Design and Analysis of Algorithms Lab
Academic Year: 2020 - 21

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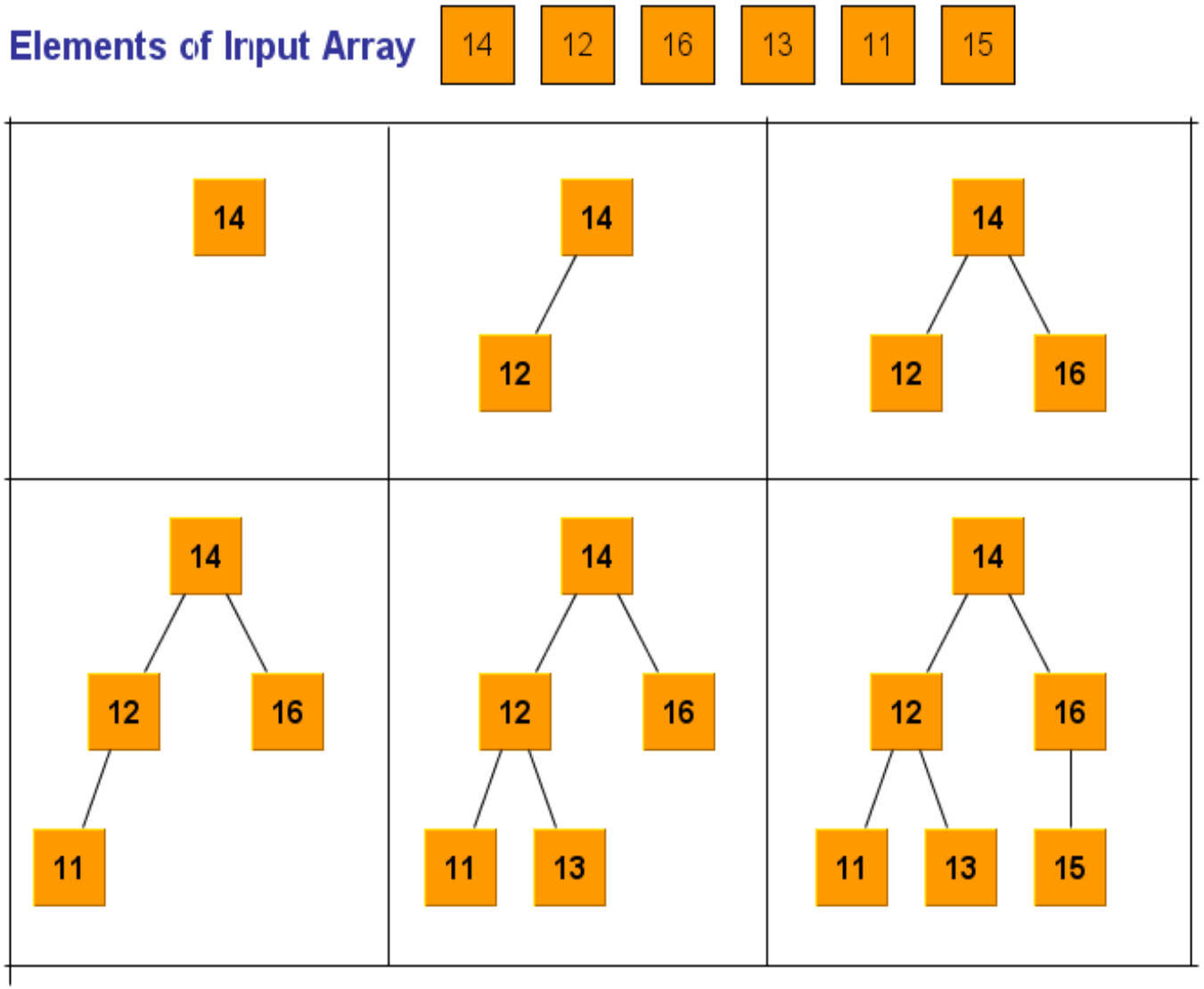
DAA Lab 4 Due Date: March 02, 2021

1. Use a Tree Sort technique to sort a set of student records by considering Hall Ticket Number.
2. Develop a program to multiply two square-matrices of order 1024 X 1024 using Block Matrix Multiplications by considering the block sizes: 4, 8, 16, 32, and 64. Use *gettimeofday*() for calculating *runtime* (the average of 5 runs). Draw a plot using *runtime* and block-size.

Note:

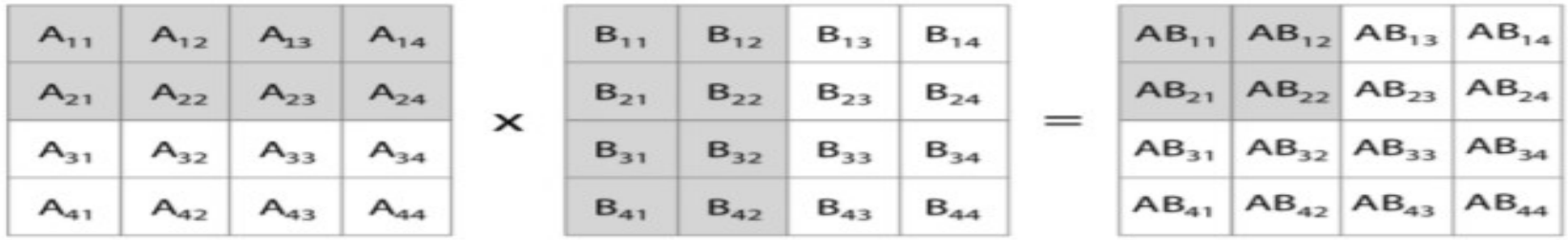
- Input should be read from a file **DAALab_input1.txt**
- Output should be written into a file **DAALab_output1.txt**

