Unit 6

Hands-on with UML

(Reflection)

UML Modelling

At this point in the study on using UML modelling techniques, including class diagrams, object diagrams, sequence diagrams and activity diagrams, I feel more informed than when I started the module.

Modelling Principles

I found the following points from Unified Modelling Language User Guide (2nd Edition) (Booch & Rumbaugh, 1999) to be useful when setting about to model one or more scenarios:

1. Models reflect reality.
2. Every model depicts different levels of precision (I refer to this as “detail”)
3. Multiple models create the whole picture.

Modelling Information Systems

Using UML to model information systems is an ideal tool because UML covers three areas of every information system, namely, functionality, structure and interaction.

- **Functionality.**
  Use case diagrams are ideal to capture the functionality requirements of an information system.
- **Structure.**
  Class diagrams describe the system in terms of objects, operations and associations and represent abstractions of the structure and behaviour of objects in the system.
- **Interaction (also described as dynamic).**

Behaviour of a system is modelled using different perspectives, for example:

- Data perspective. Data flow diagram; state machine diagram;
- System or human interaction. Activity diagrams;
- Message exchange. Sequence diagrams;

Working through the Seminar 3 preparation I note while activity diagrams are similar to sequence diagram (at least, conceptually), they present very different views in that a sequence diagram focuses on the *messages* and *return types* between interacting objects, thus presenting additional level of detail compared to activity diagrams. In contrast, activity diagrams are a nice high-level overview of how a given scenario works, without much focus on the underlying inputs and outputs.

Based on my experience with this unit (and also from my career), activity diagrams are generally preferred means of communicating with teams who do not know/wish to focus much on the underlying *structure* of an information system scenario; but rather, the focus is on the correctness of the process flow of a scenario.

Therefore, I would rank each UML diagram in order of importance as (from highest to least):

1. Use Case.
2. Activity Diagram.
3. Class Diagram, Object Diagram.
4. Sequence Diagram.