



## **Group Administration Module**

**- an exemplary case of software development for  
ILIAS3**



# Topics

- . **Introduction**
- . Approach to software development
- . Results
- . Perspectives



# Approach to software development

Requirements specification:



# Approach to software development

## Requirements specification:

- Use Cases to figure out the functional requirements



# Approach to software development

## Requirements specification:

- Use Cases to figure out the functional requirements  
→ recognize interdependencies

# Approach to software development

## Requirements specification:

- Use Cases to figure out the functional requirements
  - recognize interdependencies
  - understand the application flow

# Approach to software development

## Requirements specification:

- Use Cases to figure out the functional requirements
  - recognize interdependencies
  - understand the application flow

## Design:

# Approach to software development

## Requirements specification:

- Use Cases to figure out the functional requirements
  - recognize interdependencies
  - understand the application flow

## Design:

- distinction into layers:
  - Graphical User Interface (GUI)
  - Application layer
  - Core layer
  - Foundation layer
- two sectors with different views: administrator and user
  - administrator sector: ilObjGroup, ilObjGroupGUI
  - user sector: ilGroup, ilGroupGUI



# Approach to software development

Implementation:



# Approach to software development

## Implementation:

- kick-off as a group (collaborative programming)  
→ big savings later



# Approach to software development

## Implementation:

- kick-off as a group (collaborative programming)
  - big savings later
  - good way to share knowledge

# Approach to software development

## Implementation:

- kick-off as a group (collaborative programming)
  - big savings later
  - good way to share knowledge
  - increases quality !
- later split-up according to class responsibilities
  - weekly meetings about the development status

# Approach to software development

## Implementation:

- kick-off as a group (collaborative programming)
  - big savings later
  - good way to share knowledge
  - increases quality !
- later split-up according to class responsibilities
  - weekly meetings about the development status

## Testing:

- continuous testing during coding
  - early discovering of mistakes



## Results

### Technical requirements:

- high demand for reusability of classes



## Results

### Technical requirements:

- high demand for reusability of classes
  - requires well designed interfaces



## Results

### Technical requirements:

- high demand for reusability of classes
  - requires well designed interfaces

### Organizational requirements:

- ongoing development of core classes

## Results

### Technical requirements:

- high demand for reusability of classes
  - requires well designed interfaces

### Organizational requirements:

- ongoing development of core classes
  - sustained adjustments according to changes

## Results

### Technical requirements:

- high demand for reusability of classes  
→ requires well designed interfaces

### Organizational requirements:

- ongoing development of core classes  
→ sustained adjustments according to changes
- cooperative software development

## Results

### Technical requirements:

- high demand for reusability of classes  
→ requires well designed interfaces

### Organizational requirements:

- ongoing development of core classes  
→ sustained adjustments according to changes
- cooperative software development  
→ high level of coordination

## Results

### Technical requirements:

- high demand for reusability of classes
  - requires well designed interfaces

### Organizational requirements:

- ongoing development of core classes
  - sustained adjustments according to changes
- cooperative software development
  - high level of coordination
  - strict compliance with coding conventions



# Perspectives

- Requirements laid down have been realized



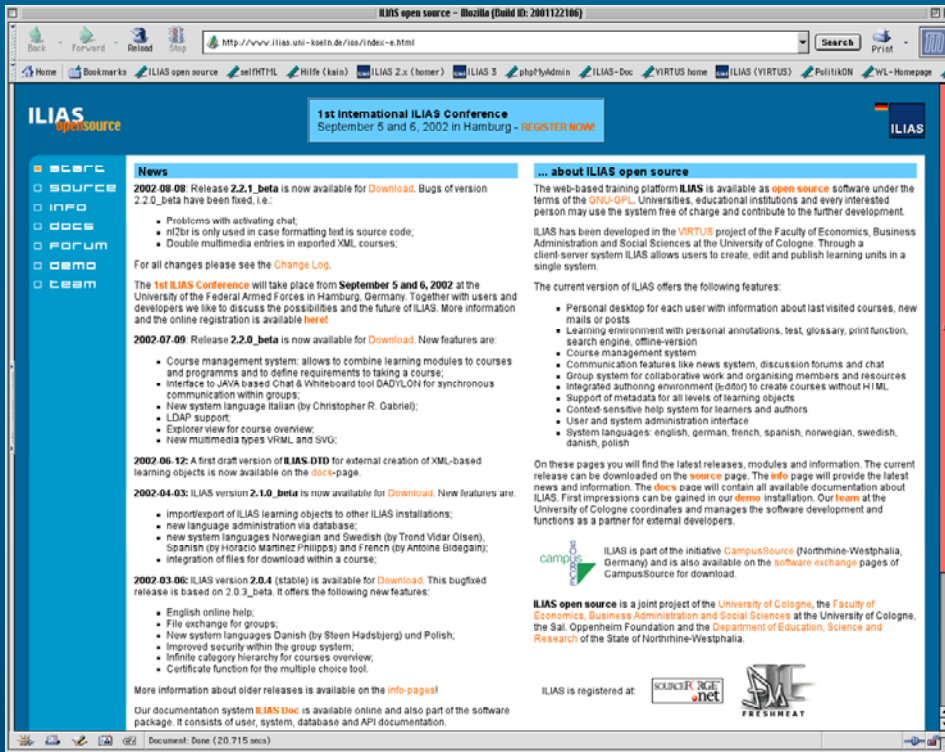
# Perspectives

- Requirements laid down have been realized
- optimization of code with regard to performance and coding conventions



## Perspectives

- Requirements laid down have been realized
- optimization of code with regard to performance and coding conventions
- appropriate way of developing for given situation



[www.ilias.uni-koeln.de](http://www.ilias.uni-koeln.de)

## Contact:

**ILIAS open source** - [ilias-info@uni-koeln.de](mailto:ilias-info@uni-koeln.de)

Prof. Dr. Wolfgang Leidhold  
Matthias Kunkel  
Boris Schürmann

Head of Project [wolfgang.leidhold@uni-koeln.de](mailto:wolfgang.leidhold@uni-koeln.de)  
Project Management [m.kunkel@uni-koeln.de](mailto:m.kunkel@uni-koeln.de)  
Software Development [boris.schuermann@uni-koeln.de](mailto:boris.schuermann@uni-koeln.de)