# ETSN15: Exercise 3

## Prototyping & Functional requirements

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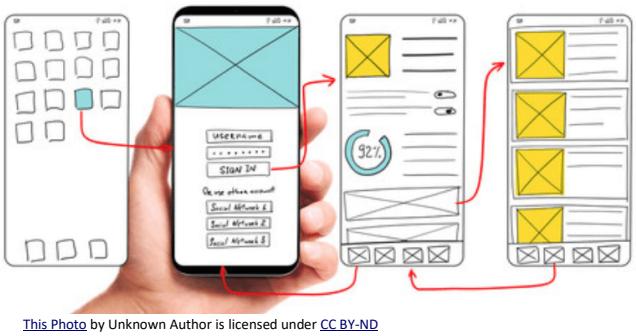
# Prototyping Aspects Model [PROTO1]

| | |
|---|---|
| **PURPOSE of Prototyping** | **USE of prototype** |
| Exploration & learning | Reviewers: internal, FFF, external |
| Communication: sales, alignment | Prototype interaction: yes, no (demo) |
| Incremental development | Review approach: scenario-based free |
| Quality improvement | Usage environment |
| Validation & Testing | **Exploration STRATEGY** |
| *problem-solution / product-market fit, technical feasibility, usability testing* | Single vs parallel exploration |
| **SCOPE of Prototype** | Iteration focus: Business, product, feature, optimisation |
| Breadth of functionality | Iteration size |
| Functional refinement | |
| Visual appearance | |
| Interactive & haptic behaviour | |
| Data realism | |
| **Prototype MEDIA** | |
| Sketch: paper or computer-based | |
| Wireframe: paper or computer-based | |
| Mock-up: paper of computer-based | |
| Source-code software | |
| Other: video, interview | |

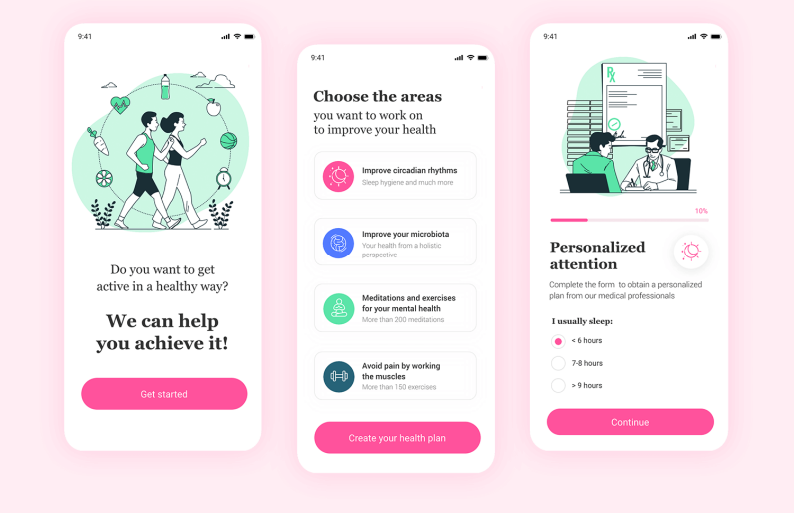


# Wireframe

A way to design a website service at the structural level.

A wireframe is
- a lo-fidelity representation of product under development
- commonly used to **layout content** and **functionality** on a page
- used early in the development process to establish the basic structure of a page before visual design and content is added

# Mockup




A representation of a product, showing users and stakeholders how it may look and be used.

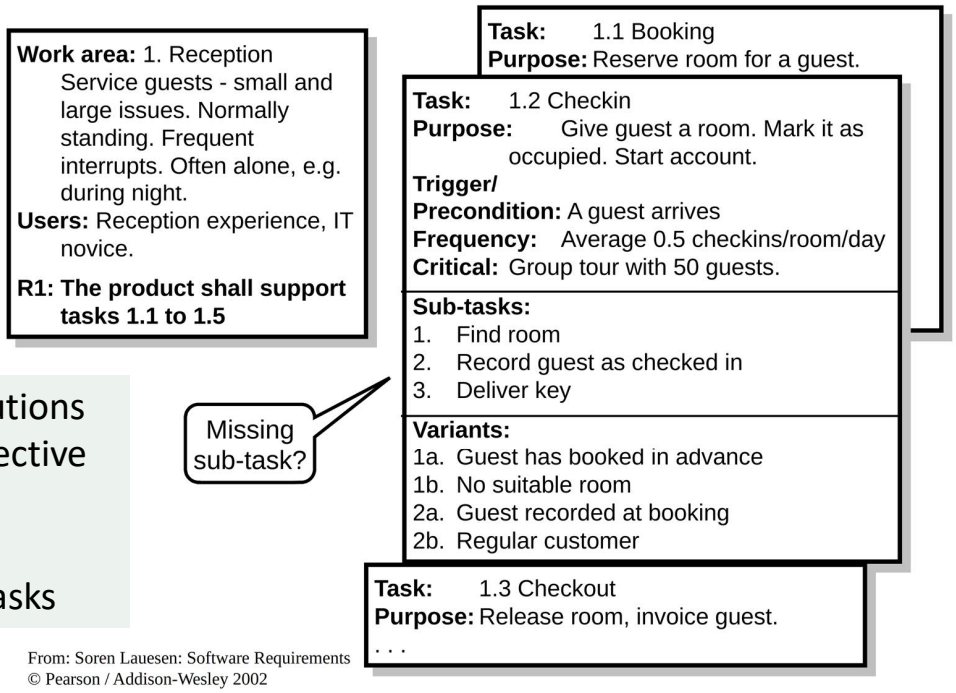
Used to **present medium to high fidelity versions of a design**, e.g. to determine which aspects of a product that work well, and which do not.

