

Faculty of Information Technology

FIT9130 Systems Analysis and Design

Assignment One Parts A, B and C

Semester 2, 2015

Assignment Overview

In this assignment, you will produce a conceptual design specification report for the attached case using a number of design techniques. Note that this is an individual, not a group, assignment. There are three deliverables required: an initial draft of a design specification report containing a narrative overview (Assignment 1a); an initial draft of the complete design specification report (referred to as Assignment 1b) and the final complete design specification report (referred to as Assignment 1c).

The purpose of the assignment is to simulate a proper systems design consulting project where you, as the designer, will need to work with the client to identify and elicit design requirements. **In addition to the included case text below, you will be expected to ask questions of the client on the Assignment 1 discussion forum on Moodle.**

Assignment Due Dates

On-Campus Students

Part A – 4pm Friday, Week 6 (4th September, 2015)

Part B – 4pm Friday, Week 9 (25th September, 2015)

Part C – 4pm Friday, Week 12 (23rd October, 2015)

Off-Campus Students

Part A – 5pm Sunday, Week 6 (6th September, 2015)

Part B – 5pm Sunday, Week 9 (27th September, 2015)

Part C – 5pm Sunday, Week 12 (25th September, 2015)

Note: Submission times are for the time zone at Caulfield (Australian Eastern Standard Time).

Submission

Turnitin

Turnitin is an online tool to assist students and staff in understanding and supporting the ethical and appropriate use of materials. Students are required to submit an electronic version (in .doc format and WITHOUT the cover page) of each submission through the Moodle site of this unit.

Turnitin generates the initial originality report quickly. However, if you resubmit your assignment for analysis, there will be a 24-hour delay before a new report is generated.

You are permitted multiple submissions to Turnitin until the due date of the relevant assignment. You may want to make improvements based on the report and resubmit it

through the same Turnitin submission link. Each submission will overwrite the previous submission and only the last submission / originality report will be viewed.

Further details can be found at:

<http://vle.monash.edu/supporttraining/learnbytech/turnitin/index-student.html>

Submission Procedure

On-campus students are required to submit **both** a hard copy **and** an electronic copy of their submissions. Off-campus students are only required to submit an electronic copy.

Electronic Copy

All students should submit their final submissions via the relevant links on Moodle. Submissions must be in either Microsoft Word or PDF format.

Hard Copy

On-campus students must also submit a printed **and bound** copy of their submissions. Binding must be spiral or comb binding, available at photocopying services like Office Works, or the MAS service desk on campus. Note that there can be delays in binding with the MAS service desk. Submit the printed copy, with an assignment coversheet, in the assignment submission box on Level 6 of Building H.

Assignment Value

- Assignment 1a: 5% of your overall grade
- Assignment 1b: 15% of your overall grade
- Assignment 1c: 20% of your overall grade

Collectively, the entire assignment is worth 40% of your overall grade for FIT9130.

Learning Objectives

Successful completion of this assignment will lead to knowledge of and skills in:

- techniques for functional analysis of a business problem;
- communicating an understanding of a design problem, as well as a design solution to a non-technical audience;
- the purpose of, and techniques used to develop, requirements specification for an information system;
- conceptual modelling of data and processes using the following techniques:
 - a. Entity Relationship Diagrams
 - b. Class Diagrams
 - c. Use Case Diagrams
 - d. Activity Diagrams
 - e. System Sequence Diagrams

The assignment assesses your understanding of materials covered in Weeks 3-8 inclusively of the syllabus.

Deliverables

The assignment is divided into three deliverables. The first two, 1a and 1b, are intended as draft submissions which can be improved after feedback for inclusion in the subsequent assignment submission.

Part 1a – Draft Narrative Overview and Report Structure

This is a draft skeleton design specification report. Your report should include all of the sections that you anticipate submitting for the final submission in Part 1c. However, the only content required is the initial introductory narrative overview. In addition to the assignment coversheet, you should include, at a minimum:

1. a title page
2. an executive summary
3. a table of contents
4. an introduction containing your narrative overview
5. section headings for subsequent sections of the design specification report

The narrative overview should outline your understanding of the design problem based on the case material provided below as well as the requirements you've gathered from the client on the Moodle discussion forum. It should also give some idea of the proposed design solution, although this may become more detailed later in Parts 1b and 1c. The narrative overview should not just paraphrase the case study document.

