Lab W1D3

Question 1. Write an algorithm

beautiful(A, n)

Input : An integer array with n elements

such that the best-case running time is equal to the worst-case running time. Write the algorithm and give your analysis to justify your claim.

Question 2. Order them based on their complexity.

2^n , 2^(2n), 2^(n + 1), 2^(2^n) (Note: ^ stands for exponent operation. Example: 2^n = 2^n)

Question 3. Mention one algorithm you know for each of the time complexities listed.

O(1), O(log n), O(n), O(n log n), O(n^2), O(n^3), O(2^n)

Question 4. Apply Master Theorem and determine the time complexity of

fib(n) shown in Lesson 2. If you cannot apply Master Theorem please give detailed explanation.

Have fun!