MONASH University
Information Technology

FIT2081
Mobile application development

Unit Guide

Semester 1, 2015

Last updated: 17 Feb 2015

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FIT2081 Mobile application development - Semester 1, 2015

This unit introduces an industrial strength programming language (with supporting software technologies and standards) and object-oriented application development in the context of mobile application development for smartphones and tablets. The approach is strictly application driven. Students will learn the syntax and semantics of the chosen language and its supporting technologies and standards and object oriented design and coding techniques by analysing a sequence of carefully graded, finished applications. Students will also design and build their own applications.

Mode of Delivery

- Clayton (Day)
- Malaysia (Day)
- South Africa (Day)

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 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.

See also Unit timetable information

Unit Relationships

Prerequisites

FIT1040 or FIT1002 or equivalent

Chief Examiner

Mr Stephen Huxford

Campus Lecturer

Clayton

Stephen Huxford

Consultation hours: TBA Week 1

South Africa

To Be Advised

Malaysia

Jojo Wong

Tutors

Clayton

Stephen Huxford

Consultation hours: TBA Week 1

South Africa

To Be Advised

Malaysia

To Be Advised

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

Students feedback was by-and-large positive with many commenting on the accomplishment they felt in developing actual Android Apps that ran on their Android devices.

Main concerns were workload, emulator problems and lack of Android Studio on the lab machines.

This unit is calibrated to require 12 hours workload per week (as recommended by Monash). For this unit 12 hours means 12 hours because students must learn basic, then advanced Java skills before Android programming can be attempted. This is a steep, unavoidable learning curve. I will, as usual, make this quite clear to students in the first lectorial.

Android device emulators are well known to be slow and buggy. The latest versions are faster (but not fast) and more stable. We have also loaded the HAXM accelerator package to further speed up emulator performance. Further all labs have been scheduled in the Mac lab which allows students to plug their own real Android devices in without Windows driver complications thereby eleiminating the need for emulation.

Android studio has been loaded onto the lab machines for those students who insist on using it as their Android IDE. The unit will only support the IntelliJ IDE though. It should be noted the two IDEs are nearly identical.

If you wish to view how previous students rated this unit, please go to
https://emuapps.monash.edu.au/unitevaluations/index.jsp

Academic Overview

Learning Outcomes

On successful completion of this unit students should be able to:

- perform object oriented design and coding to create, test and debug non-trivial, working mobile applications that are maintainable and use the best practices of the development platform;
- upload these applications to an appropriate marketplace;
- describe the current software technologies and standards used in mobile application development;
- describe the current platform and ecosystem landscape in the mobile application space.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Unit Admin + Roadmap to Android, Transition to Java	Lab
2	Java - IDE, procedural control structures	Lab worth 2%, Quiz worth 2% (top 10 of each count)
3	Java - Modularity	Lab worth 2%, Quiz worth 2% (top 10 of each count)
4	Java - Classes	Lab worth 2%, Quiz worth 2% (top 10 of each count)
5	Additional Java topics required by Android - Inheritance + Interfaces + ...	Lab worth 2%, Quiz worth 2% (top 10 of each count)
6	Additional Java topics required by Android - Event Driven code, Inner Classes + ...	Lab worth 2%, Quiz worth 2% (top 10 of each count)
7	Android, IDE, App - Hello World	Lab worth 2%, Quiz worth 2% (top 10 of each count)
8	App - views, layouts, ...	Lab worth 2%, Quiz worth 2% (top 10 of each count)
9	App - lists, dynamic view creation, persistent data, alert dialogues, implicit intents, ...	Lab worth 2%, Quiz worth 2% (top 10 of each count)
10	App - assets, menus, handlers (runnables), simple animation, logcat, generic data structures, ...	Lab worth 2%, Quiz worth 2% (top 10 of each count)
11	App - multiple activities, explicit intents, database interaction, multi-threading, ...	Lab worth 2%, Quiz worth 2% (top 10 of each count)
12	Tidying up, Revision and Exam Preparation	Lab worth 2%, Quiz worth 2% (top 10 of each count)
	SWOT VAC	No formal assessment is undertaken in 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 learning system.

