How to Design

CRC Cards Demo

FIT2099: SEMESTER 2 2018

Where were we?

- Discussed how to go about designing
- Introduced CRC cards as a design tool
- Promised to demonstrate

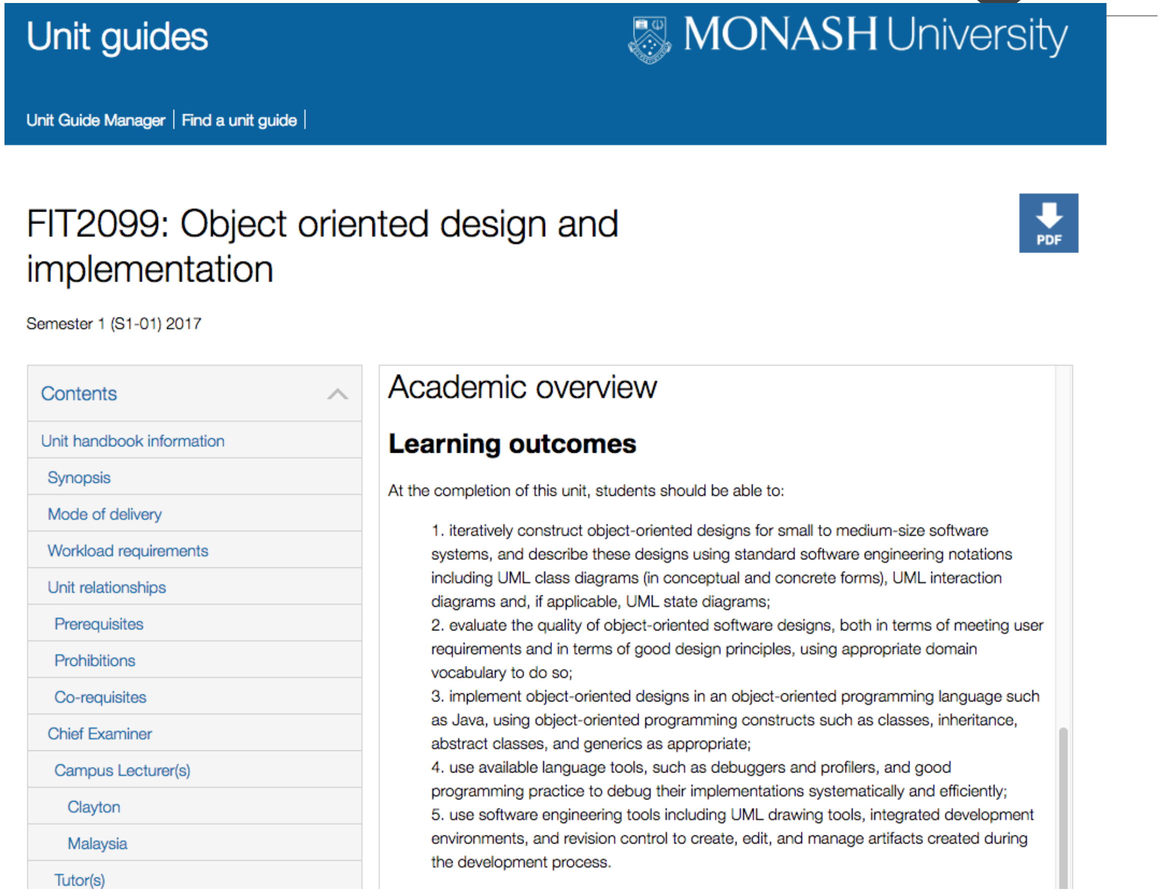
Demonstration: CRC card design

Staff have recorded a demonstration of using CRC cards to design an extension to a system

Context: MADAM marking tool

- Showed an example in earlier lectures
- The system used to mark assignments in several FIT units, and to send out marks to students

