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FIT5168 Semi-structured data management - Semester 1, 2015

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FIT5168 Semi-structured data management - Semester 1, 2015

This unit investigates the management of semi-structured data. The unit explores the modelling of semi-structured data in XML using XML Schema and the transformation of such data using XSLT. It looks at methods for storing, querying and updating semi-structured data in both native-XML and object-relational database management systems and the design issues involved.

Mode of Delivery

Caulfield (Evening)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- Two hours of lectures
- One 2-hour laboratory

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

See also Unit timetable information

Unit Relationships

Prerequisites

Recommended knowledge: Knowledge of relational database.

Chief Examiner

Dr Mark Carman

Campus Lecturer

Caulfield

Chris Messom

Consultation hours: Thurs 12noon-2pm
Tutors

Caulfield

To be announced

Xu Ying

Consultation hours: TBA

Irvan Ang

Consultation hours: TBA

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 the Student Evaluation of Teaching and Units (SETU) survey. 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, see:

www.monash.edu.au/about/monash-directions/ and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

Based on previous student feedback this unit is well structured and no changes have been made for this semester.

If you wish to view how previous students rated this unit, please go to
Academic Overview

Learning Outcomes

At the completion of this unit students will:

- understand the differences between structured and semi-structured data;
- know how to manage data that is not be appropriately modelled by the relational model;
- be able to design data repositories for XML documents;
- be able to apply appropriate technology to manage and transform XML data;
- be able to use current DBMS to store, retrieve and update non-relational data;
- appreciate strengths and weaknesses of object-relational and native XML DBMS for handling XML.
Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>Data and Metadata</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Data Modelling and Document Types</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>XML Path Expressions using XPath</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Transforming XML with XSLT</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Advanced XSLT</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Document Engineering and XML Namespaces</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>XML Schema</td>
<td>Assignment 1 due Thursday 23 April 2015</td>
</tr>
<tr>
<td>8</td>
<td>Advanced XML Schema</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Querying XML</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Storing, Querying, and Updating XML in Databases</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Metadata Standards</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Guest Lecture</td>
<td>Assignment 2 due Friday 29 May 2015</td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC</td>
</tr>
</tbody>
</table>

*Unit Schedule details will be maintained and communicated to you via your learning system.

Teaching Approach

Lecture and tutorials or problem classes

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.

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.
Unit Schedule

Assessment Summary

Examination (2 hours): 60%; In-semester assessment: 40%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1 - Designing XSLT transformations</td>
<td>20%</td>
<td>Thursday 23 April 2015</td>
</tr>
<tr>
<td>Assignment 2 - Designing or modifying document types</td>
<td>20%</td>
<td>Friday 29 May 2015</td>
</tr>
<tr>
<td>Examination 1</td>
<td>60%</td>
<td>To be advised</td>
</tr>
</tbody>
</table>
Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

Academic Integrity - Please see resources and tutorials at
http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/

Assessment Tasks

Participation

• Assessment task 1

  Title: Assignment 1 - Designing XSLT transformations
  Description: The assessment tasks will include the design of several XSLT transformations.
  Weighting: 20%
  Criteria for assessment: This assessment aims to evaluate the students' abilities in using transformation languages to access and manipulate data from an XML repository.
  This is a group assignment. A group consists of 2 students. Each member of the group will be assigned the same mark. The mark will be based on the submitted assignment. For instances of group discord, the lecturer reserves the right to interview group members either collectively or individually.
  Due date: Thursday 23 April 2015

• Assessment task 2

  Title: Assignment 2 - Designing or modifying document types
  Description: There will be document types and essay components. Any existing document types will be provided in the assignment specification. The essay components should discuss the issues considered as well as the design choices made.
  Weighting: 20%
  Criteria for assessment: This assessment aims to evaluate the students' ability to design new document types, possibly as an extension of an existing document type.
  This is a group assignment. A group consists of 2 students. Each member of the group will be assigned the same mark. The mark will be based on the submitted assignment. For instances of group discord, the lecturer reserves the right to interview group members either collectively or individually.
  Due date:
Examinations

- Examination 1

  Weighting: 60%

  Length: 2 hours

  Type (open/closed book): Closed book

  Electronic devices allowed in the exam: None

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

Learning resources

Reading list

The recommended readings of this unit will be provided weekly through Moodle.

Monash Library Unit Reading List (if applicable to the unit)
http://readinglists.lib.monash.edu/index.html

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

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.monash.edu.au/exams/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.
Assignment submission

It is a University requirement 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 electronic submission). Please note that it is your responsibility to retain copies of your assessments.

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the learning system for this unit, which you can access via links in the my.monash portal.
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: www.policy.monash.edu.au/policy-bank/academic/education/index.html

Faculty resources and policies

Important student resources including Faculty policies are located at http://intranet.monash.edu.au/infotech/resources/students/

Graduate Attributes Policy

http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html

Student Charter


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 http://www.monash.edu.au/students. For Malaysia see http://www.monash.edu.my/Student-services, and for South Africa see http://www.monash.ac.za/current/.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in my.monash portal for more information. At Malaysia, visit the Library and Learning Commons at http://www.lib.monash.edu.my/. At South Africa visit http://www.lib.monash.ac.za/.

Disability Liaison Unit

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://www.monash.edu/equity-diversity/disability/index.html
- Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Commmunity Services at 03 55146018 at Malaysia
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Malaysia Campus