

Programming Assignment #2

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Matrix-chain multiplication

Implement the question 15.2-2 in page 378 of the textbook.

Note: To simplify the logic, you may simply use brute-force matrix multiplication. That is, you concentrate on implementing the best multiplication sequence only and then perform the multiplications according to your chosen sequence.

Input format: all matrix entry values are in "%20.13e" format.

Line 1: N ← number of matrices to multiply

Line 2: $d_1 d_2$ ← dimension of first matrix

Line 3: d_2 matrix entry values of row 1 separated by tab

...

Line 2+ d_1 : d_2 matrix entry values of row d_1 separated by tab

... same for second matrix of dimension $d_1 \times d_2$

...

... same for last matrix of dimension $d_N \times d_{N+1}$

Output format:

Line 1: $d_1 d_{N+1}$ ← dimension of result matrix

Line 2: d_{N+1} matrix entry values of row 1 separated by tab

...

Line 2+ d_1 : d_{N+1} matrix entry values of row d_1 separated by tab

Student Name:

Student ID:

Grading:

(50%) Correctness

(10%) Documented time and space complexity analysis

(10%) Performance ranking in class

(5%) Coding style and documentation

(5%) Clean compilation

(15%) Modular design, test case design, golden generation

(5%) Automation, performance data capture and/or comparison

(-20%) Late penalty per day

(-5%) Special service penalty

Total score: 200

Final score: