



CS5127/6027: Requirements Engineering (Fall 2024)

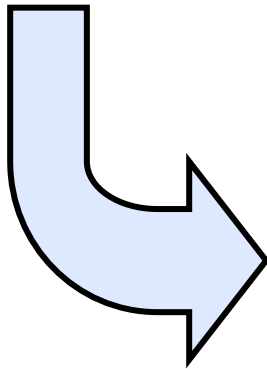
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Office Hours: 10am-11am, Mondays, Rhodes 832

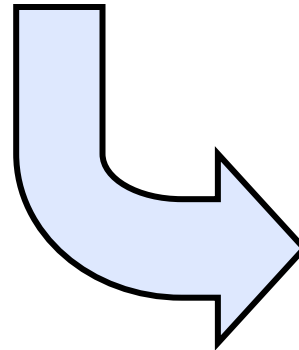


Today's Menu

Last Lecture (Friday 10/18):
Quality of Req.s



This Lecture (Friday 10/25):
Requirements Analysis



Next Lecture (Monday 10/28):
Rq.s-Based Testing



Quiz9's questions are in today's lecture

→ Analysis

↪ definition: detailed examination of the elements or structure of something, typically as a basis for discussion or interpretation, e.g., statistical analysis, an analysis of popular culture

➤ our previous two lectures: forms & qualities

↪ *analyzing what?*

➤ well-written, well-formed

➤ completeness (e.g., SRS missing NFRs, US missing roles)

➤ consistency (P and (not P) are not simultaneously true)

➤ ... (*how many?*)

Let's **analyze** Ana's requirement



Ana: "I want to have a program that tells whether it terminates on any given input."

Let's **analyze** Bob's requirement

Make Eclipse work on
iPhone in 2 weeks.





A take-away from Sept 13's lecture

requirements elicitation \neq
asking the right questions

→ RE's 5 starting points

↪ Stakeholders

↪ Boundaries

↪ Goals and scenarios

↪ Feasibility

↪ Risk



Any
Questions?



Goal by themselves do NOT make a good starting point for RE

Project to develop a computer controlled turnstile guarding the entrance to a zoo

→ Goals (the software system should satisfy/achieve)

↳ To deny entrance to people who have not paid the admission charge.



Is not the real goal to ensure the profitability of the zoo?

Should we consider other ways of improving profits, such as cutting costs?

What if there's more money made by closing the zoo and selling the land?

Almost every goal is a subgoal with some higher purpose.
Also need: subject matter



Ambiguity = more than one interpretation

→ NL is the most common form of req.s & NL is *inherently ambiguous*

The app shall display the weather information for 2 hours.

2 hours of weather info.

display for 2 hours

↪ NL1: Melissa walked to the bank.

➤ "Bank of America" or "Bank of Ohio River"

lexical ambiguity

↪ NL2: Quickly read and discuss this tutorial.

➤ Quickly: read, discuss, both?

syntactic ambiguity

↪ NL3: Fred and Emily are married.

➤ Married to each other, or not?

semantic ambiguity

↪ NL4: The boy told his father about the damage.
He was very upset.

➤ Who's he?

referential ambiguity



HITECH Act

- *The Health Information Technology for Economic and Clinical Health Act*, abbreviated *HITECH Act*, was enacted under Title XIII of the American Recovery and Reinvestment Act of 2009 and created incentives related to health care information technology, including incentives for the use of electronic health record (EHR) systems among providers.
- At the time it was enacted, it was considered “the most important piece of health care legislation to be passed in the last 20 or 30 years” and the “foundation for health care reform”.



