SOFTENG 752
Formal Specification and Design
Assignment #2
Due: 5pm, Friday 10 October, 2014.

SE Software
Engineering
The University of Auckland

This assignment is an extension to assignment 1. You are required to model and verify the design of assignment 1 using the UML Object Constraint Language (OCL) and its validation tool – the UML Specification Environment (USE). As the assignment 1 was focused on the formal specification itself, the assignment 2 should extend the modeling and focus more on how to validate the design. You need to specify the model in the USE format and simulate the design by creating a set of objects and checking the invariants and pre/post-conditions of the specification. Project requirements and what to submit:

- Single person assignment is preferred (no more than two persons in a group).

- Submit an OCL formal specification model of the project in the USE format (to be submitted individually).

- Submit USE simulation files which include the creation of objects, checking of the structure, invariants, and validating pre-/post-conditions of operations (to be submitted individually).

- Submit a poster of the assignment in PDF format, emphasizing on the verification/validation aspects of the design (A2 size, to be submitted individually).

The assignment will be assessed for 100 marks in total (= 10% of the final grade), which consists of:

- UML specification and validation (70 marks), i.e.,

    - structure and properties (10 marks)
    - concise and correctness (15 marks)
    - complexity and completeness (20 marks)
    - simulation and verification of the design (25)

- Written poster of the formal modeling and validation (30 marks), i.e.,

    - layout and presentation (10 marks)
    - clarity of the explanation (10 marks)
    - aspects refer to verification (10 marks)

The due date of assignment 2 is Friday, **October 10th, 2014, 5:00PM**.