SE463
Software Requirements:
Specification & Analysis

Overview and Admin Notes

Fall 2024

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with Input from Ahmed ElShatshat

Reality of Your Capstone Project

So for your Capstone projects, you have been likely postponing working out the details of all requirements, because you don't have enough time.

You have probably picked a small viable set of G requirements as the scope of your prototype and are heading into design and coding without having fleshed out the G requirements' D requirements.

You don't have the time!

The Gift of SE463!

OK.. So what SE463 is going to do is give you the gift of time, time that you *have* to spend to pass SE463, to work out the D requirements for your capstone project!

So thank me! ☺

No applause yet? ☺

How The Gift Will Be Given

And the way I am going to give you this time is to take advantage of my dictatorial powers of not giving you a passing grade in SE463 unless you satisfy the course requirements, which is to write a requirements specification of the selected set of G requirements, the selected scope, of your capstone prototype, in which each of the scope's D requirements has been worked out and a response for it is specified.

To Be Clear

- I accept that you may think that what I am forcing you to do is a colossal waste of time!

- No one writes these specifications any more, not in real life where everything is Agile, and not even full agile with writing of a full set of test cases upfront for each story.

- "Hey man! get with the times!" ☺

Double Whammy

- This has always been the case with the SE1 project, especially when I concoct a system for you to specify; the system is totally useless and boring to you.

- Once the term is over, you'll never touch it again in your life!

- Double whammy: useless work for a useless system.

But Now!

- But now, the system is your own capstone!!!
- I hope that it's not boring to you!
- So at most, the specification is useless!

But Now!

- However, it *could* be different from in the past.
- The specification *just could* end up being interesting and useful.
- It *could* end up improving your capstone system immensely!!!
- Wow, a useful class project!!!
- Will miracles never cease!!!

Maybe Not!

- If you believe that what you produced is indeed useless to your capstone, then at the end of the term, *just ignore the specification and continue as before*!

- Regardless, if you do a good job on the stupid inane requirements spec that I force you to write, you'll get a good grade in this course!

- No different from when the spec is of my system!

But It's Not Agile!

But but but …

    Nobody does it this way any more!

    We're agile!

    No upfront requirements engineering (RE)!

    It's in the Agile Manifesto!!!

    Get with the times!

Agility Works!

Yes.. Agility works,

but it's a hideously expensive way to discover and implement D reqs.

A G req's D reqs are discovered only during the sprint that implements the G req ...

or even later.

Costs

The cost to *fix* this code to handle the D reqs is

   at least 10 times

the cost to write the code for the G req with the
D reqs already specified, …
so that nothing needs to be *fixed.*

Data Are Clear

The data are clear.

Spend more time figuring out reqs upfront

$\rightarrow$

- implementation is faster and
- the resulting code has fewer defects (bugs).

BOBW (Best of Both Worlds)

Making you do upfront RE for your capstone as another, required course's main deliverable is a way to allow you allow you to

- try both agile and upfront on the same project
- and compare the outcomes
- without taking away any time from what you're doing in the capstone.

Can Make a Rational Decision

Based on what happens with this comparison, you can decide rationally, based on real experience, what you will do in the future!

Wow!!!!!

Two Separate Courses

- Note that SE463 and SE490 are separate.
- This gives you the right to ignore in SE490 what you produce in SE463, to throw it out as useless make work that the SE463 prof made you do for a good grade in SE463...
- just as it used to be in the past, and still is in some sections of CS445 and ECE451.

TESTIMONIALS

Surprise Discovery in S'20 – S'21

- In Summers of '20 – '21, we found that about 1/2 of the teams actually changed their capstone systems for what they thought was the better, using what they learned in the SE463 specifications. Wow!!!

Remember

It's not like I'm asking you to do something totally useless, like my concocted problems.

Eventually, you *will* have to consider the issues covered by the deliverables.

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