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach helps students to initially encounter information via lectorial preview of lecture slides, discuss, explore and be quizzed on the this information during subsequent lectorials, and put it into practice in a hands-on lab environment

Assessment Summary

Examination (3 hours): 60%; In-semester assessment: 40%

Assessment Task	Value	Due Date
10 Laboratory Assessments	Each of 10 laboratories will be worth 2 marks for a total of 20% of your final mark for the unit	Lab work for the week will be marked in that week's lab
10 Lectorial Quizzes	Each of 10 lectorial quizzes will be worth 2 marks for a total of 20% of your final mark for the unit	Quiz answers will be collected during the lectorial they are held in.
Examination 1	60%	To be advised

Assessment Requirements

Assessment Policy

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

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:
  10 Laboratory Assessments
  Description:
  During each of the 11 lab session students will be required to complete specified coding tasks. This work will be marked in the same laboratory session.

  Each laboratory is worth 2% of the final mark. The best 10 of the 11 laboratory marks will constitute the 20% non-exam mark for each student.
  Weighting:
  Each of 10 laboratories will be worth 2 marks for a total of 20% of your final mark for the unit
  Criteria for assessment:
  Students will be awarded marks for completing coding tasks according to the principles and styles enumerated in lectures. It is important to understand working code will NOT attract full marks in its own right. Students will be questioned on their code. Marks will only be given for code the student can clearly describe and syntactically and semantically interpret to the satisfaction of the marking tutor.
  Due date:
  Lab work for the week will be marked in that week's lab

- **Assessment task 2**

  Title:
  10 Lectorial Quizzes
  Description:
  The majority of each 2 hour lectorial will be given over to a lectorial quiz. The quiz will test a student's understanding of the previous week's lecture slides and associated lab work.

  During the quiz students can

  - ♦talk freely to any other student
  - ♦consult their smart devices (including consulting the unit's Moodle content)
  - ♦consult the lecturer

  A quiz will consist of 10 -20 questions and will require the student to have synthesized lecture slide and associated lab knowledge.

Each quiz is worth 2% of the final mark. The best 10 of the 11 quiz marks will constitute the 20% non-exam mark for each student.

Weighting:
Each of 10 lectorial quizzes will be worth 2 marks for a total of 20% of your final mark for the unit
Criteria for assessment:
A student's lab tutor will mark their quizzes and give feedback on their answers.

Quiz questions will be marked based on what the answers reveal about the the student's understanding of lecture slide material and the associated lab work. Evidence the student has thought about the target lecture slides and associated lab work and synthesised these two content sources will be sought and rewarded if found.
Due date:
Quiz answers will be collected during the lectorial they are held in.

Examinations

- **Examination 1**

Weighting:
60%
Length:
3 hours
Type (open/closed book):
Closed book
Hurdle requirements:
40% or more in both exam and non-exam assessment
Electronic devices allowed in the exam:
None

Learning resources

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
- Quiz results
- Solutions to tutes, labs and assignments

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

Assessment Requirements

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.

Resubmission of assignments

Lab work for each week is marked in the Lab for that same week.

Assignment submission

It is a University requirement (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla 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.

Required Resources

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

The labs will contain all required resources. You can also set up all the required resources on your own personal computer (OSX or Windows based).

All the required software can be downloaded for free (details in Week 1).

Prescribed text(s)

Limited copies of prescribed texts are available for you to borrow in the library.

P. Deitel et al. (2014). *Android How to Program*. (2nd Edition (1st Ed. is also OK)) Pearson (ISBN: 0-13-357092-4).

Recommended Resources

To save/backup your lab work a removable memory device is recommended.

In addition to the prescribed text the following resources will be used.

The Java tutorials presented at http://docs.oracle.com/javase/tutorial/

The many Android resources (especially documentation of the Android API) at http://developer.android.com/develop/index.html

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.h

Student Charter

www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html

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 Commuity 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

Other

In addition to the prescribed text the following resources will be used.

The Java tutorials presented at http://docs.oracle.com/javase/tutorial/

The many Android resources (especially documentation of the Android API)
at http://developer.android.com/develop/index.html