



# CS5127/6027: Requirements Engineering (Fall 2024)

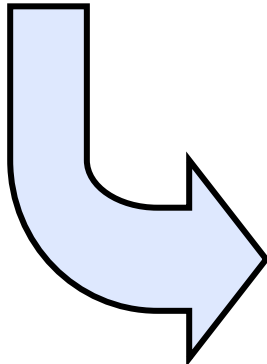
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Office Hours: 10am-11am, Mondays, Rhodes 832

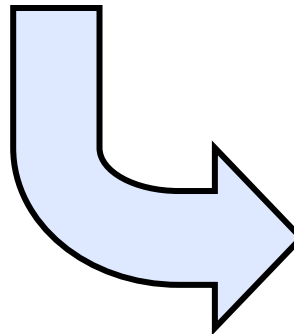


# Today's Menu

Last Lecture (Monday 8/26):  
Syllabus & Assessments



This Lecture (Friday 8/30):  
What're req.s?

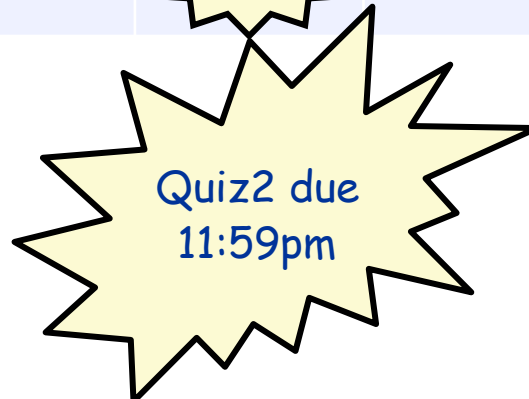


Next Lecture (Friday 9/6):  
Meaning of req.s  
Release ASN1

# The Next Week

Su	Mo	Tu	We	Th	Fri	Sa
					30	31
1	2	3	4	5	6	7

**TODAY**





## Quiz1 on "RE: A Roadmap"

- Correct answers *shown*: Thursday (9am 8/29)
  - Sunday (9pm 9/1)
- Requiring *YOUR INDIVIDUAL* deep understandings
- Leading to the next lecture(s) & also as *take-aways*

## RE activities include:

- *eliciting* requirements,
- *modelling* and *analysing* requirements,
- *communicating* requirements,
- *agreeing* requirements, and
- *evolving* requirements.

the basis for *analysing* requirements, *validating* that they are indeed what stakeholders want, *defining* what designers

For groundwork, some assessment of a project's feasibility and associated risks needs to be undertaken, and RE plays a crucial role in making such an assessment. It is often

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## Q2—Q4

themselves need to be engineered, and RE represents a series of engineering decisions that lead from recognition of a problem to be solved to a detailed specification of that problem.

intention of developing a broader market. The type of product will also affect the choice of method: RE for information systems is very different from RE for embedded control systems, which is different again from



The idea that the attempt to build consistent and complete requirements models is futile, and that RE has to take seriously the need to analyse and resolve conflicting requirements, to support stakeholder negotiation, and to reason with models that contain inconsistencies [28].

## Q5

### 5.5 Modelling Non-Functional Requirements (NFRs)

Non-functional requirements (also known as *quality requirements*) are generally more difficult to express in a measurable way, making them more difficult to analyse. In particular, NFRs tend to be properties of a system as a whole, and hence cannot be verified for individual

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is social, and concerns the difficulty of reaching agreement among different stakeholders with conflicting goals. We

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practice. Since RE must span the gap between the informal world of stakeholder needs, and the formal world of software behaviour, the key question over the use of formal methods is not *whether* to formalise, but *when* to formalise





## Before distinguishing FRs and NFRs...

→ Let's try to define "requirements" in one sentence

↪ No Googling please

↪ Share your answer with the rest of us

# Expected answers

→ IEEE definition:

1. a condition or capability needed by a user to solve a **problem** or achieve an objective
2. a condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document



A **problem** is a difference

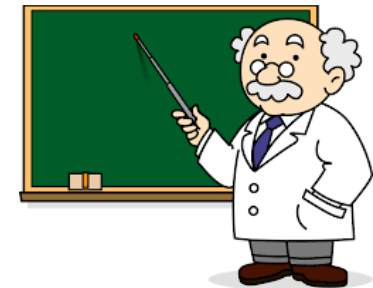
between things as desired  
and things as perceived

## What're "Requirements"?

- Requirements = stakeholders' needs and desires
- Stakeholders = those who have a stake in the change being considered & who stand to gain or lose from the change
  - ↪ The holders of the bets in a gambling game
  - ↪ Discussion: Who're the STAKEHOLDERS of Zoom (or ChatGPT) and what're their requirements (needs and desires)?

# Stakeholders of Zoom

<https://ucincinnati.zoom.us/j/4879043098>



**Builder:** software developers, testers, marketing & sales ...

**User:** customers (those who pay), users (those who use) ...

**Contexts:** social, legal, ethical, technological, organizational ...



## What're **NOT** requirements?

→ Needs & desires of ***non-stakeholders***

→ Stakeholders' ***non-needs or non-desires***



## Today's Take-Aways

- Requirements = stakeholders' needs & desires
- Stakeholders = those who stand to gain or lose from the change being considered

### → To-do

- ↪ Review today's slides & clear Quiz1 questions
- ↪ Read the "Meaning of Req.s" paper
- ↪ Complete Quiz2 before 11:59pm, Wednesday (9/4)
- ↪ Attend the "Meaning of req.s" lecture on Friday (9/6) where ASN1 will also be released