

## **Programming Assignment Sheet 1**

Please implement programming assignments in one of the following programming languages:

- Java
- Python (preferred v2.7)
- C++

Send your solution via eMail to christoph.doell@iws.cs.uni-magdeburg.de at least 3 days before the exercise. Remember: *Code is read more frequently than it is written.*

So, please add helpful comments to your source code and if necessary documentation on the compilation process.

### **Programming Assignment 1      $\alpha$ -cut Representation**

Implement the data structure from the lecture that can horizontally represent a fuzzy set by its  $\alpha$ -cuts. In detail, solve the following subtasks.

- a) Enable the user to enter a finite subset  $L \subseteq [0, 1]$  of relevant degrees of membership.
- b) For every  $l \in L$ , the user shall be able to specify the  $\alpha$ -cuts corresponding to  $l$ .
- c) Finally, implement a method that returns the membership degree  $\mu(x)$  of an element  $x$  given your data structure of a fuzzy set.