Final project instructions

June 6, 2021

1 PROJECT DESCRIPTION

In your projects, you will use the ideas and techniques you learned in class in order to solve a new problem on your own.
First, choose a problem. Define and describe it, explain why it is not trivial and why it is interesting.
Second, implement two different ways to solve your problem. You are encouraged to go over course material and decide what chapters are relevant to your project. What are the assumptions on your problem's world? What algorithms best fits your needs? What algorithms has no chance of working on this setup? Implementation may use external libraries, code snippets or be based on your previous exercises, but you must properly reference all imported code fragments and cite the original authors.
Third, write a report. Measure your solutions' performances and present the results. Explain the differences between solutions and compare it with trivial bounds.
Forth, Present your work. Make a short story (a video presentation, about 6-8 minutes long) presenting your project to your colleagues. Try to separate the wheat from the chaff - supply motivation to your work and talk about the important details and results, but omit unimportant technicalities.
Fifth, Peer review. Ask a meaningful question on others' presentations. Exact matching and further instructions will be published after project submission.

2 SCHEDULE

Make sure you are preforming the following steps before their deadlines (Remember: sooner is better!). These dates are tentative and might change.
ASAP - Sign as a group on the course Moodle.
11/7 - Hand out your projects proposal, as described on the projects recitation.
31/8 - submit your final project.
7/9 - finish peer review task.

3 GRADING

Each projects will be checked and evaluated according to the following aspects:

Choosing a Problem (5%): Did you choose a reasonable problem? Is it hard enough so classic programming techniques won't be able to solve it too easily?
Solutions (15%): Do your solution ideas make sense? Did they have any chance of working in the first place?
Modeling (10%): Problems are highly detailed and very down-to-earth creatures. Algorithms are abstract and generalized ideas. Have you managed to connect them without breaking anything? Were the essential parts of both the algorithm and the problems taken in to account in your project? Were any details you neglected more than just minor details?
Working algorithm (5%): It should work (also for us! include instructions for running your code).
Performance Measurements (5%): You measured some properties of your results. Are these measurements meaningful? Are they random? Are they too coarse to reveal meaningful differences between different runs?
Presenting results (10%): Did you present your results in a clear and a reasonable way? Can we look at your graphs and understand what actually happened?
Result analysis (10%): Are your conclusions consistent with the results you got? Were you able to criticize your own work? Have you noticed weird anomalies or could you spot mistakes, and can you explain what is going on?
Impressive result (5%): Have you managed to actually solve the problem you were working on? Did you get non-trivial results? Can your solution beat you/state-of-the-art/standard methods on this specific setup?
Report (15%): Is your report well-written? Does it contradict itself?
Story (15%): Except for being cool and catchy, does your story presents the essentials of your work? Is watching it is generally a positive experience?
Peer review (5%): Could you ask ***meaningful*** ***questions*** about your colleagues works?
Bonus (5%): If we noticed something really problematic or pretty awesome that was not graded in any other way, you will get it here

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The projects final grades will be a normalized version of the individual evaluations, according to the Faculta's instructions.

4 GET SUPPORT

If you are stuck or unsure about any part of the project- please contact the course staff. Extra office hours will be given on the project period. You are more than welcome to consult with us, and we will do our best to direct and guide you on this task.
Please contact us as soon as you discover a problem, it might take a few days until we are free to meet you, so don't wait for the last minute.

We are exited to see your projects! Good luck!