
Software Engineering

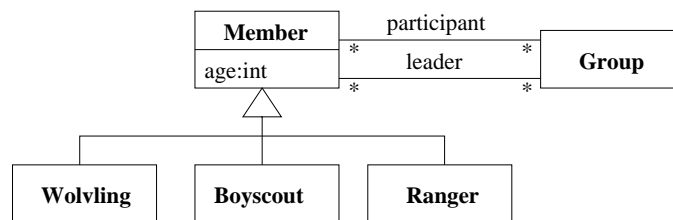
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Exercise Sheet 10

Deadline: June 28th, 2005

Exercise 1 – OCL: (5 points)

The following class diagram models a boyscout group:



Implement the following constraints in OCL:

1. **Wovlings** have to be between 7 and 11 years old.
2. Every **Group** has at least one **leader** who is a **Ranger**.
3. Every **Ranger** leads at least one **Group**.
4. All **leaders** of a **Group** are at least 16 years old.
5. Every **Group** has at least 1 **leader** per 15 **members**.

Exercise 2 – Design Patterns: (5 points)

Some commands shall be executed on a computer at specific times or after specific time intervals (cronjobs). So they all have to know the system time and get informed if it changes. Which Design Pattern can be useful in implementing this behaviour?

Draw a class diagram of this problem.

Implement this system. Assume that the system clock only stores a number of seconds. Give one Cronjob class as stub, e.g. leaving out the functionality it implements but giving only the framework.