Part 1b – Draft Conceptual Model

Building on your submission from 1a, you will submit a completed draft design specification report containing:

1. a title page
2. an executive summary
3. a table of contents
4. an introduction containing your narrative overview (revised, if necessary, based on feedback from Part 1a)
5. The following **conceptual** models:
 - a. an entity relationship diagram
 - b. a matching domain class diagram
 - c. a complete set of use case diagrams
 - d. activity diagrams for use cases related to diary entries
 - e. system sequence diagrams for the diagrams in d.

Part 1c – Final Design Specification Report

Based on feedback from your submission for Part 1b, you will submit a final version of your report.

Assessment Criteria**Part 1a**

1. Completeness of discussion on the project background
2. Completeness of understanding of the design problem
3. Completeness of report structure
4. Quality and professionalism of presentation, including report layout and grammar

Part 1b and Part 1c

1. Narrative overview:
 - a. Completeness of discussion of project background
 - b. Completeness of understanding of the design problem
2. Diagrams:

- a. Quality of the design solution and support for the business requirements
 - b. Correctness of technique execution
3. Quality and professionalism of presentation, including layout, structure and grammar

All criteria will have equal weighting in determining your final mark for the assignment. A copy of the assignment marking guide used by your tutor will be available for download from Moodle.

Extensions/Special Consideration

All applications for special consideration must be made no later than two days after the submission date, and must be made using the Special Consideration Application form available via the Unit's Moodle site. You must read the associated Special Consideration policy outlining the grounds for granting special consideration, and attach the appropriate documentation to your form. Submit your form to your lecturer, not your tutor.

Do not assume that submission of a Special Consideration application guarantees that it will be granted – you must receive confirmation that it has been granted from your lecturer.

Penalty for Late Submission

Late submissions without an approved extension will be subject to a penalty of 5 marks (out of 100 available for the assignment) per day. Weekends count as a single day. No assignment will be accepted more than one week late.

Plagiarism and Collusion

Note that this is an **individual** assignment. While general collaboration between students in terms of understanding of modelling concepts is acceptable, the assignment and the solution contained in it must be entirely your own work.

You **must not**:

- Use another student's work as the basis for your own.
- Use another student's work to help 'give you ideas'
- Steal, appropriate or make use of the work of another student without their knowledge.
- Lend your work to another student for any reason
- Use the ideas, words or other intellectual property of anyone without proper attribution.
- Leave your work unattended on the student laboratory computers, or give your authentic details to anyone.

Penalties for plagiarism and/or collusion can include formal reprimands, notes being attached to your student file, failure in the assignment, failure in the unit or even suspension or exclusion from the university.

See the Unit Guide for more information on plagiarism and cheating, and for links to Faculty and University policies on this topic.

The Case: Wildlife Australia

Background

Wildlife Australia is a not-for-profit organisation established to facilitate the emergency rescue of native Australian wildlife. The organisation works with a variety of groups and individuals around the country, including liaising with local, state and federal authorities to ensure that injured wildlife is cared for and, where possible, rehabilitated and returned to the wild. Wildlife Australia is made up of paying members (some of whom volunteer on a board of management), staff members and volunteers.

Wildlife Australia's most visible public activity is the operation of an emergency phone number that members of the general public can call if they come across injured wildlife. The number, 1300 WILDLIFE is advertised on road signs around the country, as well as in the Yellow Pages and on their website, and is staffed 24 hours a day.

Due to recent fundraising activities, the Wildlife Australia has grown from an all-volunteer organisation to one with a number of employees, most of whom work in the call centre staffing the emergency phone line. In addition to the emergency phone operators (EPOs), other staff members are involved in volunteer liaison, training and member services. Common to many non-profit and small organisations, rapid growth has brought a number of challenges in addition to the opportunities. Chief among the problems is data management. The organisation can now afford to develop an information system to keep track of their data, and they've engaged you to design a system to help them. The key requirements are described below.

Operation of the Emergency Phone Line

The emergency phone line operates on a 24 hour basis with paid staff working shifts to ensure coverage at all times. Calls are placed by the general public when they've found an injured animal and staff work to facilitate the rescue of the animal and arrange for treatment and care.

Wildlife Australia acts as a liaison between the caller and a network of rescuers, transporters, vets and shelters. Wildlife Australia does not, itself, perform the rescues, but maintains a list of volunteers who offer their time and skills to do so. When a call is received by an emergency phone operator (EPO), basic details are collected from the caller such as the type of animal, location, what's wrong with it, the caller's contact details and any other pertinent information.

