FUNCTIONS

→ Readable

→ Reuse

i ~ a;

int b;

int c;

$a *nod_a^2 + b*nod_b + c\,nod_c^3$

functions

2 Types of Memories →

Stack

function frame

```
add ( int a, int b)
sum = 2+3 = 5
return 5

add (10, 15)
sum = 25
return sum

main() {
int sum = add(10, 15)    25
syso (sum);
sum = add (2,3)
syso( sum)
}
```

$\dfrac{25}{5}$

→ Poora code
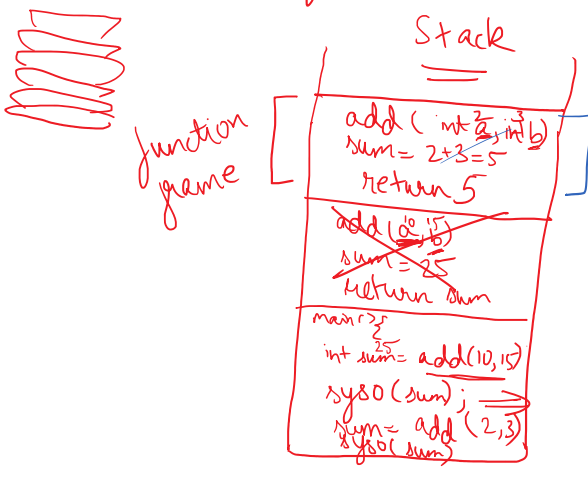
Acess? → Kisi bhi functn

Heap

→ Global variable   Heap memory

int a = 500; ✗ Nahi volta
  +10
510

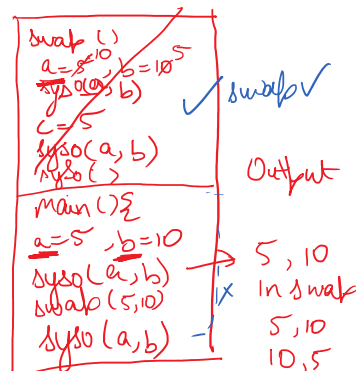a^5, $b^{10 \to 5}$

int c^5 = a; ✓

a = b; ✓

b = c; ✓

1) Function call creates→ Function frame

2) When "Kaam is complete → All local variables are destroyed

3) When Stack is empty → Code Khatam

Swap

```
swap ()
a=5→10, b=10→5
syso(a,b)
c=5
syso(a, b)
syso()

Main() {
a=5, b=10
syso(a,b)
swap (5,10)
syso (a,b)
}
```

✓ swap ✓

Output

5, 10
In swap
5,10
10,5

Heap

Global variable

int a=5 ?
b=10;

Poore code ka ek hi a ⇒ Global Variable
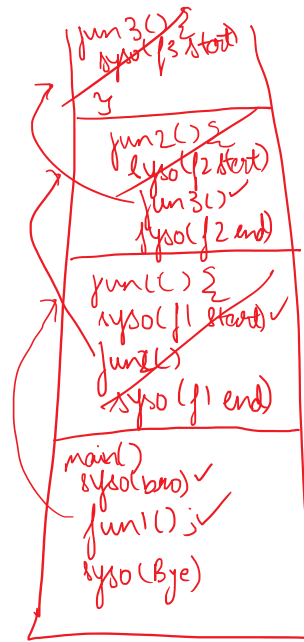
```java
public static void main(String[] args) {
    System.out.println("bro!");
    fun1();
    System.out.println("Bye!");
}

public static void fun1() {
    System.out.println("fun1 start");
    fun2();
    System.out.println("fun1 end");
}

public static void fun2() {
    System.out.println("fun2 start");
    fun3();
    System.out.println("fun2 end");
}

public static void fun3() {
    System.out.println("fun3 start");
    System.out.println("fun3 end");
}
```

Output:
bro!
fun1 start
fun2 start
fun3 start
fun3 end
fun2 end
fun1 end
Bye!

Point All Armstrong Numbers from (1-1000)?

$$\sum \text{digit}^{\text{nod}} = \text{num}$$

$1 \rightarrow 1^1 = 1 \checkmark$ $11 \rightarrow 1^2 + 1^2 = 2$

$2 \rightarrow 2^1 = 2 \checkmark$ $\times$

$3 \rightarrow 3^1 = \underline{3}$

$$\begin{array}{r} 6 \\ 4\,9 \\ \times\ 7 \\ \hline 3\,4\,3 \end{array}$$

$$\begin{array}{r} 1 \\ 2\,8 \\ +\ 6 \\ \hline 3\,4 \end{array}$$

$370 \rightarrow 3^3 + 7^3 + 0^3 = 27 + 343$

$= 370$

$$\begin{array}{r} 1 \\ 3\,4\,3 \\ 2\,7 \\ \hline 3\,7\,0 \end{array}$$

$371 \rightarrow 3^3 + 7^3 + 1^3 = 27 + 343 + 1$

$\qquad = 370 + 1 = 371$

$\overline{153} = 1^3 + 5^3 + 3^3 = 1 + 125 + 27$

(2) $= 1 + 152 = 153$

1st $\rightarrow$ Exams   21 Nov
     $\hookrightarrow$ Weekday $\times$ 28 Nov
     $\hookrightarrow$ 1-class   December

                                    Nov
2nd $\rightarrow$ Doubt Class $\underline{1}$
          $\hookrightarrow$ Weekday