# Functional Requirements Styles

- **Context Diagram**
  - Diagram of product and its surrounding
  - Defining product scope
  - Very useful!
- **Event- and function lists**
  - Lists of events and functions
    - Domain or product level
  - Good as checklists at verification
  - Validation at product level?
- **Feature requirements**
  - Textual requirement: ”the product shall …”
  - High expressive power
  - Acceptable to most stakheolders
  - Can lead to false sense of security
    - How to ensure that goal-level covered?
- **Task descriptions**
  - Structured text describing user tasks
  - Easy to understand and verify
  - Good at domain level
- **(Vivid) Scenarios**
  - Rich descriptions of specific cases
  - Improves developer intuition and imagination
  - Products of elicitation but not “real” requirements
- **High-level tasks**
  - Client view of goal-related tasks
  - Independent of existing domain-level tasks
  - Good for business process re-engineering
- **Use Cases**
  - Widely used in many styles and variants
  - Some styles are good for design level (UI)
  - Can be used at different levels
  - Risk of pre-mature design
- **Standards as requirements**
  - Textual requirement:
    “the product shall follow standard xxx”
  - Transfer the problem to the supplier
  - Sometimes lead to false sense of security
- **Development process requirements**
  - A requirement to follow a certain procedure
    - Use prototypes
    - Use specific reviews at certain points
    - Test in a specific way
    - Max number of simultaneous change reports
    - …etc
  - Validation? Difficult to say how process quality relates to product quality

# Task descriptions

**Fig 3.6A Task descriptions**



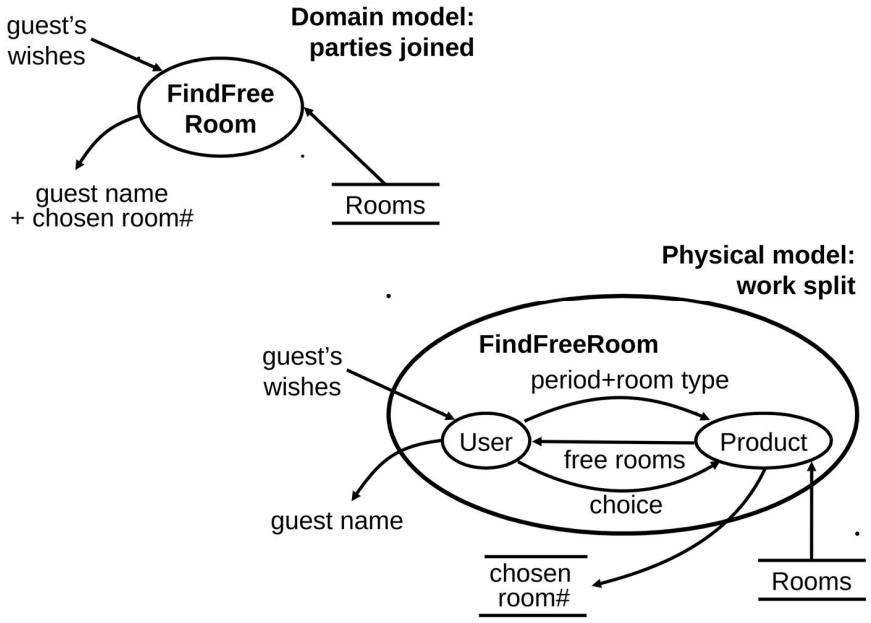

+ Tasks & support – w example solutions
+ High-level tasks – business perspective
+ Tasks with data

