HW #4 Prototyping

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

*Due at beginning of class Thurs, **Nov. 2***

Textbook reading assignment: Chaps. 12 in Robertson & Robertson

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

1. *Prototype Description* (10 pts.)   Describe the prototype that you are delivering. This description needs to have enough details that a reader/user can understand what it does and to convince us that your requirements are feasible and the product has merit. Describe what prototype technique &/or software tool you're using to create the prototype, as well as the level of prototype fidelity that you've chosen and why. (The "why" may be related to problem 3(a) below.)

2. *Prototype*
    (a) Produce a prototype. (50 pts.) You have quite a bit of flexibility in how to do this. For example, Mark Billingsley's slides describe a range of alternatives:
    https://www.slideshare.net/marknb00/rapid-prototyping-for-augmented-reality
    Submit your prototype as a single pdf or as a link to a short (< 5 min.) video that you have uploaded to a site. The prototype will be graded on the basis of its quality, whether it "works" as a prototype, use of AR, appropriate fidelity level, and completeness for the functionality being tested.
    (b) Describe two scenarios that your prototype includes. (This can be brief text; you don't need to use the scenario template). (5 pts.)
    (c) Your prototype must have at least one interactive loop where it receives input data and shows something changing in the AR as a result.   Describe it briefly. (5 pts.)
    (c) Your prototype must show some interaction of the user with the AR settings.   Describe it briefly. (5 pts.)

3. *Testing the prototype.* (15 pts.)
    (a) Design 4 questions that are likely to elicit useful feedback on the prototype from a representative user of the system.
    (b) Each member of your team should individually show the prototype to, and get feedback on it from, a representative user of the prototype: show them the prototype, ask the 4 questions and write down their answers. Turn in the answers, mapped to the name of the team member who tested the prototype and the name of their representative user.
    (c) What changes to your requirements will you consider as a result of the feedback you received?

4. *In-class exercises* (10 pts.) Graded individually.

509 students only, also do:

Reading assignment: van Lamsweerde, parts of Chap. 2 (see below).

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*. Runtime monitoring of requirements and assumptions for dynamic change.* Read van Lamsweerde, Section 6.5. Then, on p. 257, do Exercise #15, beginning, "Identify a number of volatile assumptions . . .."
[Identify 4 volatile assumptions. As a reminder, this system was described in detail on pp. 9-12.]