MONASH University
Information Technology

FIT5031
Mobile software agents

Unit Guide

Semester 1, 2012

Last updated: 28 Feb 2012

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FIT5031 Mobile software agents - Semester 1, 2012

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.

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:

For on-campus students:
Lectures: 2 hours per week
Tutorials/Lab Sessions: 2 hours per week
and up to an additional 8 hours per week for completing lab and project work, private study and revision.

Unit Relationships

Prohibitions

CPE5010

Prerequisites

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

Chief Examiner

Dr Grace Rumantir

Campus Lecturer

Caulfield

Grace Rumantir

Consultation hours: Monday 2-4pm

Tutors

Caulfield

Kutila Gunasekera

Consultation hours: Thursday 4-6pm

Academic Overview

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.

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

In-semester assessment: 50%; Examination (3 hours): 50%

Assessment Task	Value	Due Date
Unit Test	15%	18 April 2012 (in the lecture time slot)
Assignment - Practical Project	35%	Stage 1 during Week 10 tutorial, Stage 2 Code due Week 11 (16 May 2012), Stage 2 Demonstration during Week 12 tutorial
Examination 1	50%	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:

- Graded assignments with comments
- Interviews
- Test results and feedback

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

I am planning to do a MONQUEST Evaluation for 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

Please check with your lecturer before purchasing any Required Resources. Prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

JADE software toolkit. Students can download this free software from:

http://jade.tilab.com/

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction to Agents and Mobile Agents	
2	Mobile Agent Applications	
3	Mobile Agent Toolkits and Development Environments	
4	Mobile Agent Modelling	
5	Mobile Agent Security	
6	Software Agent Architectures	
7	Unit Test (in the lecture time slot - tute still on)	Unit Test (in Week 7 Lecture)
8	Multi Agent Architectures	
9	Anzac Day (no lecture, no tute)	
10	Agent Communication Languages	Assignment Stage 1 Interview (in tutorial time slot)
11	Agent Coordination Protocols	Assignment Stage 2 Code Submission
12	Agent Oriented Software Engineering	Assignment Demonstration/Interview (in tutorial time slot))
	SWOT VAC	No formal assessment is undertaken 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

Faculty Policy - Unit Assessment Hurdles
(http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu

Assessment Tasks

Participation

- **Assessment task 1**

Title:
Unit Test
Description:
The unit test will be conducted during the Week 7 lecture time slot. Week 7 tutorials will still run as per normal.
Weighting:
15%
Criteria for assessment:
Correct answers to questions and quality of solutions to problems which demonstrate understanding of the learning material.

Further details on the coverage and format of the unit test will made available on Moodle.
Due date:
18 April 2012 (in the lecture time slot)
Remarks:
The unit test will be conducted in Week 7 lecture time slot. Week 7 tutorial will still run.

- **Assessment task 2**

Title:
Assignment - Practical Project
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. This is a group assignment. You will implement the system in groups of two people. You will have a demonstration and interview in the week folllowing the submission.
Weighting:
35%
Criteria for assessment:
Stage 1: Group formation and understanding the assessment tasks (non assessable).

Stage 2: Submission (35%)

Students are to submit their code in Week 11. In Week 12 demonstration/interview 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:
Stage 1 during Week 10 tutorial, Stage 2 Code due Week 11 (16 May 2012), Stage 2 Demonstration during Week 12 tutorial

Examinations

- **Examination 1**

Weighting:
50%
Length:
3 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).

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the VLE site for this unit, which you can access via links in the my.monash portal.

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

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. At Sunway, visit the Library and Learning Commons at http://www.lib.monash.edu.my/. At South Africa visit http://www.lib.monash.ac.za/.

Academic support services may be available for students who have a disability or medical condition. Registration with the Disability Liaison Unit is required. Further information is available as follows:

- Website: http://monash.edu/equity-diversity/disability/index.html;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus
- Telephone: 03 9905 5704, or contact the Student Advisor, Student Commuity Services at 03 55146018 at Sunway