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Practical No. 8

Aim:- To implement Euclid's Algorithm to compute GCD.

Theory:

The Euclidean algorithm is a way to find the greatest common divisor of two positive integers. GCD of two numbers is the largest number that divides both of them. A simple way to find GCD is to factorize both numbers and multiply common prime factors.

Algorithm :

- If we subtract a smaller number from a larger one (we reduce a larger number), GCD doesn't change. So if we keep subtracting repeatedly the larger of two, we end up with GCD.
- Now instead of subtraction, if we divide the smaller number, the algorithm stops when we find the remainder 0.

Sample Input and Output:

GCD(10, 15) = 5

GCD(35, 10) = 5

GCD(31, 2) = 1

Conclusion: Euclid's Algorithm to compute GCD is implemented Sucessfully.

Viva Questions:

Q. 1 What is Concept of co-prime?

Q. 2 What is use of GCD in Cryptography?

Q. 3 What is Euler's Totient?