Logic: Tree Sort

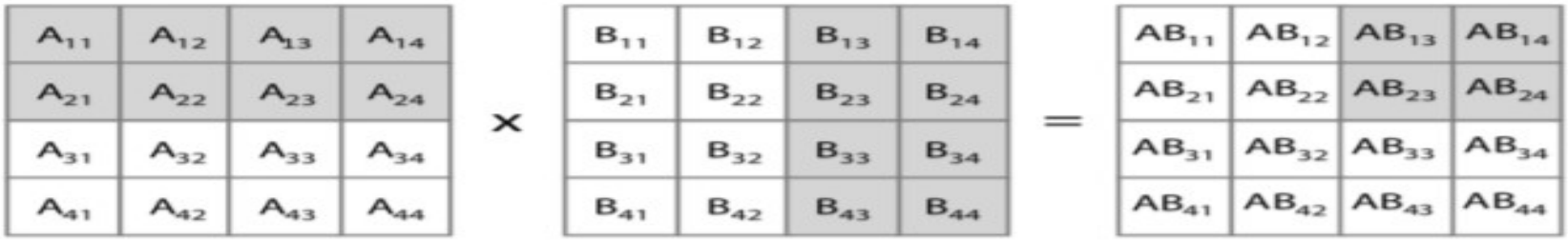


Logic: Block Matrix Multiplication

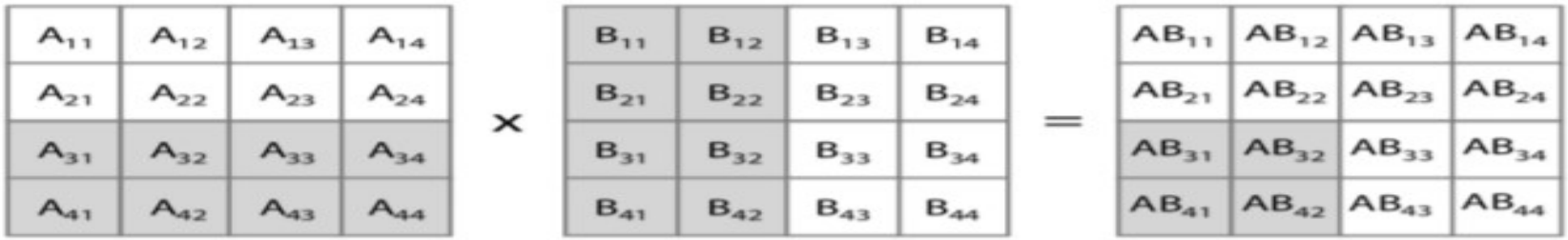
a)



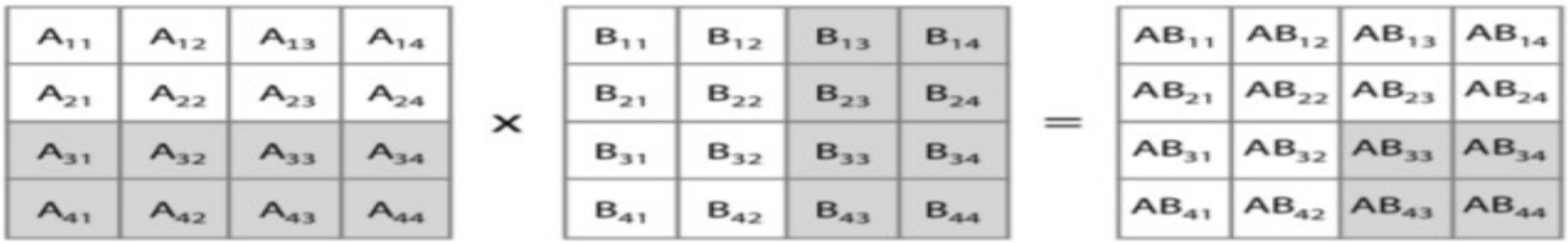
b)



c)



d)



DAA Lab Submission Guide Lines

- Mail-ID: cs203.daa.mec@gmail.com (Doubt Clarification).
- Submission Link will be shared.
- Late Submission (<=3-Days):50% weightage will be given.
- Write a readme file to understand your solutions.
- Submit source files only (C or JAVA).

Lab Weightage - 30%.
Lab Instructor: Sri. Brahmaiah G

DAA (Design and Analysis of Algorithms) Lab

Reference Books:

1. Introduction to Algorithms, 3rd edition, T.H.Cormen, C.E.Leiserson, R.L.Rivest and C.Stein.
2. Fundamentals of Computer Algorithms, Ellis Horowitz, Satraj Sahni and Rajasekaran.
3. Algorithms, 4th edition, Robert Sedgewick.
4. Design and Analysis of Computer Algorithms, Aho, Ullman, and Hopcroft.

Web Resources:

1. Algorithms by Robert Sedgewik
2. Algorithms by Abdul Bari
3. MIT - Open Courseware Videos on Algorithms
4. Data Structures and Algorithms