

**Monash University**  
**School of Computer Science and Software Engineering**  
**CSE3308 - Example Scenarios**

Several analysis and design examples used in lectures in this unit will be based on the scenarios described below. Reading these scenarios should help you to understand the examples in the lecture slides.

### **Student Enrolment System**

An Australian University has contracted you to develop their new student records system. The normal tasks that the system performs are as follows:

- **Enrol a student at the university:** A student provides his or her personal details (name, address, sex, date of birth), along with the code of the course (e.g. Bachelor of Computer Science) in which he or she wishes to enrol. A student record is created, and a unique student ID number is assigned to the student. The system automatically enrolls the student in any core first-year subjects for the course.
- **Enrol a student in a subject:** A student provides his or her student ID number and the subject code of the subject in which he or she wish to enrol. The system checks that the subject requested by the student is allowed for the course in which the student is enrolled. If not, the enrolment request is rejected. The system checks what subjects (if any) are specified as prerequisites for the subject in which the student wishes to enrol. If the student has passed all the prerequisite subjects, he or she is enrolled in the desired subject. Otherwise, the enrolment request is rejected.
- **Record a mark for a student:** A staff member accesses the system by giving a subject code and a password for that subject. If the password is correct, the system displays the list of students enrolled in the subject to the staff member. The staff member can then specify a mark for any student on the list.
- **Create a new subject:** An administrator accesses the system using a password. The administrator then chooses a subject code for the new subject. The system checks that this code is not already in use in the system, and if not, creates a new subject record. The administrator then gives the subject name, the course to which it belongs, the year of the course in which it may first be taken, a flag indicating whether or not it is a core subject and the codes of any prerequisite subjects.
- **Print a transcript of a student's results:** An administrator accesses the system using a password. The administrator then gives the student ID number of the student for whom the transcript is to be generated. The system contacts the finance system to check whether or not the student has paid all fees. If fees have been paid, the system creates a transcript showing all the subjects in which the student has been enrolled in each year, and the mark for that subject. The header of the transcript shows the student's personal details and the course in which he or she is enrolled.
- **Assign a staff member to a subject:** An administrator accesses the system using a password. The administrator then gives the subject code for the subject to which the staff member is to be assigned, and the staff ID number of the staff member.

## Online Bookshop

A major Australian book retailer is planning to develop a computer system to handle their new online bookshop: *Murray.com*. You have been chosen to do the analysis and design. The following requirements have been identified:

- Customers can search for books on the Murray.com website, either by author name, or words in the title. A list of all matching books is returned to the customer. A customer does not need to be logged-in in order to search.
- The system records all the customers of the Murray.com who have ever logged in. A customer may be an individual customer or a business customer.
- Each customer has a username and password. Business customers may have several usernames and passwords, corresponding to different divisions within the business.
- When a customer has selected a book to buy at the Murray.com website. The system prompts for the customer's username and password. The customer enters these details. The system verifies the customer's identity and retrieves the customer's name and address, then prompts for credit card details. The customer enters these details. The system checks the credit card details. The system shows the customer the book and delivery price. The customer confirms the transaction.
- The system records all books available at Murray.com. For each book, the author, title and ISBN number are recorded. The number of each book in stock is also stored, along with the number on order by customers and the number on order from publishers. Books may be temporarily unavailable.
- All books are stored in the Murray.com warehouse. The warehouse can be contacted via a secure internet connection.
- For each customer, a permanent record of books bought by that customer is maintained. Likewise, for each book, a record of customers who have bought that book is kept.
- A customer order consists of one or more order lines, each corresponding to a particular book. A customer may choose to defer the shipment of an order until all the order lines have been filled.
- When the warehouse fills all or part of customer order, an email is sent to the customer informing them of what has been shipped.
- If a book ordered by a customer turns out to be unavailable, the corresponding order line is flagged and an email is sent to the customer informing them of the problem. At this stage the customer can cancel this order line.
- When a book corresponding to a previously-unavailable order line becomes available, an email is sent to the customer and a copy of the book is held for seven days, after which it is returned to normal stock if the customer has not confirmed the order.
- The shop keeps track of which publishers produce particular book titles. Some books may be available from more than one publisher.
- Although Murray.com will initially sell only books, it is envisaged that in future it will offer further products, such as CDs. The list of possible future products has not yet been finalized.