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## Softwaretechnik

<http://proglang.informatik.uni-freiburg.de/teaching/swt/2012/>

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### Exercise Sheet 3

In this exercise sheet, you are supposed to perform first steps towards creating an OOA model for your event management system (EMS). For the organization of a music festival, the EMS should provide the following essential features. Users of an EMS can create accounts. After successful login, users can create new events and register to existing events. Users can have different roles (regular participant, organizer, roadie, VIP, ...). Per default, the creator of a new event is an organizer of the created event, and registering to an event implies the role of a regular participant. Organizers can create new users and register them to events on their behalf. Moreover, organizers can assign roles to registered users. The registration as a regular participant implies the purchase of a ticket. The payment of tickets can be done in different ways (credit card, invoice, ...). There are different types of tickets: tickets can be valid for one day or for a longer duration. Moreover, each ticket has an assigned area (backstage, regular, all areas).

#### Exercise 1

Identify the most important classes of the EMS based on the features described above.

#### Exercise 2

Identify associations and compositions of the identified classes.

#### Exercise 3

Identify attributes and operations for each class using CRC cards.

#### Exercise 4

Provide a specification in  $F\#^1$  of the identified types. Based on this specification, apply the transformation from the lecture to get a corresponding class diagram.

#### Exercise 5

Provide a sequence diagram for the use case "buy ticket".

#### Exercise 6

Please provide some feedback about the lecture. What do you like, what could be improved?

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<sup>1</sup><http://research.microsoft.com/en-us/um/cambridge/projects/fsharp/>