



MONASH University
Information Technology

FIT5151
Object-oriented business application development

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.

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FIT5151 Object-oriented business application development - Semester 1, 2010

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Introduction

Welcome to FIT5151 IT in Organizations for semester 1, 2010. This 6 point unit is one of the four units in the Business Application Development Professional Track of the Masters in Business Information Systems degree programs in the Faculty of IT. The unit has been designed to help you acquire the fundamental skills in software developments in the object-oriented environment for business applications. Java, as the most popular programming language to-date, will be used to meet this goal.

Unit synopsis

FIT5151 will aim at capitalising on what students have learned in [FIT9017 Foundations of programming](#) (or equivalent). The unit covers more in-depth material to enable students to build business applications that follow good Software Engineering principles of maintainability, reusability and expandability. The emphasis will be on helping students acquire solid object-oriented programming knowledge and skills for building business applications. Popular object-oriented design patterns will be introduced whenever appropriate to illustrate effective design process in building larger systems.

Learning outcomes

At the completion of this unit, students will have -

A knowledge and understanding of:

- how to produce well-run, well-tested and well-documented object-oriented software by following solid software engineering principles of maintainability, reusability and expandability;
- effective use of popular object-oriented design patterns in the design process of larger systems;
- how to effectively and efficiently develop object-oriented application solutions to business-related problem specifications.

Developed attitudes that enable them to:

- appreciate the responsibility of coming up with well-tested and documented programs;
- appreciate the need to maintain ethical conducts when programming by making sure the code used my program is their own or taken from a legitimate source with full acknowledgement.

Gained practical skills to:

- navigate around in an Integrated Development Environment in order to efficiently produce quality applications;
- develop good software testing strategies.

Demonstrated the communication skills necessary to:

- work in a team to come up with an integrated business software solution

explain their design and testing strategies in writing and in person through interviews.

Contact hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Off-campus students do not attend lecture and tutorial sessions. Hence however, off-campus should plan to spend time equivalent to the on-campus students doing a 6 credit point unit while working through the relevant resources and participating in discussion groups each week.

As a guideline, the workload commitments for an "on campus student" are:

- two-hour lecture and
- two-hour tutorial (or laboratory) (requiring advance preparation)
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.
- You will need to allocate up to 5 hours per week in some weeks, for use of a computer, including time for newsgroups/discussion groups.

Unit relationships

Prerequisites

FIT9017 or equivalent

Teaching and learning method

Teaching approach

The teaching and learning of the FIT5151 unit in off-campus mode is structured around the material and information provided on the unit web site. Most of the material will be the traditional manner around lectures and laboratory-based workshops and strongly supported by the prescribed text for the unit. So it is very important that you get a copy of the text. For the off-campus student, each week there will be reading set from the text. You will find the unit is not too difficult if you study consistently through the semester, and keep up with the reading and exercises.

Your learning is also supported by some additional resources on the MUSO-based web site. You will find a forum - which will be actively monitored by staff - that you can use to ask questions or follow up on any issues you have.

Off-Campus students will not be attending any lectures or tutorials. However, they will have access to the lecture slides and tutorials for each week. They will also be provided with additional resources to direct and lead the students through the learning for each week. As and when required, additional handouts or information notes may be provided to the DE students during the semester.

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 | References/Readings | Key dates |
|--------------------|----------|--|---|-----------|
| 1 | 01/03/10 | Essential Java skills: Programming Concepts. Classes and objects, methods, constructors, overloading, data types, message passing, control structures, scanner class | Murach's Java SE 6 Chapters 2,3 and 4 | |
| 2 | 08/03/10 | Object oriented Concepts: Defining and using classes, inheritance, polymorphism, interface/multiple interface | Murach's Java SE 6 Chapters 6,7 and 8 | |
| 3 | 15/03/10 | More Java essentials: arrays, Collections and generics, date and strings | Murach's Java SE Chapters 10, 11, 12 and 13 | |
| 4 | 22/03/10 | Exceptions, package and enumerations, File I/O | Murach's Java SE 6 Chapters 5, 13, 9 and 19 | |
| 5 | 29/03/10 | Testing and debugging | | |
| Mid semester break | | | | |

