"Programming"
Requirements for the Semester-Project 2019

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1 General Comments and formal requirements

To show the successful acquisition and mastery of the course content thought in the class "Programming", the students need to propose and carry out a final project that applies this knowledge to a problem of their choice. Several **randomly chosen projects and speakers** will present the project on the last day of the course—that is, on Monday, 27th of May.

A presentation is supposed to be 15' long (12' presentation, and 3' for Q&A). **Note: The presentation will not be part of the grade.**

Every team needs to have a presentation prepared on that day and a representative present during class who can present the research project. Being unable to do so will result in a mark of zero points for the semester project.

Question regarding the details should be directed to Martina Fraschini (martina.fraschini@unil.ch)

- 40% of the final grade will be based on submitting a project that provides evidence of the student's ability to apply what she/he learned during class.
- The grading will be based on several formal factors that are listed below as well as on the originality and complexity of the project.
- We allow a maximum of 3 students work jointly on a project, however, they need to notify the TA of the course (Martina Fraschini).
- By the **10th of April 2019**, the students need to inform the TA about the proposed project by a) submitting a 200-word proposal, and b) about who the team members of the project are. Based on the TA's sign-off regarding the scope and complexity of the proposed project, it then can be undertaken.

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- Due date of the semester project is Sunday, **26th of May 2019, 24.00h**. No late hand-in is accepted. A late hand-in will result in a grade of 0 (zero) points for the project.
- The semester project will be submitted to Martina Fraschini (martina.fraschini@unil.ch).

2 Grading

The grading will be based on three factors—that is, i) satisfying the formal factors (listed below), as well as on ii) complexity of the project and iii) the originality of the project.

2.1 Formal Factors

- At the due date, 2 parts have to be submitted. i) a research paper, of about 10 pages length (without references), ii) the source code (and auxiliary data if existing) to carry out the programming project.
- The research paper will be submitted as a pdf format, and in the SIAM conference style (style files and examples are provided).
- The submitted research paper needs to contain the following mandatory 8 sections
  - 1. Abstract
  - 2. Introduction
  - 3. Description of the research question and the relevant literature
  - 4. The methodology/algorithm applied to the address the research question, and potentially its complexity
  - 5. A discussion of the implementation of the algorithm (code), and, if possible, its parallel implementation and performance
  - 6. A description on how to maintain and update the code base (by using git, unit testing, etc...)
  - 7. Results
  - 8. Conclusion
- Additional sections such as parallel scalability are permitted if they make sense in the context of the project.