

Lab sheet:
Creating and using Objects.
Setter: Katrin Lohan

Attempt Task 6A in the tutorial and finish Task 6B in the lab.

Task 6A: Extend Clock Display

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

Download 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 1 to 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 "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.