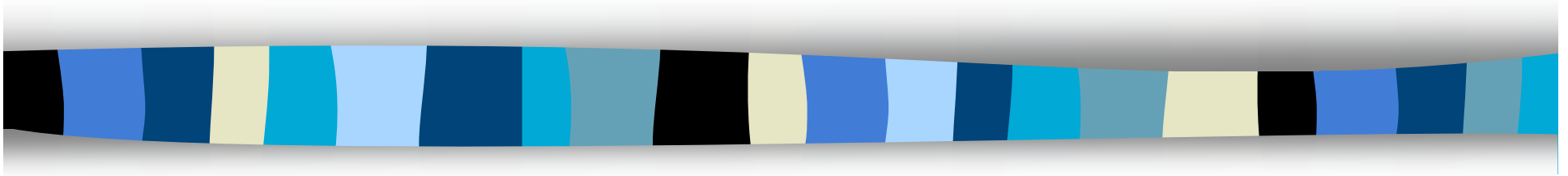


# Goal Orientation



Informatics 113  
WQ 2011



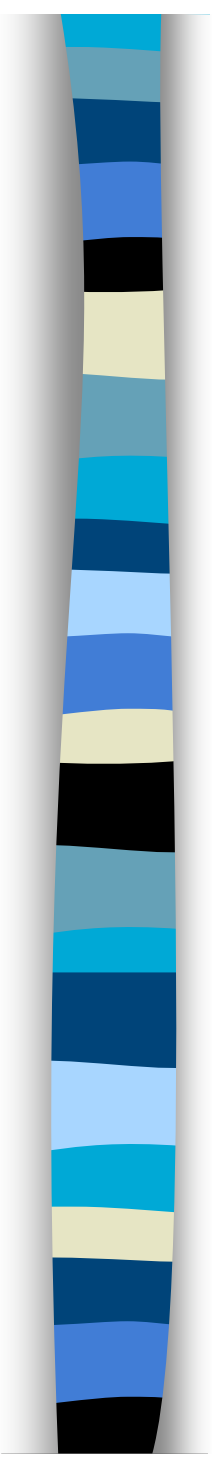
# A chapter of definitions...

- But a fundamental shift in approaching RE
  - Chapters 1-6 provide reasons, techniques, approaches, notations
  - Chapter 7 provides the basis for organizing all RE activity, and developing a RD



# Goals

- A **goal** is a **prescriptive** statement of intent
  - That the system should satisfy through the cooperation of agents
  - [*Prescriptive*: “serving to lay down as a rule” -- as contrasted with *operational*]
- An **agent** is an active system component playing a specific role in goal satisfaction



In other words, **why**  
and we doing this,  
and **who** is  
responsible?



## Examples from the text

- “Meetings shall be scheduled so as to maximize the attendance of invited participants”
- “The nearest available ambulance shall be mobilized for the incident”



# Goals and Subgoals: Getting to Requirements and Expectations

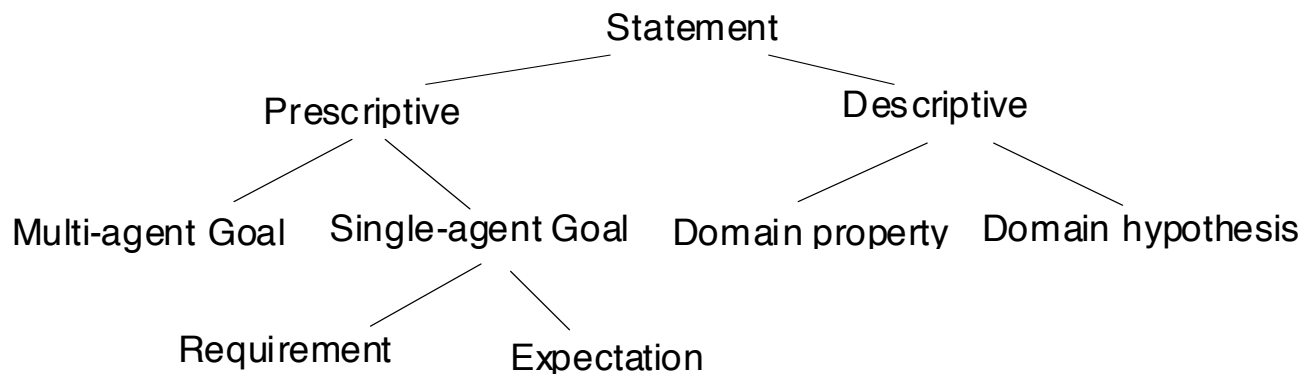
- Goals may be refined to sub-goals
  - (think ahead: and/or refinement)
- The more refined, the fewer agents
- **Requirement: A goal under the responsibility of a single agent of the software-to-be**
  - Chapter 1: “a software requirement is a prescriptive statement to be enforced solely by the software to be and formulated only in terms of phenomena shared between the software and the environment”
- **Expectation: A goal under the responsibility of a single agent in the environment of the software-to-be**