Context: Learning Outcomes



Unit guides

MONASH University

Unit Guide Manager | Find a unit guide |

FIT2099: Object oriented design and implementation

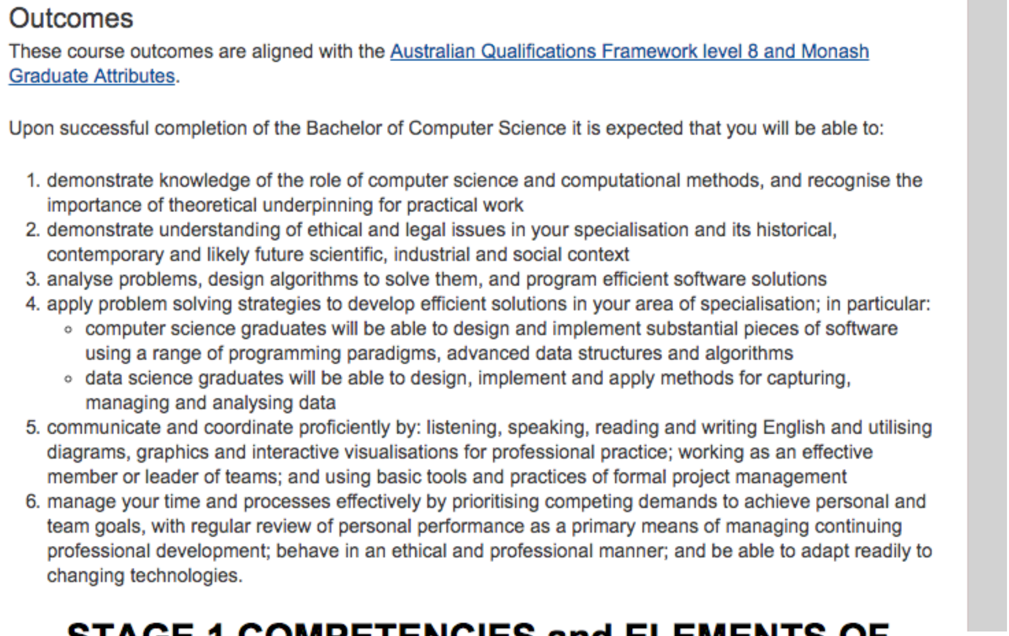
Semester 1 (S1-01) 2017

Academic overview

Learning outcomes

At the completion of this unit, students should be able to:

1. iteratively construct object-oriented designs for small to medium-size software systems, and describe these designs using standard software engineering notations including UML class diagrams (in conceptual and concrete forms), UML interaction diagrams and, if applicable, UML state diagrams;
2. evaluate the quality of object-oriented software designs, both in terms of meeting user requirements and in terms of good design principles, using appropriate domain vocabulary to do so;
3. implement object-oriented designs in an object-oriented programming language such as Java, using object-oriented programming constructs such as classes, inheritance, abstract classes, and generics as appropriate;
4. use available language tools, such as debuggers and profilers, and good programming practice to debug their implementations systematically and efficiently;
5. use software engineering tools including UML drawing tools, integrated development environments, and revision control to create, edit, and manage artifacts created during the development process.

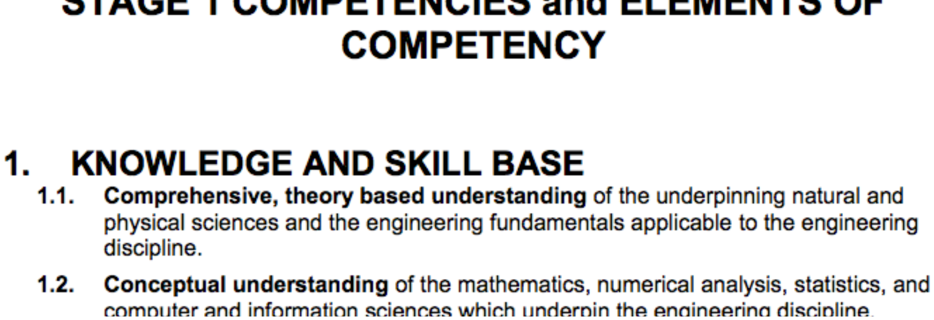


Outcomes

These course outcomes are aligned with the Australian Qualifications Framework level 8 and Monash Graduate Attributes.

Upon successful completion of the Bachelor of Computer Science it is expected that you will be able to:

1. demonstrate knowledge of the role of computer science and computational methods, and recognise the importance of theoretical underpinning for practical work
2. demonstrate understanding of ethical and legal issues in your specialisation and its historical, contemporary and likely future scientific, industrial and social context
3. analyse problems, design algorithms to solve them, and program efficient software solutions
4. apply problem solving strategies to develop efficient solutions in your area of specialisation; in particular:
   - computer science graduates will be able to design and implement substantial pieces of software using a range of programming paradigms, advanced data structures and algorithms
   - data science graduates will be able to design, implement and apply methods for capturing, managing and analysing data
5. communicate and coordinate proficiently by: listening, speaking, reading and writing English and utilising diagrams, graphics and interactive visualisations for professional practice; working as an effective member or leader of teams; and using basic tools and practices of formal project management
6. manage your time and processes effectively by prioritising competing demands to achieve personal and team goals, with regular review of personal performance as a primary means of managing continuing professional development; behave in an ethical and professional manner; and be able to adapt readily to changing technologies.



