Lab 1

a.

We need to design the domain model of a car rental application. The car rental application has the following requirements:

- We should be able to add new rentals, delete rentals and search rentals.
- For every rental we need to store the name, phone, email, street, city and zip code of the customer. We also need to keep track of the start date of the rental, the maximum duration of the rental and the end date of the rental.
- The application should also support the functionality reserve cars. For every reservation you make, you need to keep track of the date you reserved it.
- The application should support the fact that we have multiple cars of the same type. So we might have 8 Ford F-150 Pick-up trucks available.

Draw the class diagram of the domain model. The domain model is also called the model of the business (logic) and only contains the domain (or business) classes. The domain model does **NOT** contain technical classes like service classes, DAO classes or other technical plumbing classes.

You can draw the UML diagrams of this lab either with pen and paper or use an UML tool. If you use pen and paper, make a picture of your solution and submit the pictures of your solutions. If you use a tool, just submit a screenshot of your solution.

b.

We need to design the domain model of a webshop application for selling books. The book webshop application has the following requirements:

- We should be able to search books.
- We should be able to fill a shoppingcart with different books.
- We should be able to buy multiple copies of the same book.
- We should be able to order a content of the shoppingcart and add our customer data so it is shipped to the correct address

Draw the class diagram of the domain model

c.

Draw the class diagram of the webshop of part b, but also add the necessary technical plumbing classes like service classes, DAO classes, etc. Assume that the shoppingcart is stored in the database.

d.

Based on the class diagram of part c, draw the sequence diagram of the scenario where we add a new product to the existing shoppingcart.

How do you become a good designer?
By practicing with a lot of designs.

IMPORTANT: You only learn from this lab if you do this lab yourself. If you copy a solution from someone else, then this is in violation with the academic honesty policy of the university and the penalty will be a NC for the course.

What to hand in?

You can submit a zip file with your solutions in sakai. All labs that you submit in sakai should contain a **readme.txt** file with the following statement:

I hereby declare that this submission is my own original work and to the best of my knowledge it contains no materials previously published or written by another person.

[your name as signature]

If you do not have this readme.txt file, you don't get credit for your lab submission.