Recursion Concepts & Qns

Video 3

"मैं, DSA की शपथ लेता हूँ कि मैं जो पढ़ाऊंगा बहोत अच्छे से पढ़ाऊंगा।"

Facebook
Instagram → codestorywithMIK

(Twitter) → CSwithMIK

codestorywithMIK →

Motivation

⊙ In the world of coding, persistence

(भाषण)

is the key to Success.

⊙ #codeHardDreamBig

- Recursion Tree.
- Its importance. (T.C, S.C)
- Recursion Call Stack.

Recursion Tree ...

"One of the most underrated tools"

Example - Factorial (n)

n = 5

F(5) 5*4*3*2*1 = 120

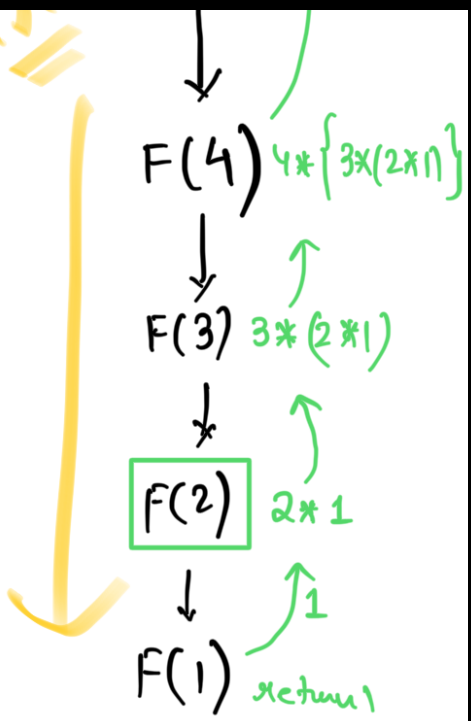
Tree

int Factorial (n) {

```
if(n<=1)
    return 1;
}

return n* Factorial(n-1);

}
```

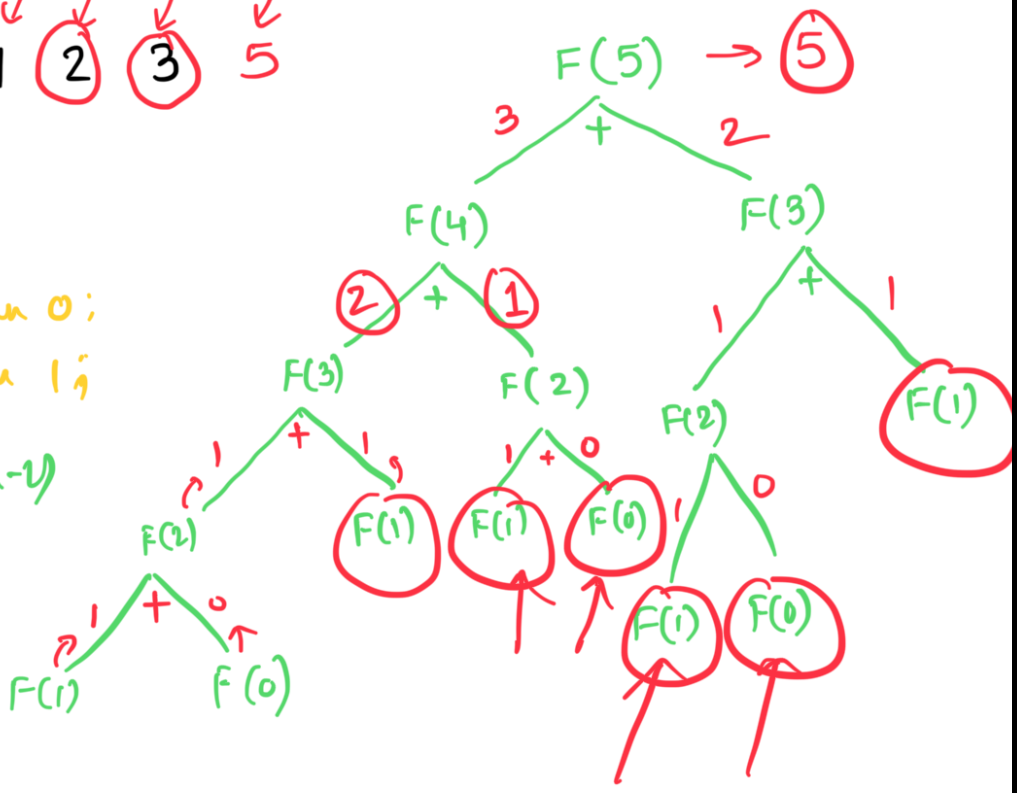


Example :- Fibonacci (n)

// Find n^{th} Fibonacci no.

0 1 1 2 3 5

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



T.C

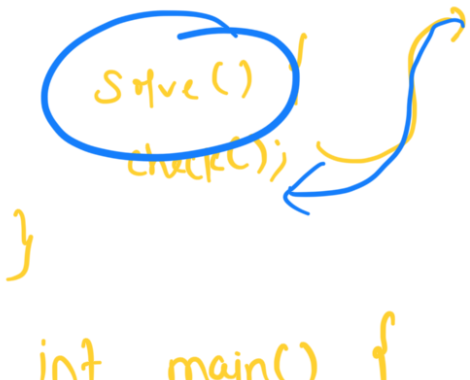
S.C

Recursion Call Stack :-

(•) Stores information about active function calls.

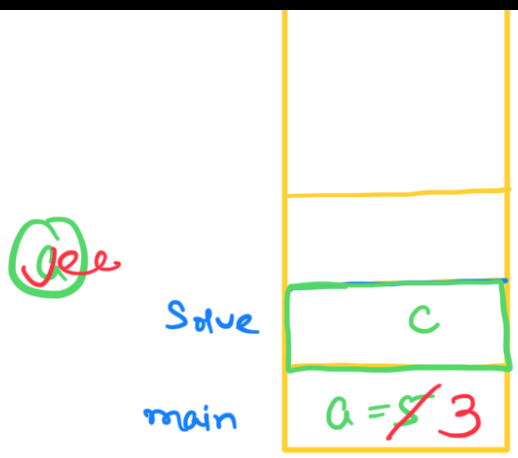
(•) Each function call adds a new frame to the call stack.

(•) Each frame has its own set of local variables



a = 5
Solve(a);

}



Solve (int &a) {

int c;

a = 3;

}

(·) Pass by value — copy

(·) Pass by refer — no copy

vector <int> vec;