SD1, week 9

# Lab sheet:
# Creating and using Objects.

## Task 6A: Extend Clock Display

(Also see exercises 3.31-3.32 in BlueJ Book/5th Ed.)

Donwload lab6 src from vision and create a folder "SD1code/lab5" in eclipse. Now you should have a package "clockDisplay". Make yourself familiar with the classes contained in this package. Note that we have discussed **`ClockDisplay.java`** and **`NumberDisplay.java`** in class. You don't have to understand the details of **`Clock.java`**.

1. Write a main method in **`Clock.java,`** which starts a new clock.

2. Draw a class diagram, which includes the Clock class (using pen and paper).

3. *Challenge exercise*: Change the clock from a 24-hour clock to a 12-hour clock. This is not as easy as it might first seem:

   In a 12-hour clock, the minutes after midnight and midday are shown as 12:30 (NOT as 00:30).

   There are (at least) two ways how to do this:

   a) Store hour values from 1to 12 and adjust the updateDisplay() method in ClockDisplay.
   b) Leave the 24-hour clock unchanged and simply change the way how it is displayed in updateDisplay().

   Which one is better from a Software Engineering point of view? Why?

## Task 6B: Love Letters

(Also see exercises 3.34,3.35, 3.40 in BlueJ Book/5th Ed.)

Open the mailSystem project in folder folder "SD1code/lab6" and make yourself familiar with the code. Set up a scenario of investigation:

1. Create a new class called "`LoveLetter`". This class has **3 fields**, which get instantiated in its constructor: A mail server and two mail clients for the users "Sophie" and "Juan" (you should name the instances "`sophie`" and "`juan`").

2. Write a method called `start()` which calls the method `sendMailItem` on Sophie's client, as well as the method `printNextMailItem` on Juan's client.

3. Create a `main` method, which runs the LoveLetter class.

4. Describe what happens when messages are getting send and read. Draw an object diagram of the situation.