

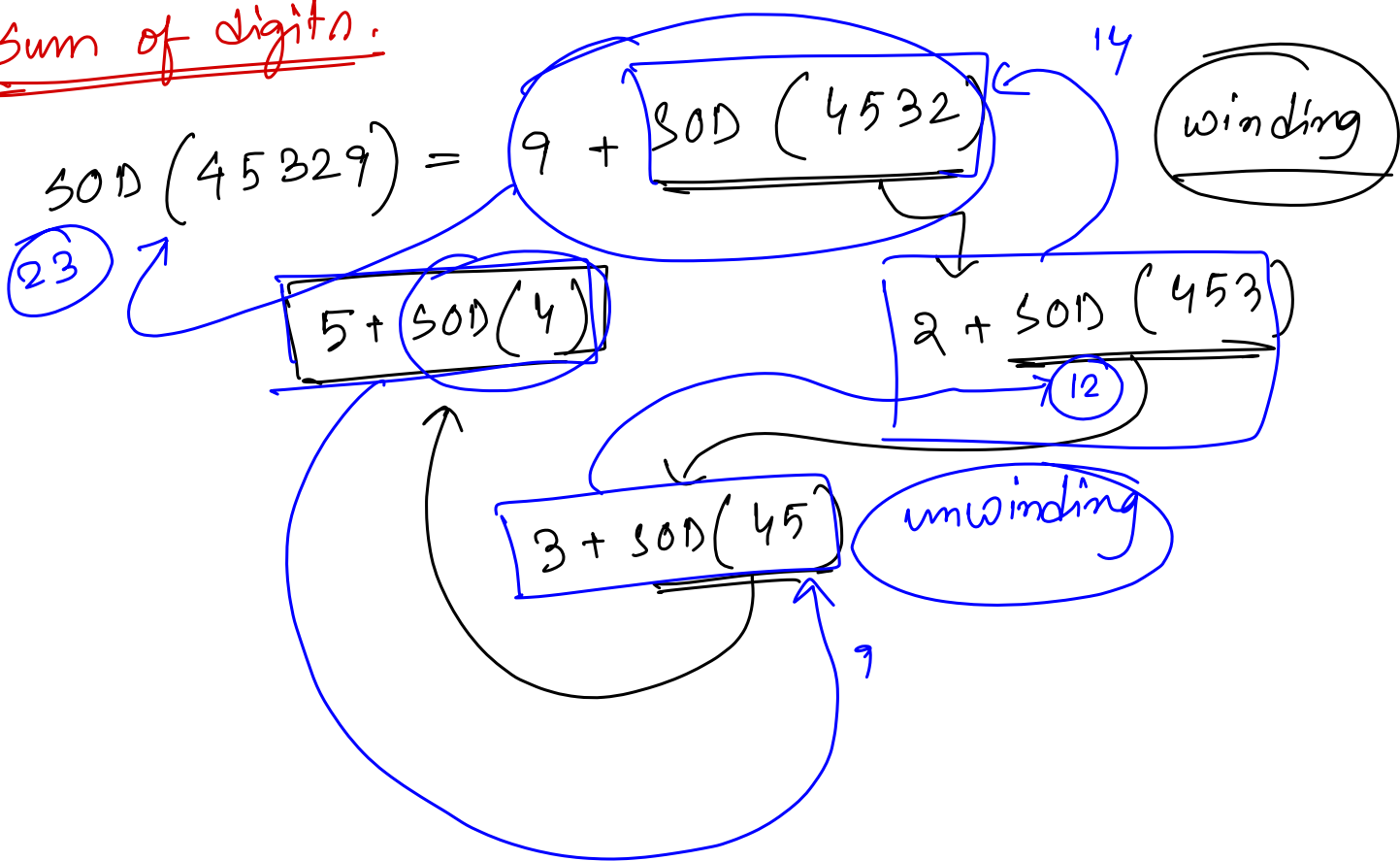
if (n == 5) return 120;

4 3 2 1

(n == 0)

Q1 WAP to input any number 'n' and find the sum of n natural numbers along with printing them like a series. eg:- n=5  
 $1+2+3+4+5 = 15$

Q2 Sum of digits.



