

**Least Common
Multiple**

**Arabic C++
Coding**



Least Common Multiple

Least Common multiple is the least number that is a multiple of a and b it means it divides a and b

$$a=3$$

$$b=8$$

$$\text{lcm}(a,b)=24$$

$$3=3$$

$$8=2*2*2$$

$$\text{lcm}(3,8)=24=2*2*2*3$$

$$a=6$$

$$b=18$$

$$\text{lcm}(a,b)=18$$

$$6=2*3$$

$$18=2*3*3$$

$$\text{lcm}(6,18)=18=2*3*3$$

Least Common Multiple

$$a=2*2*3*3*5*7$$

$$b=2*3*5*5*7*7$$

$$\text{lcm}(a,b)=2*2*3*3*5*5*7*7$$

$$a*b=2*2*2*3*3*3*5*5*5*7*7*7$$

$$\text{gcd}(a,b)=2*3*5*7$$

we can use prime factorization
or for loop (as we did in the gcd)

in gcd we take the minimum repetition
of prime factors
in lcm we take the maximum repetition of
prime factors

$$\text{lcm}(a,b)=(a*b)/\text{gcd}(a,b)$$