LIVE

Online Class

printf (“Hello World”) ;

Kowshique Roy

Studying MSc in Computer Science (PMSCS) at

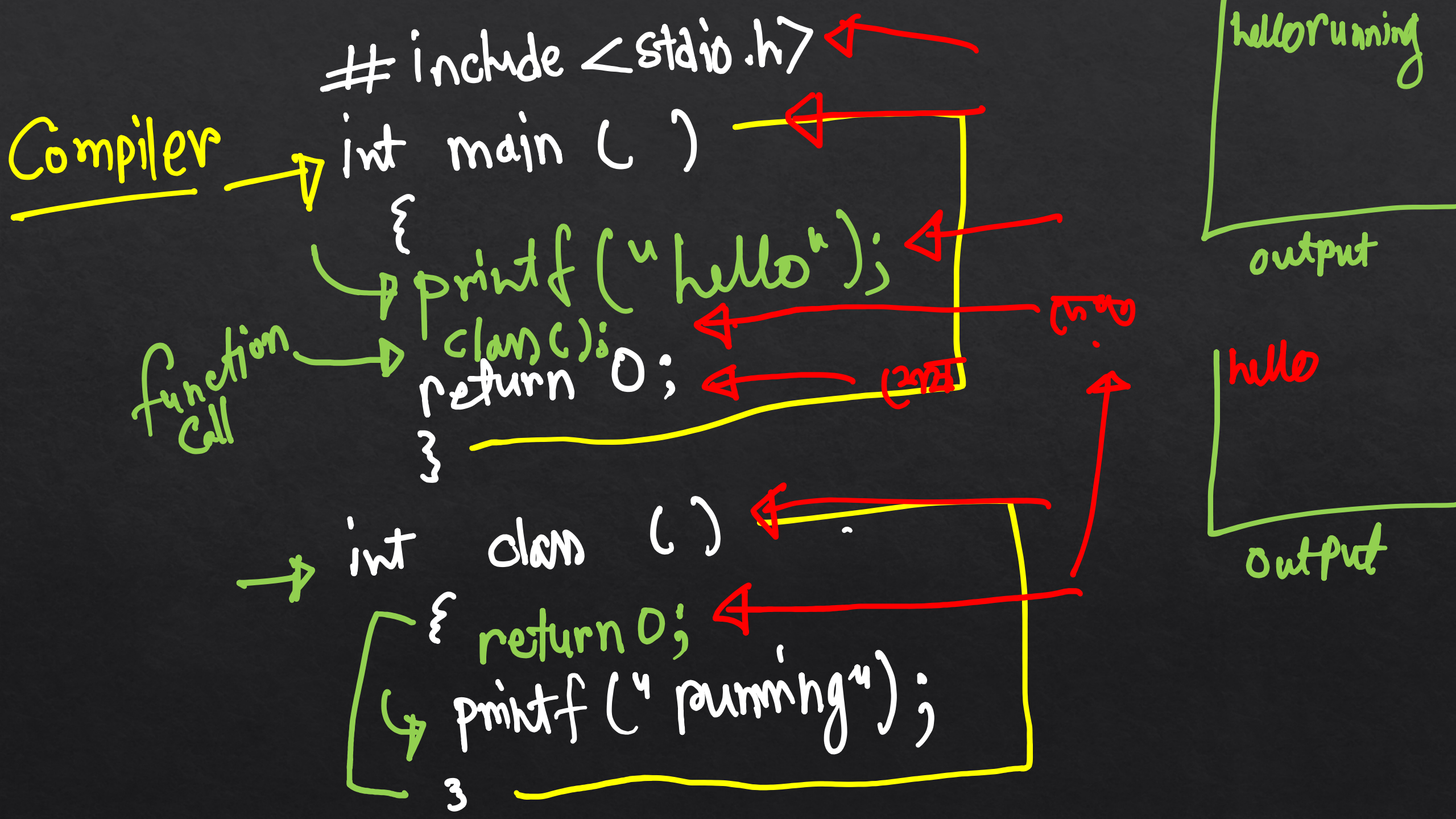
Jahangirnagar University

Whatsapp: 01765236683 Mail: kowshiqueroy@gmail.com Youtube: Dadar Class দাদার ক্লাস

