FIT5031
Mobile software agents

Unit Guide

Semester 2, 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: 13 Jul 2010
Table of Contents

FIT5031 Mobile software agents - Semester 2, 2010

Chief Examiner: ............................................................................................................................... 1
Lecturer(s) / Leader(s): .................................................................................................................... 1
Caulfield ............................................................................................................................................... 1

Unit synopsis ............................................................................................................................................... 2
Learning outcomes .................................................................................................................................... 2
Contact hours ........................................................................................................................................ 2
Unit relationships ......................................................................................................................................... 2

Prerequisites .................................................................................................................................... 2
Prohibitions ...................................................................................................................................... 2

Teaching and learning method .................................................................................................................... 3
Teaching approach .......................................................................................................................... 3
Timetable information ....................................................................................................................... 3
Tutorial allocation ............................................................................................................................. 3
Unit Schedule .................................................................................................................................. 3

Improvements to this unit ................................................................................................................. 4

Unit Resources ............................................................................................................................................ 5
Prescribed text(s) and readings ....................................................................................................... 5
Recommended text(s) and readings ................................................................................................ 5
Required software and/or hardware ................................................................................................. 5
Equipment and consumables required or provided ......................................................................... 5
Study resources ....................................................................................................................................... 5

Assessment ................................................................................................................................................. 6
Overview .......................................................................................................................................... 6
Faculty assessment policy ............................................................................................................... 6
Assignment tasks ..................................................................................................................................... 6
Due dates and extensions .................................................................................................................... 7
Late assignment ..................................................................................................................................... 8
Return dates .......................................................................................................................................... 8
Feedback ............................................................................................................................................. 8

Appendix ...................................................................................................................................................... 9
FIT5031 Mobile software agents - Semester 2, 2010

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Contact hours: 4 Hours

Lecturer(s) / Leader(s):

Caulfield

A/Prof Shonali Krishnaswamy

Contact hours: 4
**Unit synopsis**

This unit focuses theoretical concepts, applications and research issues of mobile software agents. Students will learn techniques to design and develop mobile agent applications. A number of different toolkits/development environments will be discussed and used for the practical component of the unit. The unit analyses mobile software agents technology with respect to their use in different application domains - focusing on pervasive applications, electronic commerce/web services and distributed data/network management. Advanced research issues/topics such as communication, coordination, security and trust for mobile agent systems will also be presented.

**Learning outcomes**

At the completion of this unit students will:

- be conversant with the principles and theoretical concepts of mobile software agents;
- appreciate models and approaches to building mobile agent systems;
- demonstrate knowledge of different mobile agent toolkits and development environments;
- utilise techniques for achieving mobile agent communication and coordination;
- understand security issues in mobile agent systems;
- select and apply appropriate tools for a particular application;
- foster critical and independent analysis of how mobile agents can be applied to distributed computing applications.

**Contact hours**

2 hrs lectures/wk, 2 hrs laboratories/wk

**Unit relationships**

**Prerequisites**

Recommended Knowledge: It is assumed that all students have a working knowledge of fundamental Java programming.

**Prohibitions**

CPE5010
Teaching and learning method

Teaching approach

The approach to teaching and learning include a weekly two-hour lecture and a two-hour (tutorial/laboratory). Additionally, each student should spend a minimum of 6-8 hours for personal study/assignments every week.

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Date*</th>
<th>Topic</th>
<th>Study guide</th>
<th>Key dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19/07/10</td>
<td>Introduction to Agents and Mobile Agents</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>26/07/10</td>
<td>Mobile Agent Applications</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>02/08/10</td>
<td>Mobile Agent Toolkits and Development</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Environments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>09/08/10</td>
<td>Mobile Agent Modelling</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>16/08/10</td>
<td>Mobile Agent Security</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>23/08/10</td>
<td>Software Agent Architectures</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>30/08/10</td>
<td>Multi Agent Architectures</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>06/09/10</td>
<td>Agent Communication Languages</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>13/09/10</td>
<td>Agent Coordination Protocols</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>20/09/10</td>
<td>Revision for Unit Test</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid semester break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>04/10/10</td>
<td>Unit Test</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11/10/10</td>
<td>Agent Oriented Software Engineering</td>
<td>Lecture and Tutorial Notes</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>18/10/10</td>
<td></td>
<td></td>
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*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.

**Improvements to this unit**

I am planning to do a MONQUEST Evaluation for this unit.
Unit Resources

Prescribed text(s) and readings

Recommended text(s) and readings


Required software and/or hardware

JADE Agent Tookit and Java

Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to \( n \) hours per week for use of a computer, including time for newsgroups/discussion groups.

Study resources

Study resources we will provide for your study are:

Lecture Notes

Tutorial Notes

Research Papers Provided by Lecturer
Assessment

Overview

Reading Component: 15%; Research paper and presentation: 50%; Project/practical assignment: 35%

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 submission and preparation requirements will be detailed in each assignment specification. 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.

• Assignment task 1

Title: Research & Presentation

Description: You will be given a simple scenario to implement using mobile software agents and traditional client server distributed computing. You will need to conduct systematic performance evaluation comparing the two approaches and document your experiments. You will be asked to demonstrate the implementation in the tutorials and you will be asked to explain your results.

Weighting: 40

Criteria for assessment: Individual assignment. You will need to have the two options implemented and functioning. You should be able to justify the results you get and explain them to the tutor. You should adequately document your results and experimental data.

Due date:
 Assignment task 2

Title: Practical Assignment

Description: You will be given a specification that you will need to implement using the JADE mobile agent toolkit. You will need to have sound knowledge of Java fundamentals in order to program the system. Your assessment will be based on a demonstration and interview.

Weighting: 40%

Criteria for assessment:
This is a group assignment. You will implement the system in groups of either two or one person(s). You will have a demonstration and interview in the week following the submission. At the interview/demo both team members will need to demonstrate complete familiarity with the system/code and will need to individually change parts of the system as required by the tutor. Inability to demonstrate understanding, familiarity and competent programming skills will result in loss of marks for the individual.

Due date:

 Assignment task 3

Title: Reading & Test Component

Description: The Reading Component will be assessed via a written test in the lecture. The material that the student will be asked questions from include all lecture notes apart from specific parts that will be pointed out in the course of the unit. No programming or code-oriented questions will be asked. The questions will be in the form of short answers and MCQs.

Weighting: 20%

Criteria for assessment:
A question may have many answers. You will be marked correct as long as a reasonable justification is provided for your choice/position. Attendance in class-room discussions and lectures and study of lecture notes is all that is required for this component.

Due date:
This will be conducted in the Lecture in Week 11 - Wed 13th Oct, 2010

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 which will be specified in the individual assignment specifications handed in Week 1.

Return dates

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

Feedback

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

Informal feedback on progress in labs/tutes

Graded assignments with comments

Test results and feedback
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