Where possible, the EPO will encourage the caller to rescue the animal themselves and take it to a local vet or shelter for care. If this is not possible, the EPO will give the caller details of rescuers in the local area who are able to deal with the particular kind of animal (for example, some rescuers are able to work with snakes, other specialise in birds or marsupials, etc.). The EPO will also try to get in touch with rescuers directly, and if successful arrange for the rescuer to get in touch with the caller.

Once the animal has been rescued it is assessed for injuries. Where emergency veterinary care is needed, then the animal is taken to a vet clinic. After initial care, or where vet care is not needed, the animal is taken to a wildlife shelter for rehabilitation and hopefully eventual release back in the wild. The rehabilitation process may be as short as overnight, or may extend into several months of care depending on what's

wrong with the animal. In some cases, the most humane course of action is to euthanise the animal, but this is avoided wherever possible.

Records are kept of the entire process, from the initial call right through to the eventual outcome (ie. release or otherwise of the animal). Each call is given a case number, and this is used to track the process. For example, one case may involve a call, a rescue by a rescuer, transport of the animal from the rescuer's home by a transporter to a wildlife shelter, and then release by that shelter back to the animal's home grounds. Another case may involve one or more trips to a vet clinic and then release without staying at a shelter. Yet another may simply involve a rescuer going out and finding that there's nothing wrong with the animal at all. Each 'event' in the case is recorded, as well as the kind of animal and the nature of the problem when first rescued. The final event in the case is an outcome event: either a release, or euthanasia.

To support this process, Wildlife Australia maintains a list of rescuers, transporters, vet clinics, wildlife shelters and other relevant organisations (eg. the Police are often called upon to help with rescues of kangaroos on highways). Because the needs of different kinds of animals can be quite varied, the skill-set of each of the above are recorded as well. For example, sometimes climbing is involved and only certain rescuers are qualified to do so safely, or certain wildlife shelters may specialise in, say, kangaroo rehabilitation.

Typically those involved in cases are individuals, but some wildlife shelters are organisations in their own right. Local groups can also be listed as 'a rescuer' or 'transporter'.

Managing the Case Records

The initial record for each case is opened by the EPO when the call is taken. The first entry in the case, therefore, is the record of the phone call. At this time the case number is generated by the system. The EPO then gives this case number to the volunteer responsible for the initial rescue. Each subsequent record in the case, though, may be added by the relevant volunteer responsible for that event – for example, the rescue record (date, time, rescuer, outcome) could be added to the case file by the rescuer themselves via the system. Alternatively, the rescuer could call back the EPO who could update the record on their behalf. The rescuer would, in turn, pass the case number on to the volunteer transporter who should be able to add to the case record that a transport occurred (date, time, pickup location, destination). Similarly, the wildlife shelters responsible for rehabilitation, the vets involved in treatment, etc. all should be able to add to the case record via the system, or have the EPO staff do it for them on their behalf. The case record is 'closed' when the final outcome event is added to the record.

Training Courses

Although the rescue, transport and rehabilitation of animals is actually carried out by volunteers and other organisations apart from Wildlife Australia, the organisation will not send out people on a case unless they are appropriately qualified. Some of these qualifications are issued by government authorities – wildlife shelters for example are registered and managed by state government departments like Victoria's Department of Sustainability and the Environment. Other specialised skills like firearms training or rescues in emergency areas like fire-grounds are also certified by government authorities.

For skills not covered by these other organisations, Wildlife Australia operate regular training courses. Records of attendance are kept, as well as the skills acquired. A list of trainers is also maintained. Wildlife Australia staff will be responsible for adding these records to the system.

Membership Services

Wildlife Australia is a member-run organisation. Initially founded by a group of wildlife shelters who wanted to co-operate to help the public bring in injured animals, the organisation now boasts around 1000 members. Some of these members are individuals, but the organisation also offers family and organisation memberships. Some of these members are also active rescuers, transporters or wildlife shelters, while others take a more passive role – seeing their membership fee as a donation that supports the organisation.

Members are sent a quarterly newsletter, and receive special discounts on equipment and Wildlife Australia training courses. While these benefits do not need to be tracked by the database system, an accurate, up-to-date record of members does need to be maintained, including contact details, type of membership (individual, family or organisation) and renewal date. Membership is valid for 12 months. If a member's membership lapses, they still need to be recorded in the system, but their lapsed status need to be noted. In the case of family and organisation memberships, a designated person needs to be recorded who is the point of contact and can exercise the voting rights of the membership at annual general meetings and the like.

Members are not necessarily the same people as volunteers, although there is a large overlap between the two groups: many volunteers are members, but some volunteers are not, and likewise, some members are not involved as volunteers at all.