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20-Nov-98

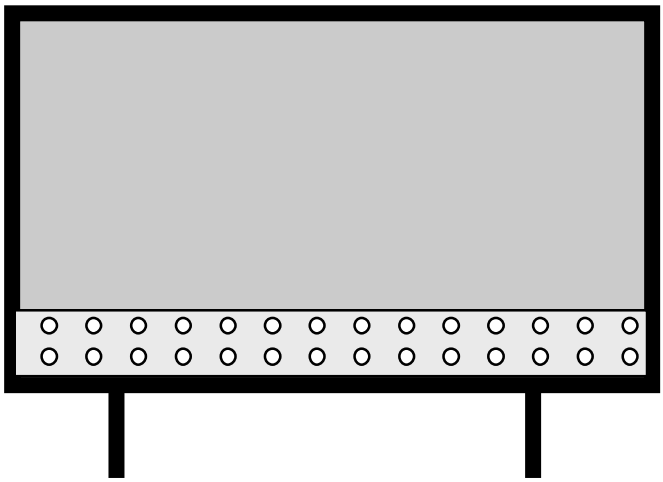
D50 Advances in Software Engineering for Distributed Systems

Tutorial Session 1 - Work Sheet

This Tutorial session will give you practical experience with use case modelling.

Task 1: Town Map

Consider the example of an electronic town map in a public car park designed to show the key points of interest in the town. The map contains a number of electronic lights that identify key locations, such as hospitals and libraries. Below the map is a panel containing buttons labelled with the relevant names. Pushing a button on the panel causes a lamp at the related location to light up for 10 seconds.



Assuming that a simple software system is needed to control the operation of the map, define the following:

- The use case model for the system (actors then use cases);
- The use case description for selecting a location (basic course only)
- The problem domain objects and attributes relevant to this use case.

Hint: This question, and its solution model, are very simple. Do not look for over-complex solutions.

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Task 2: Lending Library

Consider the computer system for a local lending library, similar to the system in the DMS Watson Library. The basic function of the library is to control the loaning and returning of boox. Librarians undertake book lending and returning. For lending the details of the borrower are read from the bar code of the borrower‘s library card. The details of each book are read from the bar code in the front cover of the book. A borrower can borrow a book if it has not been reserved by someone else and if the book quota for the borrower has not been exceeded. A computer screen informs the librarian of a borrower‘s details and possible problems during lending. On return, the librarian uses the bar code reader to check the book in. The screen informs the librarian of any fines incurred. A borrower can also use the system through the internet to reserve books.

A software system is needed to enable operation of the library system. Define:

- The use case model for the library system (actors then use cases). Where relevant show <<extends>> and <<uses>> associations between use cases and abstract use cases.
- The use cases for loaning, returning and reservation of books. Define basic and and alternative courses as we discussed;
- The problem domain objects and their attributes relevant for both use cases.