# Why Focus on Goals?

- A rationale for requirements
- A basis for showing alignment of the system-to-be with the organization's strategic objectives
- A natural mechanism for structuring complex specifications at different levels of concern
- Goals drive id of requirements to support them
- A criterion for requirements completeness
- A criterion for requirements pertinence

# Types of Statements

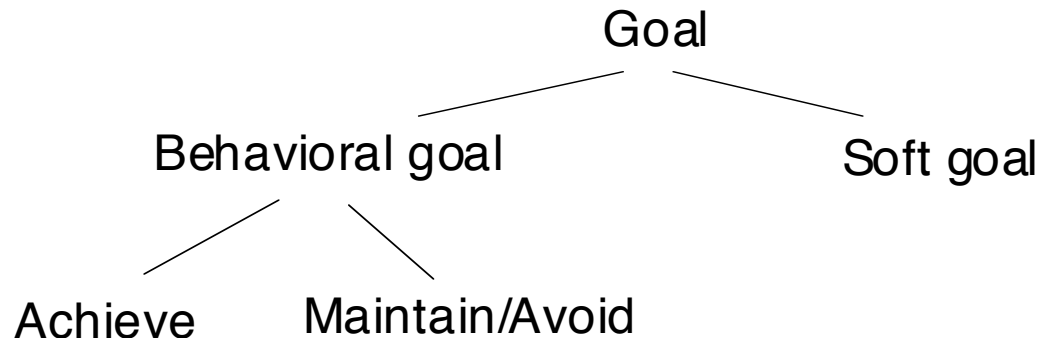


*Subtype*

**Figure 7.1 – Statement typology with goals**



# Types of Goals



*Subtype*

**Figure 7.2 – A taxonomy of goal types**

- Behavioral: they prescribe system behaviors declaratively
  - (must be able to) always determine whether established or not
- Soft goal: prescribes preferences among alternative behaviors

# Explaining Figure 7.3

- Behavioral goal prescribes system behaviors declaratively
- “A system behavior is composed of parallel behaviors of the agents...”
- “An agent behavior is captured by a sequence of state transitions for the items that the agent controls”

