

Deadline: 17th October 2022

Sheet Link: [Student Details: DSA for FAANG preparation with Python and JavaScript \(21 Aug 2022\): By Priya Bhatia \(google.com\)](#)

Try to write every code in optimized time complexity and make sure you are mentioning the time and space complexity for the same while making the submissions.

[Strassen's Matrix Multiplication](#) (Exploration)

1. Given two square matrices of size A and B of size $n * n$, find their matrix multiplication.
[Hint: Try to solve the given problem using the Divide and Conquer Approach]

[Median of Two Sorted Arrays](#) (Apple)

2. Given two sorted arrays num1 and num2 of size m and n respectively, return the median of the two sorted arrays.

[Pow\(x,n\)](#) (Facebook)

3. Implement pow(x,n) which calculates x raised to the power n (i.e. x^n)
For example: $x = 2.00000$, $n = -2$
Output: 0.25000
Explanation: $2^{-2} = \frac{1}{2^2} = \frac{1}{4} = 0.25$

[Divide Two Integers](#) (Facebook)

4. Given two integers, dividend and divisor, divide the two integers without using multiplication, division, and mod operator.
5. Do the implementation of the count of a number of inversions, for logical understanding and intuition behind the same, refer live session Lecture 17.