CMPS 4143 Software Engineering NAME _____
Homework 2: DUE Monday, Feb 16, 2026
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1. What is a requirement and a constraint? What are the differences between the two?

- A requirement t describes the capability or condition that the system must satisfy. It defines what the system has to do or what characteristics it must have.
- A constraint, however, is a restriction placed on the system or development process. It tells us how the system must be built or operated, not what it does.

The difference is that requirements describe the system's behavior or capability, and constraints limit design or implementation.

2. What are the challenges in requirements elicitation?

- The client may not know what they want
- May use vague language
- People using the software might expect different things
- They might have expectations they don't mention
- might be a misunderstanding between the developer and the client

3. What can go wrong with requirements?

- It could be incomplete, ambiguous, inconsistent, or unrealistic

4. How do agile principles apply/affect/change the way we do requirements elicitation?

- Agile makes requirements flexible, iterative, and collaborative rather than rigid and fully defined upfront. by keeping requirements in a flexible, prioritized backlog that can be updated throughout the development process

5. Come up with what YOU perceive the functional and non-functional requirements are for YOUR project. Write this on the next page.

Functional Requirements

- system shall allow advisors and admins to log in securely
- system shall support role based access (advisor vs admin)

- system shall allow advisors to:
    - View student profiles
    - Add and edit advising notes
    - View degree audit results
- system shall calculate degree progress based on completed courses
- system shall flag at risk students based on GPA or missing requirements
- system shall allow CRUD operations on
    - Students
    - Courses
    - Degree requirements
- system shall generate reports for administrators
- system shall store all data in a database.

Non Functional

- system shall respond to user requests within 2 seconds
- all passwords shall be encrypted
- interface shall be simple and easy for non technical advisors
- system uptime shall be at least 99%
- system shall support at least 5,000 students
- code shall follow modular design principles
- system shall run on major web browsers