MACIASZEK, L.A. (2007):
Requirements Analysis and System Design, 3rd ed.
Addison Wesley, Harlow England

Chapter 2
Requirements Determination

Topics

- From business processes to solution envisioning

- Functional and nonfunctional requirements

- Requirements elicitation

  - traditional methods and modern methods

- Requirements negotiation and validation

- Requirements management

- Requirements business model

  - system scope, business use case model, business glossary, business class model
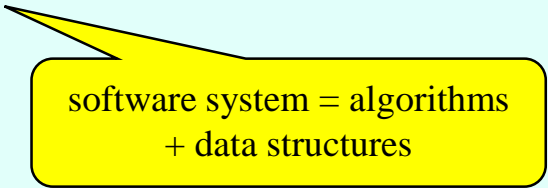
- Requirements document

2. Requirements elicitation

- The least technical phase of system development
- Demands social, communication and managerial skills
- Delivers a (mostly narrative) definition of user requirements

Requirements

- **Requirements define**

  - System services → functional requirements

    - scope of the system

    - necessary business functions

    - required data structures

  - System constraints → nonfunctional requirements

    - regarding 'look and feel', performance, security, etc.

    - also known as supplementary requirements

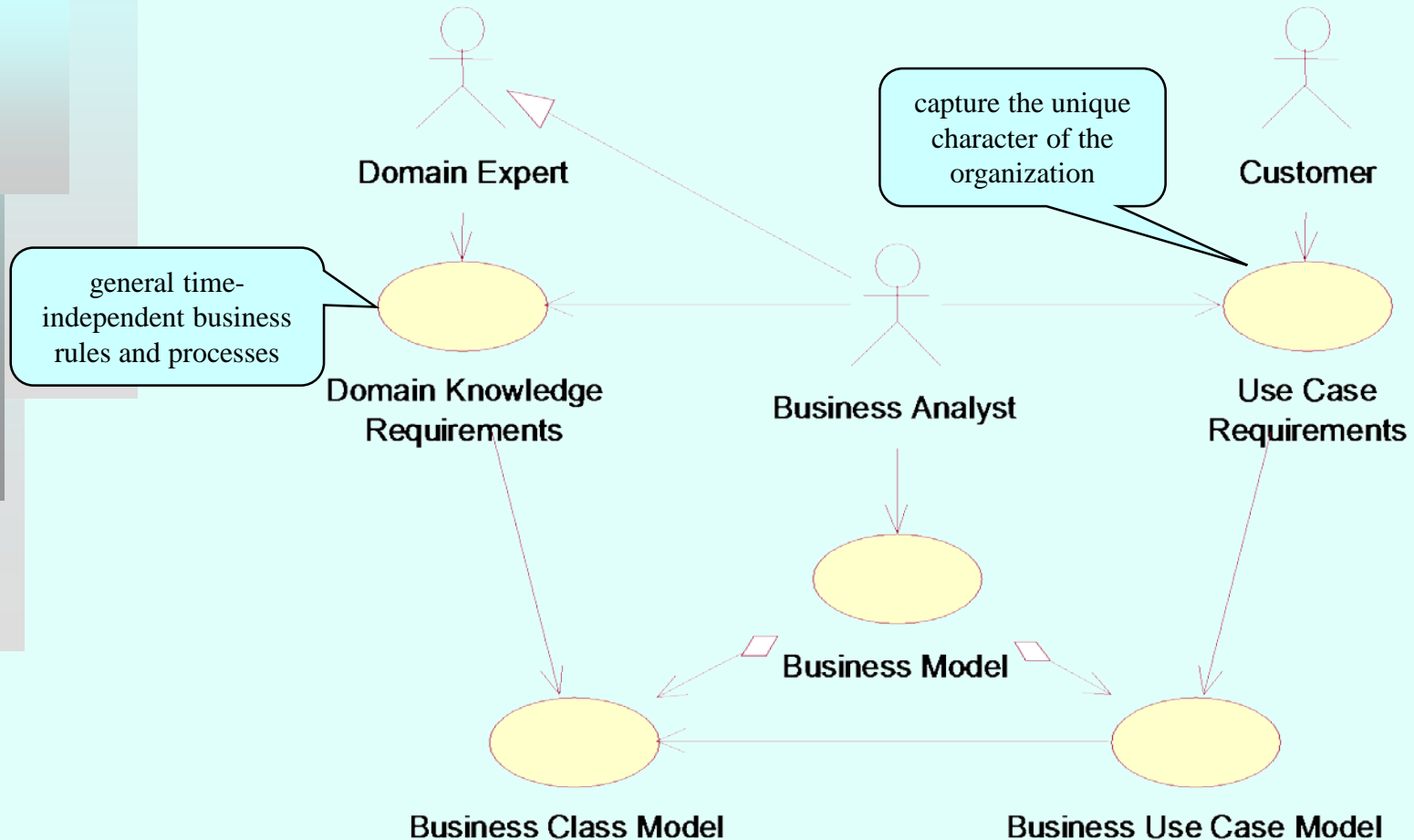> software system = algorithms + data structures

Nonfunctional requirements

- **Usability** – ease of use
  - documentation and help, training, user interface, error handling
- **Reusability** – ease of component reuse
- **Reliability**
  - mean time between failures, graceful recovery, uninterrupted availability, accuracy of results
  - reliable = dependable (we can depend on it)
- **Performance**
  - response time, transaction throughput, resource consumption, concurrency level
- **Efficiency** – in terms of time and cost
- **Supportability** = understandability + maintainability + scalability
- **Other constraints**
  - policy decisions, legal issues, portability and interoperability demands, timeliness of product delivery

Functional and nonfunctional requirements

- Requirements elicitation
  - concerned mostly with **functional reqs**
  - ...but **nonfunctional requirements** cannot be an afterthought
- Reviews and re-negotiations
- Requirements document
- A **moving target** even after the req doc is signed off
  - **requirements management** is concerned, inter alia, with managing change and estimating the impact of change on the project

Requirements elicitation

Class – an abstraction that describes a set of objects with common attributes, operations, relationships, and constraints

Use case – a major functional unit

Review Quiz 2.2

1. What is the name of the profession charged with the responsibility to elicit and document domain knowledge requirements and use case requirements?

2. What are the two main kinds of requirements?