSLT	
9	03/05/10	XML in Relational DB (2)	XML in Relational DB	
10	10/05/10	Spatial Database		

FIT5168 Object and semi-structured database - Semester 1, 2010

			XML in Relational DB	
11	17/05/10	Database for Scientific Applications	Spatial Database	
12	24/05/10	Database of the Future?	Assignment 2 interview	Assignment 2 due, Friday 28th May
13	31/05/10	Review	No Tutorials	

*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

Unit Resources

Prescribed text(s) and readings

There is no prescribed text for this unit.

Recommended text(s) and readings

The recommended readings of this unit will be provided weekly through MUSO

Study resources

Study resources we will provide for your study are:

- Weekly detailed lecture notes outlining the learning objectives, discussion of the content, required readings and exercises;
- Weekly tutorial or laboratory tasks and exercises.
- Assignment specifications and sample solutions;
- This Unit Guide outlining the administrative information for the unit;
- The unit web site on MUSO, where resources outlined above will be made available.

Assessment

Overview

Examination: 50%; In-semester assessment: 50%

Faculty 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.

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website:

<http://www.infotech.monash.edu.au/resources/student/forms/>

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

• Assignment task 1

Title:

Designing XML database.

Description:

This assessment aims to evaluate students' understanding of different issues related to designing a good data storage for XML documents. Students will be asked to provide justifications of their design decisions in addition to the actual design of XML Schema.

Weighting:

30%

Due date:

Week 7, Friday 23th April

Remarks:

This is a group assignment. The group will consist of 2 students.

• Assignment task 2

Title:

Designing data storage and retrieving XML documents in Relational DB

Description:

This assessment aims to evaluate students' understanding on designing relational DB solution of managing XML documents. The assessment will include the design of several

queries to show their understanding of using XSLT and/or SQL to retrieve XML from Relational DB.

Weighting:

20%

Due date:

Week 12, Friday 28th May

Remarks:

Students will be interviewed during week 12 tutorial as part of the marking criteria of this assessment. This is a group assignment consists of 2 students.

Examination

- **Weighting:** 50%

Length: 2 hours

Type (open/closed book): Closed book

Remarks:

Quick reference guide on XML Schema and XSLT will be provided as part of the exam booklet.

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms: <http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html>

Late assignment

Assignments received after the due date will be subject to a penalty of 10% per day, including weekends. Assignments received later than one week (seven days) after the due date will not normally be accepted. In some cases, this period may be shorter if there is a need to release sample solutions.

This policy is strict because comments or guidance will be given on assignments as they are returned, and sample solutions may also be published and distributed, after assignment marking or with the returned assignment.

Return dates

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

Appendix

Please visit the following URL: <http://www.infotech.monash.edu.au/units/appendix.html> for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams