

Homework 5

CSc 72700: Analysis of Algorithms

CUNY Graduate Center, Fall 2001

Due Wednesday, 7 November 2001

See the guidelines on the webpage for details about submitting homework. (If turning your homework in electronically, you can mail it directly to the grader at: ivm3@columbia.edu.)

Practice Problems

The problems in this section **are not to be submitted**. They are to help you understand the material, and some will appear on exams.

- Exercise 19.1-4, p 386 (in the second edition: 18.1-4 on p 441).
- Exercise 16.1-3, p 309 (in the second edition: Exercise 15.2-4, p 338).
- Exercise 17.2-1, p 336 (in the second edition: Exercise 16.2-1).
- Exercise 17.3-1, p 344 (in the second edition: Exercise 16.3-1, p 392).
- Exercise 17.3-2, p 344 (in the second edition: Exercise 16.3-2, p 392).
- Exercise 17.3-8, p 344 (in the second edition: Exercise 16.3-8, p 392).
- Consider the two sequences:

X: AACGTTACCGATATATTT

Y: CAGTACGATGT

Find:

1. longest common subsequence (algorithm is in the textbook)
2. the pairwise alignment with no penalty for gaps (see the webpage, titled “Dynamic Programming Tutorial”).
3. the pairwise alignment with a penalty for gaps (see the webpage, titled “Advanced Dynamic Programming Tutorial”)

Graded Problems

These problems will be graded and should be submitted, following the guidelines on the webpage.

1. Stacks on Secondary Storage, 18-1 on p 452 (in the second edition, 19-1 on p 398).
2. Printing Neatly, 16-2, p 325 (in the second edition, 15-2 on p 364).
3. Making Change, 17-1, p 353 (in the second edition, 16-1 on p 402).