Lehrstuhl für Computergestützte Modellierung und Simulation
TUM School of Engineering and Design
Technical University of Munich

Professional Software Engineering

Assignment 3
Submission Deadline: 11th December

1 Instructions

This assignment task is pure UML and you'll be working in groups of 3. Make sure all names and group numbers are on the diagrams. As always, submission has to be done via moodle but only one person from a group has to make the submission.

2 Class Diagram

You are responsible for the SoftwareLab course from the Chair of Computational Modelling and Simulation this year. You want a new program to support you at distributing all people among the teams. You do not want to change any of the distribution rules as they work quite well with the students. Since there is not one, but **n** solutions you will need an optimization library. Since you start out professionally, you create a class diagram to help you and your chair at developing this program. Here is some helpful information:

- Every student should be identified by their LRZ identifier
- The program should map the general selection process of the **SoftwareLab**. Refer to first two pages of *SoftwareLab_Guidelines_2022.pdf*
- The optimization is done by a separate library.
  - You will need different configurations of the choices of students and projects, and evaluate them by a cost function.
  - These configurations should be created randomly but it should be easy to create different procedures (since you are a specialist, think about one more!)
  - You will pass these configurations to the optimizer (part of the external library)
- Do not forget about the supervisors that present the topics.
- Since you want to save time on a second run, each created configuration should be exportable to and importable from an XML-File.
- Students, Topics and Supervisors should be exportable as well

As a first sketch, it is enough to model the process roughly. Think about the 4 most important things a class will need. Make use of association, aggregation and composition.

3 Activity Diagram

After you are done with the classes, you want to explain the general process of selection with this new software tool to the students. As this should be as transparent as possible and you love UML process diagrams, you decide to go for an *Activity Diagram*. Think about what the steps in the overall selection process are. Try to model every substep as precise as needed to make the selection process transparent. It should be clear what is done by the students, you and the software. Obviously, every communication is done by email or Pokémon Cards (you decide).