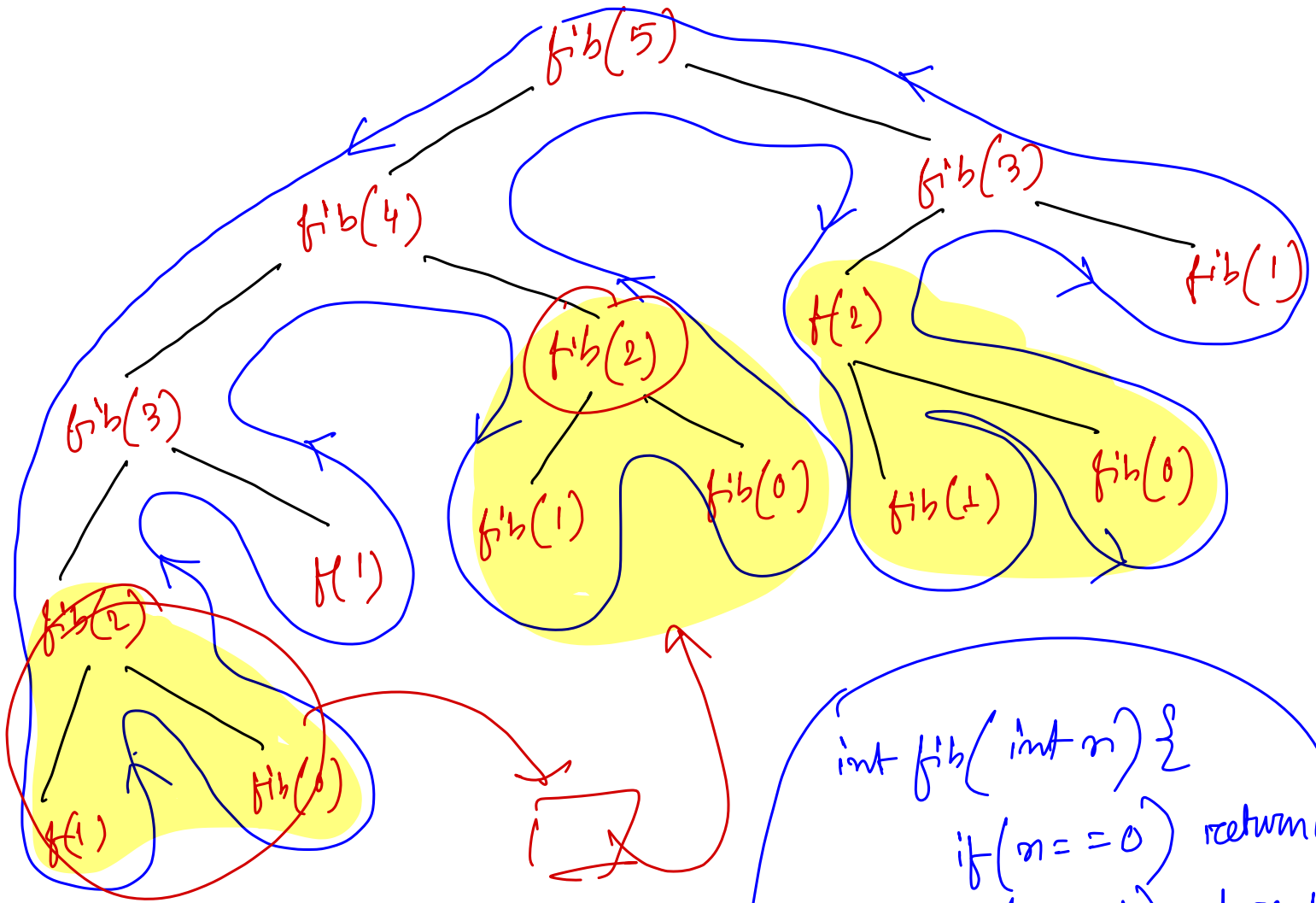
# Fibonacci Series

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...

0, 1, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, " " " "

0, 1, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, " " " "

$$fib(n) = \begin{cases} 0 & \longrightarrow n == 0 \\ 1 & \longrightarrow n == 1 \\ \underline{fib(n-1)} + \underline{fib(n-2)} & \longrightarrow n > 1 \end{cases}$$



```
int fib(int n) {
    if (n == 0) return 0;
    if (n == 1) return 1;
    return fib(n-1) + fib(n-2);
}
```

GCD

(Greatest Common Divisor)

10, 15

15, 10

10 ) 15 ( 1  
    10  
    ---  
     5

$\text{gcd}(a, b)$

~~$a \geq b$~~

$b \geq a$

a

b = 0

b,  $a \% b$

15, 10

10 ) 15

b,  $a \% b$   
15, 10

10 ) 5  
    10  
    ---  
     0

5

int gcd (int a, int b) {

if ( b == 0)

return a;

return gcd (b,  $a \% b$ );

}

Iterative

u/w

