HW #2 Investigating the Requirements

Com S/SE 409 & Com S 509, Fall, 2017

Due at beginning of class Thursday, Sept. 28

Textbook reading assignment: Chapters 4-6, Robertson & Robertson, 3rd ed.

Team assignment: one assignment is turned in for this part with the names of all the team members who participated on it.   If you prefer, you may instead do the entire assignment individually. Re-read the Homework Policy at the top of HW#1.

1. *Identifying the events, and the input and output flows.* (20 pts.) Read pp. 73-80 and pp. 422-425. Produce and turn in an event table for your project. Use the example of the Business Event Table on p. 423 (with 3 columns) rather than the example on p. 80 (with 2 columns).

2. *Partitioning the work to determine the best product to build*. (20 pts.) In this step you determine the scope of your product. Read pp. 80-85 and pp. 429-432. Produce and turn in a product use case diagram for your project containing a complete set of high-level, product use cases. There is an example of a use case diagram on p. 84. Note that Robertson & Robertson recommend no more than 20 use cases for a product use case diagram.

3. *Deriving Scenarios* (from the Product Use Cases). (50 pts.) Read pp. 143-145. Note that this template is for a Business Use Case (BUC) Scenario. Pages 196-199 has an example of a Business Use Case and its associated Product Use Case (PUC) Scenario, which uses Actors rather than Active Stakeholders.

    a. *Normal & alternative scenarios*. Read Chap. 6.   Produce and turn in a set of normal and (if needed) alternative scenarios for the Product Use Cases you've developed. There is an example of a product use-case scenario on p. 199. The textbook (p. 131) recommends that you write your scenarios using between 3 and 10 steps.

    b. *Exception scenarios*. Read pp. 140-143. Produce and turn in a set of exception scenarios for the Product Use Cases. You may either include the exception scenarios in your normal scenarios (for simple exception scenarios) or write separate, additional exception scenarios. For exception scenarios that you include in your normal scenarios, please provide a way for us to distinguish your normal scenarios from your exception scenarios, e.g., by coloring the exception steps a different color. Exception scenarios will be important for team projects to consider in order that the software be robust, reliable, easy to use and widely used.

4. *Glossary*. Read pp, 415-416. (10 pts). Define the abbreviations and acronyms, technical terms, and unusual words (or words used in non-standard ways) that a developer needs to know to create this product. For example, regarding p. 416, you wouldn't define "Truck" but would define "BIS" & "Thermal Map".

509 students only, also do:

Reading assignment: van Lamsweerde, all of Chap. 1.

Additional homework problems from van Lamsweerde:

Each grad student turns in an answer to this part separately. Discussion is encouraged, but each student must write up his/her solution independently without consulting anyone else's solutions.

5.   van Lamsweerde, p. 59, 9th Exercise, beginning "Consider a simple traffic light system . . ."
[Find 3 missing environment assumptions & 3 domain properties that are necessary to build the satisfaction argument given. Also answer the two questions the exercise asks.] (30 pts.)

6. van Lamsweerde, p. 59, 11th Exercise, beginning, "Section 1.1.4 . . . ".
 [Give 6 additional non-functional requirements.] (20 pts.)