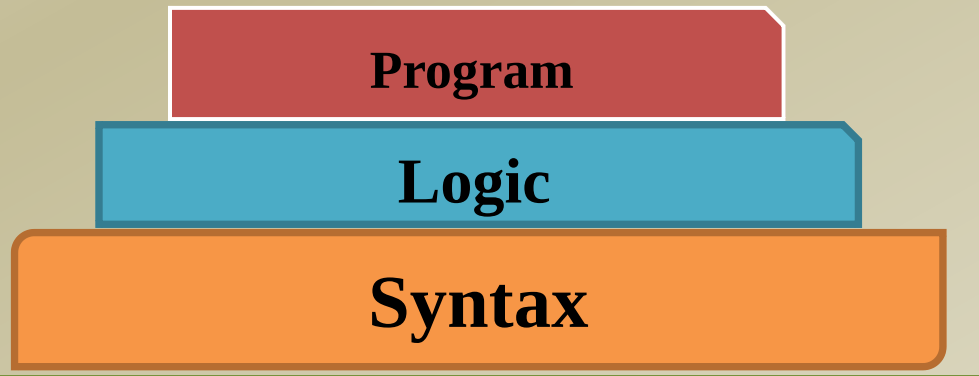
Code at Random (OPC) PVT. LTD.

Program To Find LCM of two numbers without using HCF



What is LCM??

- The **least common multiple**, of two integers *a* and *b*, is the smallest positive integer that is divisible by both *a* and *b*.
- **Example:- LCM of 12 and 20**

12 and 20

2	12	20
3	6	10
2	2	10
5	1	5
	1	1

LCM = 2 X 2 X 3 X 5 = 2^2 X 3 X 5 = 60

Finding LCM in Mathematics

LCM by Listing out the Multiples

Find the LCM of 5 and 6

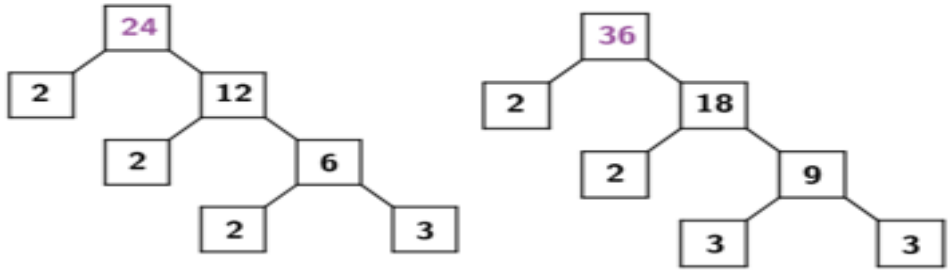
Multiples of 5: 5, 10, 15, 20, 25, 30, 35, ...

Multiples of 6: 6, 12, 18, 24, 30, 36, ...

Least Multiple common in both numbers is 30

LCM using Prime Factorization

Find the LCM of 24 and 36



Box the common factors, list the numbers in each box once.

24 = 2 x 2 x 2 x 3

36 = 2 x 2 x 3 x 3

LCM: 2 x 2 x 3 x 2 x 3 = 72

LCM using Repeated Division

Find the LCM of 24 and 36

	24	36
2	12	18
2	6	9
3	2	3

LCM: 2 x 2 x 3 x 2 x 3 = 72

Getting Idea of Program

- In this program, the integers entered by the user are stored in variable a and b respectively.
- The largest number among a and b is stored in a. The LCM of two numbers cannot be less than a.
- The first common multiple will be their LCM.
- Set the first multiple m=a {largest number}.
- Now, find the next multiple of a by m=m+a; until we will find our multiple which can divide the smallest number.

Final Program

```
import java.util.*;
class lcm {
    public static void main(String[] Args) {
        int a,b,m,t;
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter two numbers");
        a=sc.nextInt();
        b=sc.nextInt();
        if(a<b) {
            t=a;
            a=b;
            b=t;
        }
        m=a;
        while(m%b!=0)
            {
                m=m+a;
            }
            System.out.println("LCM Is"+m);

    }
}
```

Happy Learning!!

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