Component-Based Software Engineering	**Exercise Sheet No. 2**
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Designing Component-Based Systems

Task 1: Components

Components are the central elements of component-based systems. This tasks repeats the terminology and the fundamentals of components.

1a) Malcolm Douglas McIlroy was talking about *Components Off The Shelf*, already in 1969 [1]. What is the main idea of COTS and why would this be beneficial?

1b) What is a facet and what is facet classification? Give an example.

1c) What is a *component repository*, *a component market* and *a component trader*?

1d) What are the key modeling elements of *UML Components*? What is the graphical notation? Give an example.

1e) Why should big component-based systems be structured hierarchically?

Bibliography

1. Malcolm Douglas McIlroy, *Mass produced software components.* In: Software Engineering: Report of a conference sponsored by the NATO Science Committee, Garmisch, Germany, 7-11 Oct. 1968. Scientific Affairs Division, NATO. Januar 1969. Abgerufen am 10. Oktober 2014..

Task 2: Cheesman/Daniels

The Cheesman/Daniels process helps to identify UML-Components, by stepwise refinement, starting with a requirements specifications.

2a) What is a domain model and why is it necessary?

2b) What is a business component, according to Cheesman and Daniels?

2c) What should be visible from a component? How is that related to the *Information Hiding Principle*?

2d) How is the Cheesman/Daniels Process related to technologies like EJB, CORBA, COM+?

Task 3: Designing a Appointment manager

This task will be used as a basis for the other exercises. You can either solve the task alone or form groups with up to 4 students.

The solution must be send to `christian.piechnick@tu-dresden.de` by June 11th.

You are supposed to develop a component-based appointment management application for the university. At the university, researchers are organized in research groups and work in different projects with other researchers. A researcher has multiple appointments (i.e., research group meetings, research project meetings, visits of guests, talks at conferences, teaching appointments, student meetings). The creator of an appointment can add individual persons, groups or project members. An appointment is shared by all participants, has a title, a location, a start time, a duration and textual notes. Participants can either confirm or decline their presence. Each researcher gets informed (e.g., email, sms) when an appointment was created or changed. Every participant of an appointment can see the status (confirmed, declined) of the other participants.

3a) Design the application following the Cheesman/Daniels process. Create the required models.

3b) Create **1** PDF-File, containing your models in a readable format.

3c) Submit your solution by email to `christian.piechnick@tu-dresden.de`. If you are working in a group, please put the names and matriculation numbers of the individual group members at the first page of your document.