Requirements Analysis Modeling

Below are series of modeling tasks that leads to complete Requirement Specification and help the Software Design.

These following bullet items are parts of Section 4 of your Cruise Control Software Document.

* UML Use Cases & Diagram: (State as in Figure 8.2 and format/content of Use Cases of Page 137).Example:

Use Case 1: User sets Cruise Control:

1. User requests an activation of the cruise control.
2. Cruise control provides visual feedback that it is ready for activation.
3. User requests the cruise control be set to the current speed.
4. Cruise control requests values from sensors.
5. Sensors provide values for approval to set cruise control at current speed.
6. Cruise control requests the Engine Management System set the speed at current position.
7. EMS Speed (Throttle) is set at current position.
8. Cruise control provides visual feedback to the user that the cruise control is set and working.
9. Sensors provide the changing environmental information to the cruise control unit (such as speed, request for increase/decrease speed, and brake).
10. Cruise control unit detects the changes from the sensors and request adjusting speed or deactivating Cruise Control accordingly.
11. Speed (Throttle) position is continuously set to new values to ensure that the speed remains constant.
12. Speed is continuously reported to cruise control unit.

* UML Class-Based Modeling

Class Diagrams (As in Figure 8.4 textbook)

* UML CRC Model Index Card

CRC Model Index Cards (As in Figure 8.5)

* UML Activity Diagram

(As in Figure 8.6)

* UML Sequence Diagram

(As in Figure 8.7)

* UML State Diagram

(As in Figure 8.8)

Note: Include Class Modeling of Interfaces in the above diagrams as appropriate. For that you use the Class rectangle symbol that contains the keyword «interface». Compartments in the class shape display information about the attributes, operations, and signal receptions of the interface.