Let's classify ambiguity in HITECH Act

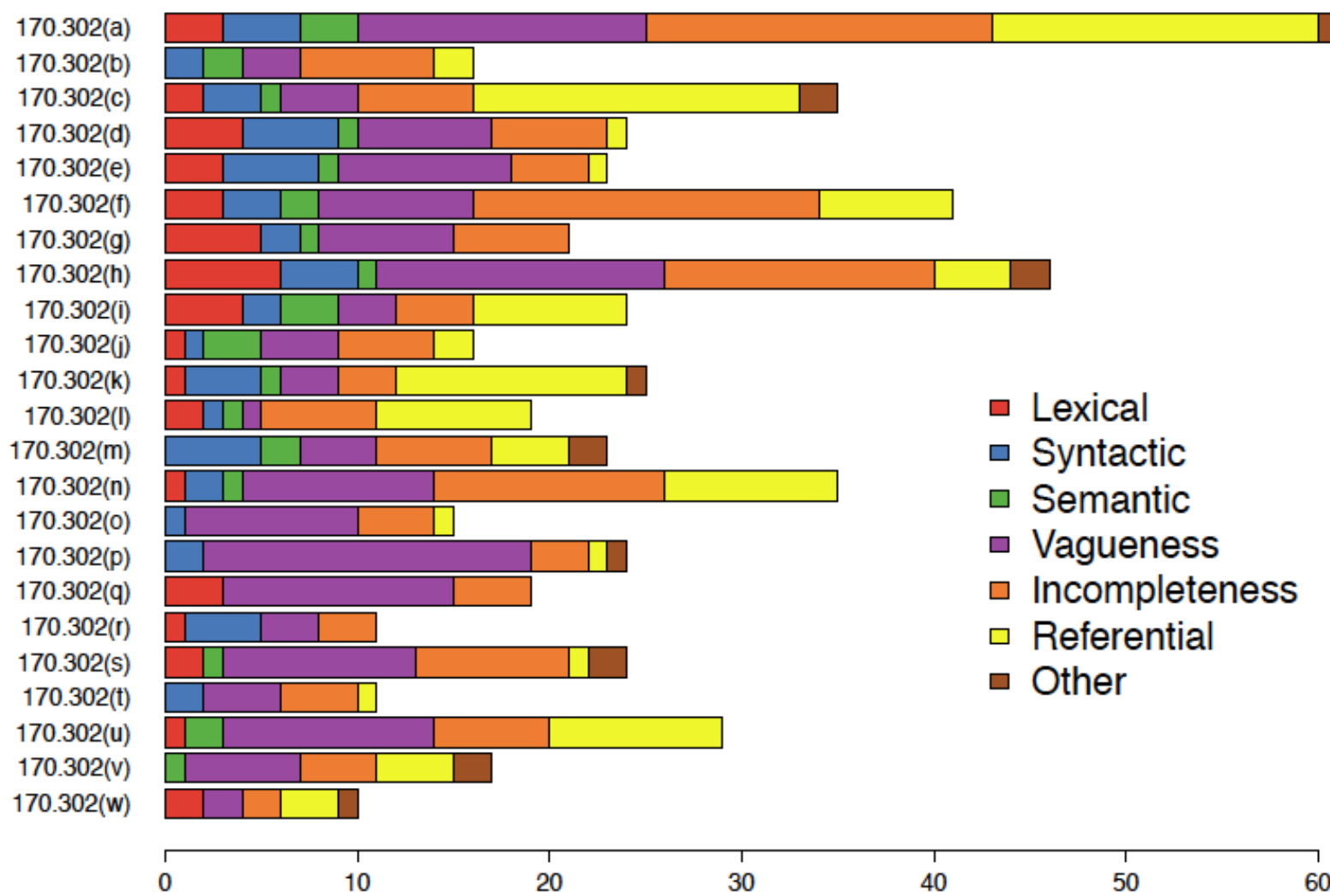
R1: “enable a user to electronically record, modify, and retrieve a patient’s vital signs ...” §170.302(f)

R2: “enable a user to electronically record, modify, and retrieve a patient’s active medication list as well as medication history for longitudinal care” §170.302(d)

R3: “Provide certain users with the ability to adjust notifications provided for drug-drug and drug-allergy interaction checks.” §170.302(a)(2)

R4: “Enable a user to electronically compare two or more medication lists.” §170.302(j)

Ambiguities identified in each paragraph of the HITECH Act, 45 CFR Subtitle A, §170.302



A take-away of the day

✚ NL is inherently ambiguous. NL requirements, including security policies, are without exception.

*There are many reasons why lawyers lie.
Some are better than others.*

Sept 10, 2022, “Wait Wait... Don’t Tell Me”: The Queen passed away peacefully in her home in the north of the country, surrounded by her loved ones and Prince Andrew.



Today's Take-Aways

→ Requirements analysis is a broad term, so specific activities and purposes shall be defined.

↳ When requirements are written in NL, they are inherently ambiguous

→ To-do

↳ Review today's slides

↳ Graduate students: Continue working on the project (video presentation due: Nov 15)

↳ Everyone: Attend next Monday's (10/28) lecture on "req.s-based testing"