

# Programming A

## 5th Weekly Note (E10, Week 39)

### Reading for Week 39

Section 4.3 in “Noter og opgaver”;

Look at the class “HashMap” in the Java class library:

(<http://download-llnw.oracle.com/javase/6/docs/api/>).

### Lecture: Tuesday, September 28, 10-12 (U140)

In this lecture we repeat the topic of iteration. Then we introduce hash-based maps. Finally, we have a short look at the first part of the project.

### Exercises: see schedule for time and room

Design, implement, and tests a program that satisfies this specification:

- A member in a sports club is identified by a member number (integer), his or her name (String), and a birth date (String, for example “21102001”). Write a class that implements the type Member. The constructor function should have the three components as arguments.
- The class Member should have three methods to obtain the value of the three components (getNumber, getName, getBirthDate).
- The class member should implement the interface Comparable. Here, compareTo should order according to the name. If two members have the same name, the lower member number should come first.
- There should be a method getAge in the class Member, that returns the age of some member as an int. You can assume that we use the class on December 31, 2010.
- There should be a class MemberList that implements a list of members in our sports club. This should have the following methods:

- The constructor function should create an empty member list.
  - `newMember` should take a member number, name, and birth date as arguments and create a new member and add it to the list.
  - `youngMembers` should return a sorted `ArrayList` of members that are less than 25 years old.
- Write a main program that tests the class `MemberList` with all its functionality.

**Lab: see schedule for time, IMADA's terminalrum**

Continue with implementing and testing the sports club program from the exercise.

If you are done with the specified functionality, add a method to `MemberList` that randomly selects a team of a given size. To this end, look at the class “`Random`” in the Java class library.