STAGE 1 COMPETENCIES and ELEMENTS OF COMPETENCY

1. KNOWLEDGE AND SKILL BASE

1.1. **Comprehensive, theory based understanding** of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.

1.2. **Conceptual understanding** of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.

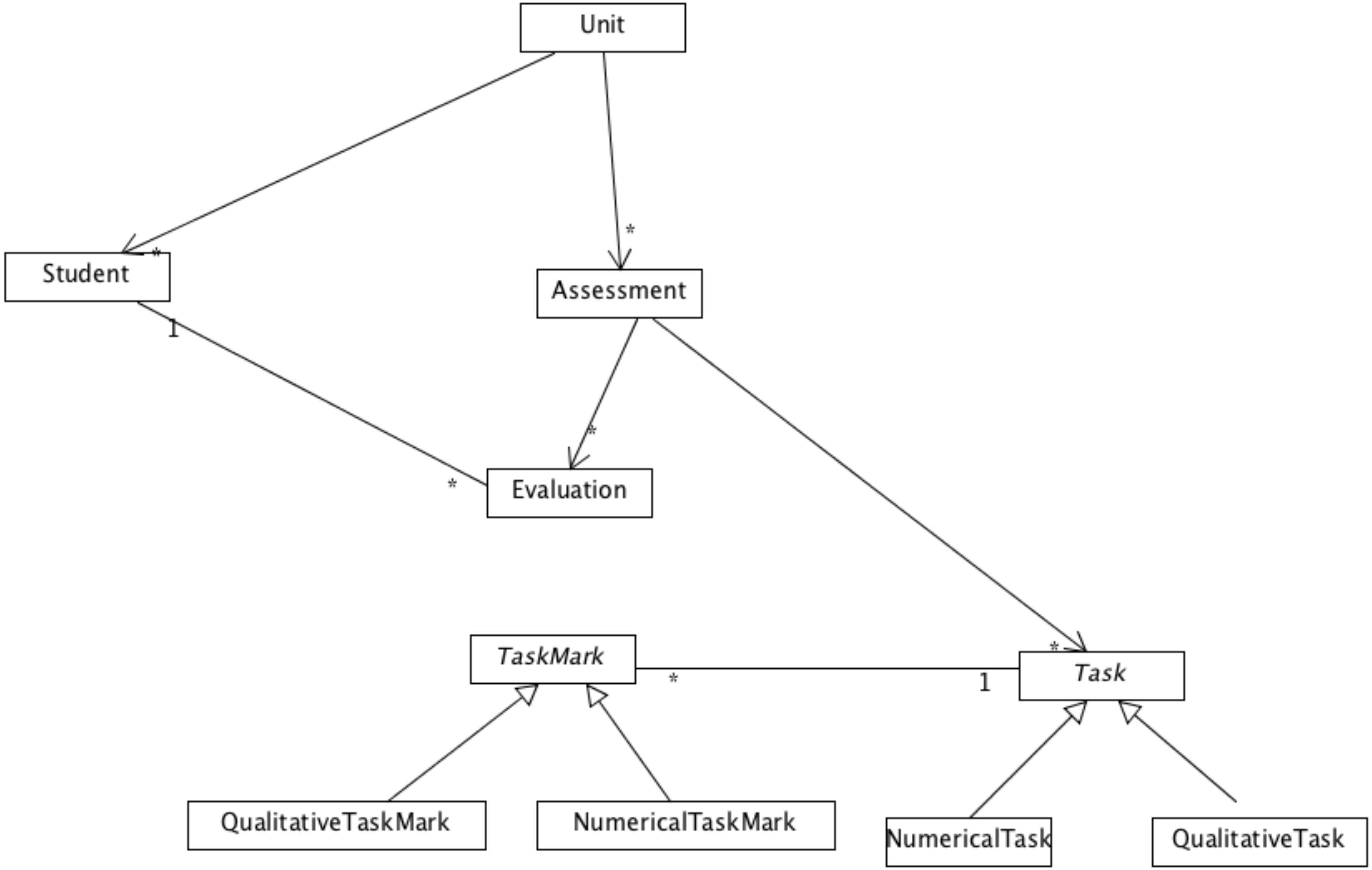
Learning outcomes

- Lists of observable properties that somebody completing unit/course should exhibit
- Key question for university administrators:
  - Where do we assess each learning outcome in a set?
  - How well are our students doing on each outcome in the set?

Scenarios for learning outcomes

I want a report stating where in a unit/course each outcome in a set is assessed

I want a report stating the average performance of students on tasks relating to each learning outcome in a set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And now to the video...