TORRENS UNIVERSITY AUSTRALIA

Learning Activity

Case Study - Requirements Modelling

Subject Code and Title	SEP401 Software Engineering Principles
Module Number	Module 4

Bottle Washing Plant

Bottle washing is done under batch-like conditions - a quantity of dirty bottles is delivered to the plant and these are washed in one operation. The demands on the water supply are intermittent but significant when washing is actually occurring. When a batch of dirty bottles is ready the operator starts the washing operation from the control panel. AMAC must ensure that valves B, C, E and F are open and valve D is closed. When completed, valve C is closed to await the next batch of dirty bottles.

The dirty bottles are transferred to conveyor C1 for transport to the bottle store. If the bottle store is full then the conveyor is stopped until sufficient room is available for the batch of newly clean bottles.

Instructions:

Create the following:

- **Use case diagram** – you might need to make a number of assumptions about how the user interacts with the system.
- **Activity diagram -** for the washing operation of the plant.
- **Class diagram for conveyor C1** – identifying the different classes that exist in the system together with their operations and attributes. You also need to show how these classes collaborate together.
- **State Diagram & Sequence diagram** – the state diagram should completely describe how each and every event or control flow is handled in the system. The sequence diagram should show how different events in the system cause flow from one object to another as a function of time.