

COMP2110/COMP2510
Software Design Assignment 3

Detailed Design of an Online Bookshop Application

This is an **individual** assignment. Your design must be your own work.

Due: 19 October 2009, 18:00 EST

College of Engineering and Computer Science
The Australian National University

Detailed information

There are two other important documents together with this specification, and they are: **Assignment 3 elaboration** and **a sample design report of a previous student**.

- Submit your assignment electronically following command:
`submit comp2110 ass3 ass3.pdf`
- Also submit a hard copy of your assignment to the reception of Department of Computer Science.

Late assignments will be accepted for up to seven days after the deadline with 1 penalty point applied for each 24 hours. Extensions will be granted on the basis of material evidence — medical certificate *etc.*

Basic version

Assignment 3 is "do a detailed design for the online bookshop application". Exact details on the format of your submission will follow — but in the meantime, start work on the **design** task.

If your group got less than 7 marks for assignment 2 then it was not good enough, you should do high level design again.

You are encouraged to do some detailed design — and then start again with new high level designs. Do not think that you should go only from the high level design that was done for assignment 2. Try out ideas creatively — against the requirements.

as you...

1. as you learn more design and architecture ideas from lectures, reading the book, (and reflecting, and rereading after trying things out) and from trying out ideas on paper
2. as you look at the requirements again (and again) and consider what are the most important aspects, and the worst parts of your solution (coherence, coupling, modularity—and performance, robustness, extendibility)
3. consider all of the questions that every group in your lab class (and others) were asked about the design decisions. Your detailed design needs to answer all of these points to be a **Good** design solution.

and then — you have to **communicate** your design well. Use standard formats as a starting point,

use other examples. Use the textbook!

What to aim for: Good design?

What's a good design — it is traceable... back to the requirements. So you need to check all of them — and any added ones — and document the fact that you have added some.

You are advised not to change all of the requirements — how can I, the client, trace what I originally specified, if you do that? remember that you do not "own" these requirements. The requirements are the contract that I will pay on if you design a product to match (and not otherwise). But you can make some changes, additions and so on if that's justified. You need to justify it.

Look at the specification of assignment 2 for the comments and requirements.

The detailed design document structure

The good design report has the structure which is explained in the classic paper by David L. Parnas and Paul C. Clements ``*A Rational Design Process: How and Why to Fake It?*'' . We shall study this paper at the end of the course. According to Parnas and Clements, the design report should be structured as follows:

1. Introduction (contains the product overview, mission statement etc)
2. Requirement modifications, augmentation, etc
3. Architecture (high-level design, module structure)
4. Module decomposition (module class diagrams)
5. Detailed class diagrams (interface description)
6. Examples of use cases (scenarios) — collaboration and sequence diagrams
7. Discussion of design decisions, rationale and constraints. Assessing the design against the standard quality criteria: extendibility, usability, etc.

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Revised by Rainbow Cai