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Weekly Update

Topic covered this week :

- 1. Recursion**
- 2. Prime factorization**
- 3. Binary Exponentiation**

Binary Exponentiation

What is Binary exponentiation?

Ans : Binary Exponentiation or Exponentiation by squaring is the process of calculating a number raised to the power another number (AB) in Logarithmic time of the exponent or power, which speeds up the execution time of the program.

Case 1: If $B = 0$, whatever be the value of A , our result will be 1.

Case 2: If B is an even number, then instead of calculating (AB) , we can calculate $((A^2)^{B/2})$ and the result will be same.

Case 3: If B is an odd number, then instead of calculating (AB) , we can calculate $(A * (A^{(B-1)/2})^2)$,

Recursion

What is Recursion?

Recursion in C++ is a technique in which a function calls itself repeatedly until a given condition is satisfied. In other words, recursion is the process of solving a problem by breaking it down into smaller, simpler sub-problems.

Prime Factorization

Prime factorization is a method to find the prime factors of a composite number. A composite number is a number that has more than two factors, and a prime number is a number that has only two factors,

i.e. 1 and the number itself. Prime factorization is done by dividing the composite number by the smallest possible prime number, and repeating the process until the quotient is a prime number. The prime factors are the prime numbers that divide the composite number evenly.



THANK YOU