

**Exercise**  
**Business Informatics 2 (PWIN)**  
**Summer Term 2011**

Exercise III:  
IT Project Management &  
IC Software Development I+II

The InstantONS scenario is required in order to solve some of the exercises. It can be found in a separate document.

## IT-Project Management

### Exercise 1: IT-Projects

Explain the term “Critical Success Factors” in relation to IT-Projects and give three examples for the InstantONS Service.

### Exercise 2: IT-Project Management

What are the “SMART” project objectives? Explain them at the example of the InstantONS Service.

### Exercise 3: Quality Management

*Scalability* is an attribute for software quality. What does scalability in relation to the InstantONS Service mean? What other software quality attributes exist?

### Exercise 4: Model Development

Explain the difference between the development of a model for an IT-Project and an IT-Product.

## IC Software Development

### Exercise 5: Software Development Process Models

Name and describe three software development process models and select one of them for the InstantONS Service. Motivate your choice.

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### Exercise 6: Object Orientation (OO)

- a) One central concept of OO constitutes “Encapsulation”. Explain the idea behind this concept at the example of a class “User” for the InstantONS Service.
- b) Give an example for “Polymorphism” in relation to the InstantONS Service.
- c) What is idea of “Inheritance” for OO classes? Name one further OO concept.

### Exercise 7: UML

- a) What is the benefit of using UML for the modelling of Information Systems? What activities of software development does UML not support?
- b) What are the differences between Use Case, Activity and Class diagrams?
- c) Develop a Use Case and Activity diagram for the InstantONS<sup>®</sup> Service on based on Figure 1 of the InstantONS scenario.
- d) A meeting point in the InstantONS scenario has the following characteristics:
  - It is described by its type (e.g. hotel, cinema, etc.),
  - it has a location specified by its address (i.e. street, postal code, etc.)
  - it has specific opening hours,
  - it has a counter on how many visitors are currently at the place and,
  - it has an indicator if the place is full and no more visitors are allowed to enter

Specify the UML class “Meeting\_Point” corresponding to the description above – and especially with the OO concept “Encapsulation” in mind.

- e) Develop two example *instances* of the “Meeting\_Point” class as specified in d).