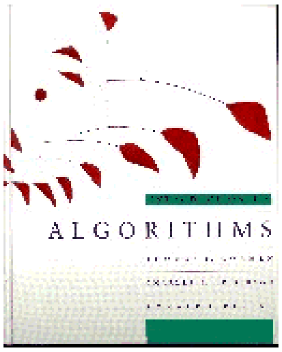

6.046J/18.410J Introduction to Algorithms
Fall 1998

References

The primary written reference for the course is:
Cormen, Leiserson, Rivest. *Introduction to Algorithms Algorithms.* MIT Press, 1989.

The following books are useful references. Copies of some books have been placed on reserve in the Barker Library and/or in the Laboratory for Computer Science Reading Room. This list is also available as Postscript file

1. Alfred V. Aho, John E. Hopcroft, and Jeffrey D. Ullman. *The Design and Analysis of Computer Algorithms.* Addison-Wesley, 1974. The classic text, but it lacks topics in network flows and linear programming, as well as more recent algorithms.

2. Alfred V. Aho, John E. Hopcroft, and Jeffrey D. Ullman. *Data Structures and Algorithms.* Addison-Wesley, 1983. Revised and more elementary version of the first six chapters of *The Design and Analysis of Computer Algorithms*.

3. Sara Baase. *Computer Algorithms: Introduction to Design and Analysis.* Second edition. Addison-Wesley, 1988. General reference, although the exposition is sometimes terse or sketchy.

4. Jon Bentley. *Programming Pearls.* Addison-Wesley, 1986. Applications of algorithm design techniques to software engineering.

5. Jon Bentley. *More Programming Pearls.* Addison-Wesley, 1988. More applications of algorithm design techniques to software engineering.

6. Jon Louis Bentley. *Writing Efficient Programs.* Prentice-Hall, 1982. Performance hacking extraordinaire.

7. Gilles Brassard and Paul Bratley. *Algorithmics: Theory and Practice.* Prentice-Hall, 1988. Good examples and problems. Focus on methods rather than specific problems.

8. Kai Lai Chung. *Elementary Probability Theory with Stochastic Processes.* Springer-Verlag, 1974. Intuitive introduction to probability.

9. Shimon Even. *Graph Algorithms.* Computer Science Press, 1979. Broad treatment

of graph algorithms, including network flow and planarity.

10. William Feller. *An Introduction to Probability Theory and Its Applications.* John Wiley & Sons, 1968 (Volume 1), 1971 (Volume 2). Excellent reference for probability theory.

11. Michael R. Garey and David S. Johnson. *Computers and Intractibility: A Guide to the Theory of NP-Completeness.* W. H. Freeman & Co., San Francisco, 1979. Reference book devoted to NP-completeness. The second half contains an extensive list of NP-complete problems and references to algorithms in the literature for polynomial-time special cases.

12. G. H. Gonnet. *Handbook of Algorithms and Data Structures.* Addison-Wesley, 1984. Code in Pascal and C, comparisons of actual running times, and pointers to analysis in research papers.

13. Dan Gusfield. *Algorithms on Strings, Trees, and Sequences* Cambridge University Press, 1997. General treatment of algorithms that operate on character strings and sequences.

14. Ellis Horowitz and Sartaj Sahni. *Fundamentals of Computer Algorithms.* Computer Science Press, 1978. Good on data structures, dynamic programming, and branch-and-bound algorithms.

15. Jeffrey H. Kingston. *Algorithms and Data Structures: Design, Correctness, Analysis.* Addison-Wesley Publishing Co., 1991. A nice introductory book on data structures, with a good chapter on algorithm correctness.

16. Donald E. Knuth. *The Art of Computer Programming.* Addison-Wesley. Encyclopedic work in three volumes: (1) Fundamental Algorithms, (2) Seminumerical Algorithms, and (3) Sorting and Searching.

17. Eugene L. Lawler. *Combinatorial Optimization.* Holt, Rinehart, and Winston, 1976. Graph algorithms (dense graphs), network flows, and linear programming. First few chapters are excellent.

18. C. L. Liu. *Introduction to Combinatorial Mathematics.* McGraw-Hill, 1968. Combinatorial mathematics relevant to computer science. Excellent problems.

19. Udi Manber. *Introduction to Algorithms.* Addison-Wesley, 1989. Elementary text with an emphasis on creativity.

20. Kurt Mehlhorn. *Data Structures and Algorithms.* Springer-Verlag, 1984. Three volumes: (1) Sorting and Searching, (2) Graph Algorithms and NP-Completeness, and (3) Multi-dimensional Searching and Computational Geometry. Lecture notes on basic and advanced topics.

21. Ivan Niven and Herbert S. Zuckerman. *An Introduction to the Theory of Numbers.*

John Wiley & Sons, 1980. Readable introduction to number theory.

22. Christos H. Papadimitriou and Kenneth Steiglitz. *Combinatorial Optimization: Algorithms and Complexity.* Prentice-Hall, 1982. Linear programming and its variants.

23. William P. Press, Brian P. Flannery, Saul A. Teukolsky, and William T. Vetterling. *Numerical Recipies in C: The Art of Scientific Computing,* Cambridge University Press, Cambridge, 1988. Code for numerical algorithms.

24. E. M. Reingold, J. Nievergelt, and N. Deo. *Combinatorial Algorithms: Theory and Practice.* Prentice-Hall, 1977. Good on recurrence relations and binary search trees.

25. Robert Sedgewick. *Algorithms.* Second edition. Addison-Wesley, 1988. Elementary text with an excellent breadth of topics. Light on analysis, but lots of figures.

26. Michael Sipser. *Introduction to the Theory of Computation.* PWS Publishing Co., 1997. A good text on computability and complexity theory.

27. Robert Endre Tarjan. *Data Structures and Network Algorithms.* Society for Industrial and Applied Mathematics, 1983. Advanced book with tons of good stuff.