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|----|----------|---|---------------------------------------|------------------|
| 6 | 12/04/10 | Multi Threading: Use of threads, creating, manipulating and synchronising threads | Murach's Java SE 6 Chapters 14 | |
| 7 | 19/04/10 | Graphical User Interface: Swing, Control and layout managers | Murach's Java SE 6 Chapters 15 and 16 | Assignment 1 due |
| 8 | 26/04/10 | Graphical User Interface: Event handling, inner classes and data validation | Murach's Java SE 6 Chapter 17 | |
| 9 | 03/05/10 | Applets: Applet security issues, inheritance hierarchy, coding and deploying applets | Murach's Java SE 6 Chapter 18 | |
| 10 | 10/05/10 | Data base connectivity: organising relational databases, using SQL to work with database, Java database drivers | Murach's Java SE 6 Chapters 21 | |
| 11 | 17/05/10 | More on data base connectivity: Using Java to work with data in database, working with prepared statements, classes for working with databases, working with metadata | Murach's Java SE 6 Chapter 21 | Assignment 2 due |
| 12 | 24/05/10 | Recursion | | |
| 13 | 31/05/10 | Revision and Exam Preparation | | |

*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

Joel Murach and Andrea Steelman, *Murach's Java SE 6*, Mike Murach & Associates, Inc., California, 2007. ISBN-13: 978-1-890774-42-4 or ISBN-10: 1-890774-42-1.

The unit closely follows the structure and contents of this prescribed textbook. It is a must have textbook for the unit as you are to use it for tutorial exercises and examinable elaborations of the topics covered in the lectures.

Text books are available from the Monash University Book Shops. Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

Recommended text(s) and readings

Online books:

- Sun Microsystems, *The Java™ Tutorials*, <http://java.sun.com/docs/books/tutorial/>
Downloadable: <http://java.sun.com/docs/books/tutorial/information/download.html>
- Bruce Eckel, *Thinking in Java*, 3th edition, Prentice Hall, 2005. Downloadable: <http://mindview.net/Books/TIJ4>

Textbooks:

- Harvey Deitel and Paul Deitel, *Java How to Program*, 7th edition, Prentice Hall, 2007
- Lewis J., DePasquale P., and Chase J., *JAVA Foundations.*, Pearson Education, 2008, ISBN 0-321-48678-1
- Malik D.S., *Java Programming - From Analysis to Design.*, Thomson Learning 2006, ISBN 0619216085

Required software and/or hardware

You will need access to:

- Java SE 6 (download from www.sun.com)
- TextPad(download from www.textpad.com)
- Firefox or Internet Explorer

DE students should have access to the following Integrated Development Environments :

Jcreator - jcreator LE v4.0 is a powerful IDE (Integrated Development Environment) for Java and is strongly recommended. It can be downloaded from the Web Site:

<http://www.jcreator.com/>

You should download the freeware version. You have no need for the fuller facilities provided in JcreatorPro, and would have to pay for it as well.

If you wish, you may use other IDEs such as BlueJ, Eclipse but support through newsgroup will not be provided for using IDEs other than JCreator.

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 **12** 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:

- Weekly detailed lecture notes outlining the learning objectives, discussion of the content, required readings and exercises;
- Weekly tutorial or laboratory tasks and exercises with sample solutions provided one to two weeks later;
- Assignment specifications and sample solutions;
- Discussion groups;
- 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 (3 hours): 60%; In-semester assessment: 40%

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:

Assignment 1

Description:

This assignment requires you to demonstrate your understanding of basic software development in the object-oriented environment. The emphasis is on basic object-oriented paradigm and basic programming constructs.

Weighting:

20%

Due date:

See Assignment 1 Specifications for details

• Assignment task 2

Title:

Assignment 2

Description:

This assignment requires you to demonstrate your skill in developing a complete Java based business application.

Weighting:

20%

Due date:

See Assignment 2 Specifications for details

Examination

- **Weighting:** 60%
- **Length:** 3 hours
- **Type (open/closed book):** Closed book

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

If you believe that your assignment will be delayed because of circumstances beyond your control such as illness you should apply for an extension before the due date. Medical certificates or certification supporting your application may be required. Assignments submitted after the due date may incur a penalty for lateness. An assignment submitted more than seven days after the due date may be given a score of zero. If you anticipate being late then discuss the situation with your unit lecturer as early as possible; your unit lecturer will decide how many marks you will be penalised for each day your assignment is late, and whether or not any extension is warranted.

Assignments received after the due date will normally be subject to a penalty of 5% 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