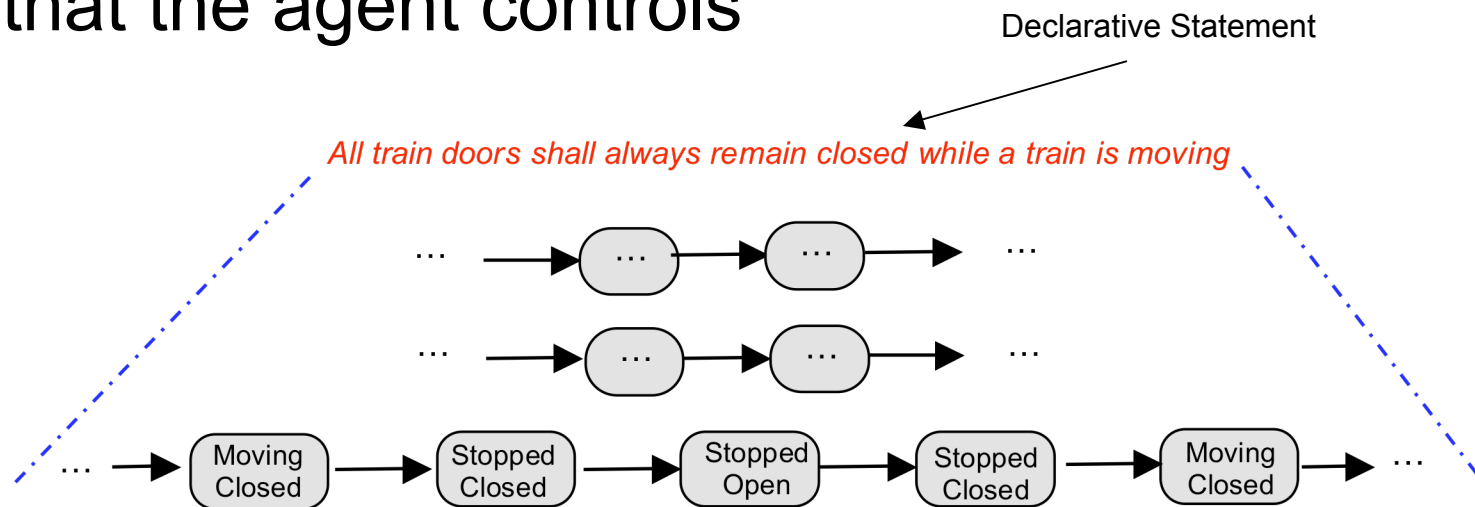


Figure 7.3 – Behavioral goals prescribe intended system behaviors

# Achieve/Maintain Behavioral Goals

- (Temporal logic lurking in the background)

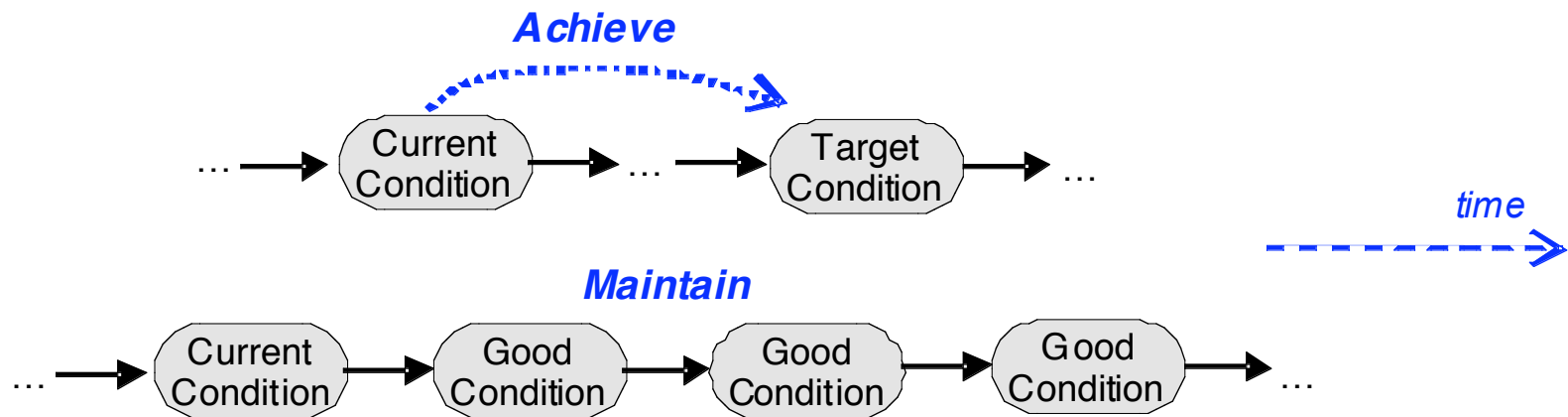


Figure 7.4 – Behavioral goals: *Achieve* and *Maintain* goals



# And/Or Goal Refinement

■ TBContinued