See Lauesen 3.10 on good vs bad tasks

From: Soren Lauesen: Software Requirements

# Dataflow diagram

**Fig 3.1 Human-computer - who does what?**




From: Soren Lauesen: Software Requirements
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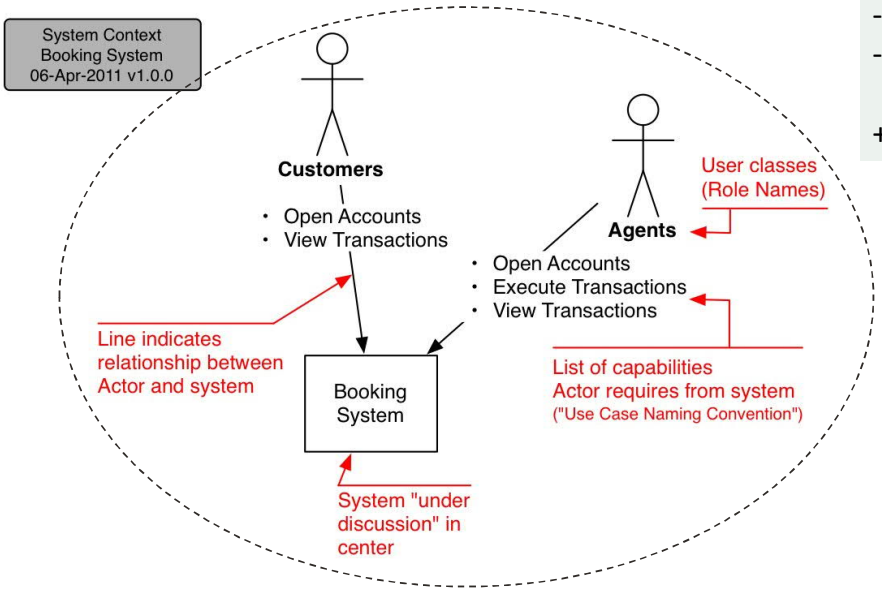
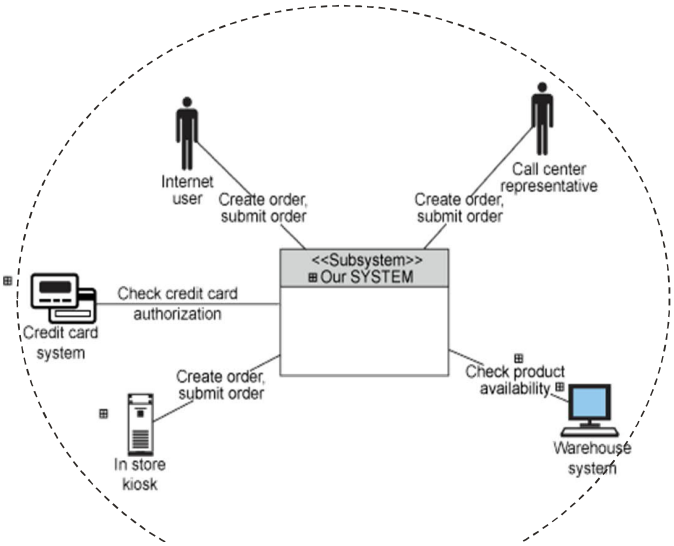
# Context diagrams

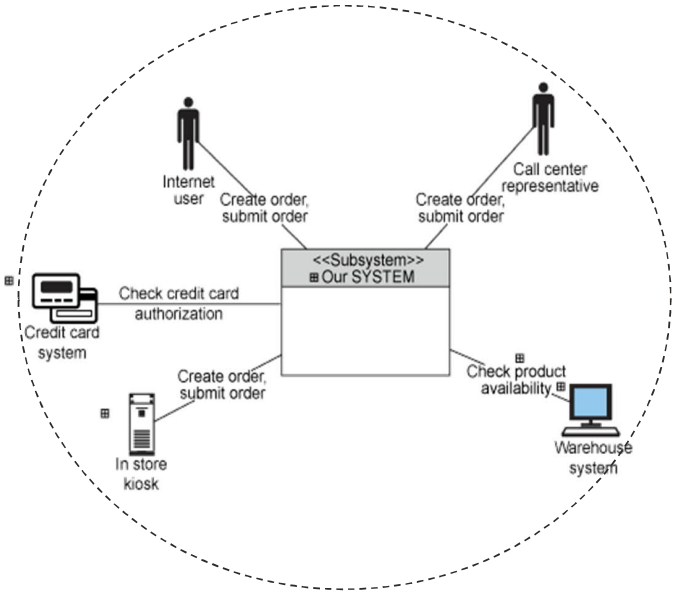
Provides overview of
- **System** (black box == no system design!)
- **Users** and **interacting systems**
- **Functionality** (or data) at domain level

+ business domain actors (not shown here)



# Your requirements spec




Should cover all of the inner domain (domain requirements)
- Product (product & design reqts)
- Actors (domain reqts)
- Interfaces to other systems (domain reqts)

+ goal requirements
+ design-level requirements for a subset of functionality (first delivery of release plan)

# Today's exercises

4) Revisit context diagram – peer-to-peer presentation and discussion (20 min)
- Actors and interacting systems
- HL functionality

1) Plan prototyping – in project groups (20 min)

2) Orientation of functional styles (10 min)

3b) Task descriptions (15 min)

3e) Dataflow diagram (15 min)

3f) Plan FR styles for your project per requirements level (20 min)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