Study Guide Exam 1

What shall you prepare for Midterm 1:

* The topics covered in the weeks 1 through 6.
* The exercises from the homework done in class during weeks 2 through 6.

| **List of Topics** | **Textbook Chapters** |
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| Algorithmic Problem Solving  Efficiency Analysis: RAM model, step counting, asymptotic classes, Big O  Lower bounds and Big Ω notation, tight bound | Syllabus  1-3 |
| General computational problems |  |
| Linear sorting Fundamental data structures | 8  10, 12, 22 |
| Topological sorting  Dynamic programming | 22.4  15 (only what was covered in class) |
| Divide-and-conquer (Master theorem; Mergesort, Binary Search)  Binary search: BST, B-tree (including search in B-tree, but not split & insert & delete) | Chapter 4  Chapter 12, 18 |