DM207 I/O-Efficient Algorithms and Data Structures

Fall 2015

Exam Topics

1. External sorting, upper and lower bounds.

2. External searching in 1D.

3. External priority queue.

4. External interval trees.

5. External 2D range searching.

6. External graph algorithms: list ranking, Euler tour on trees.

7. External graph algorithms: BFS on undirected graphs.

8. External graph algorithms: MST on undirected, weighted graphs.

9. Cache-oblivious algorithms: searching.

10. Cache-oblivious algorithms: sorting.

The exam takes place January 26 in U28A, with preparation in U29A. The first person draws a topic at 09:30 and is examined at 10:00. Every 30 minutes, another student draws. The order of persons will be mailed to you.

The examination period, including grading, etc., is 30 minutes. The exam is with preparation—thus, after you draw a random topic among those above, your are allowed around 30 minutes on your own in another room to rehearse your presentation. At the exam, you should make a presentation of around 17–19 minutes of the topic (or some central and interesting part of it) using the blackboard (you cannot bring transparencies—however, you can bring a short list of keywords/talk outline, which should be used as sparingly as possible). The examiner and the external examiner may ask brief questions during your presentation. Afterwards, they may ask questions related to the topic, and to the rest of the curriculum. The oral exam is not based on the projects of the course.

The exact curriculum is what is mentioned under "Reading" on the course web page (respecting the reading guides stated).