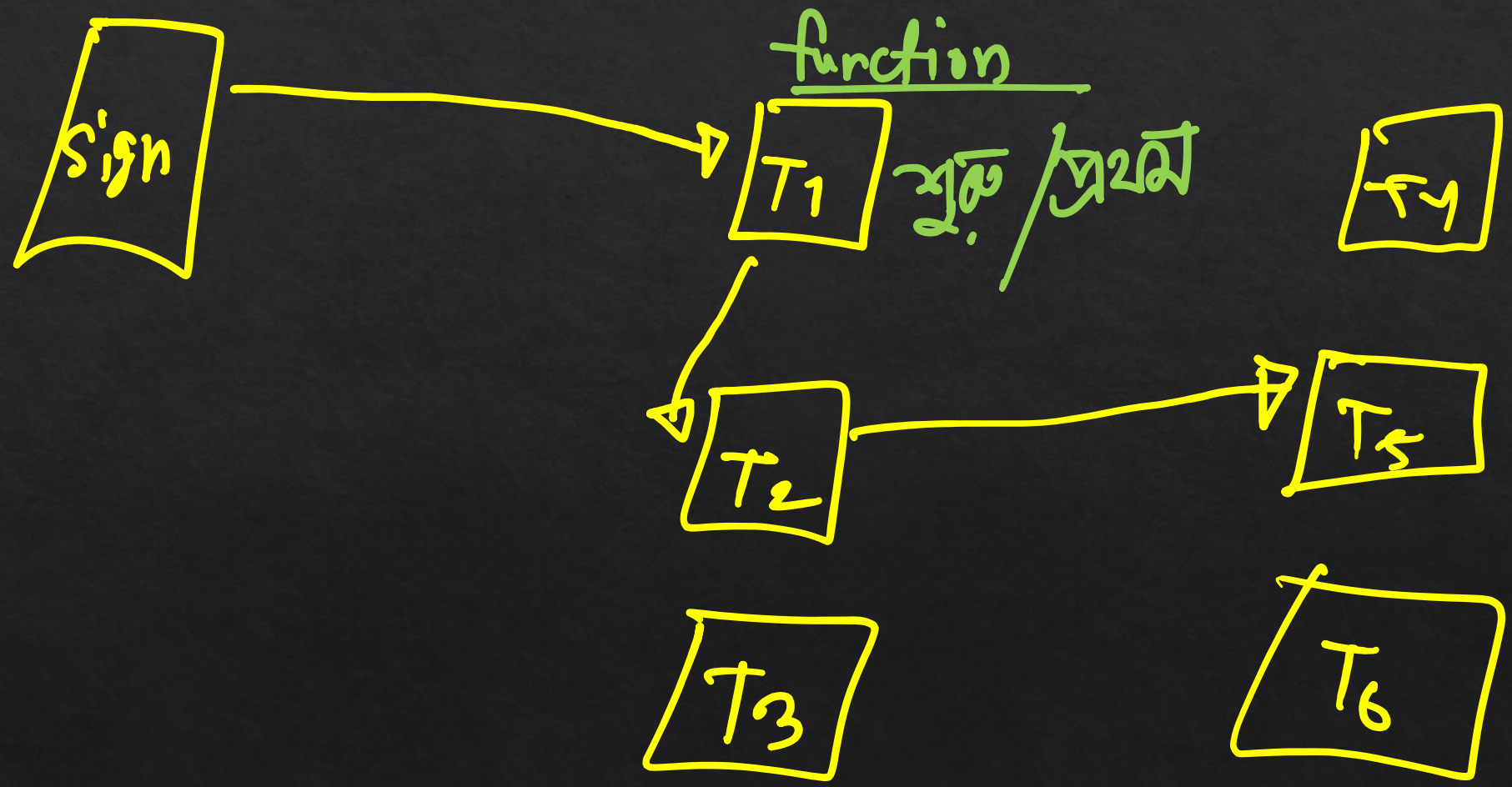
- Function Call
- Recursion

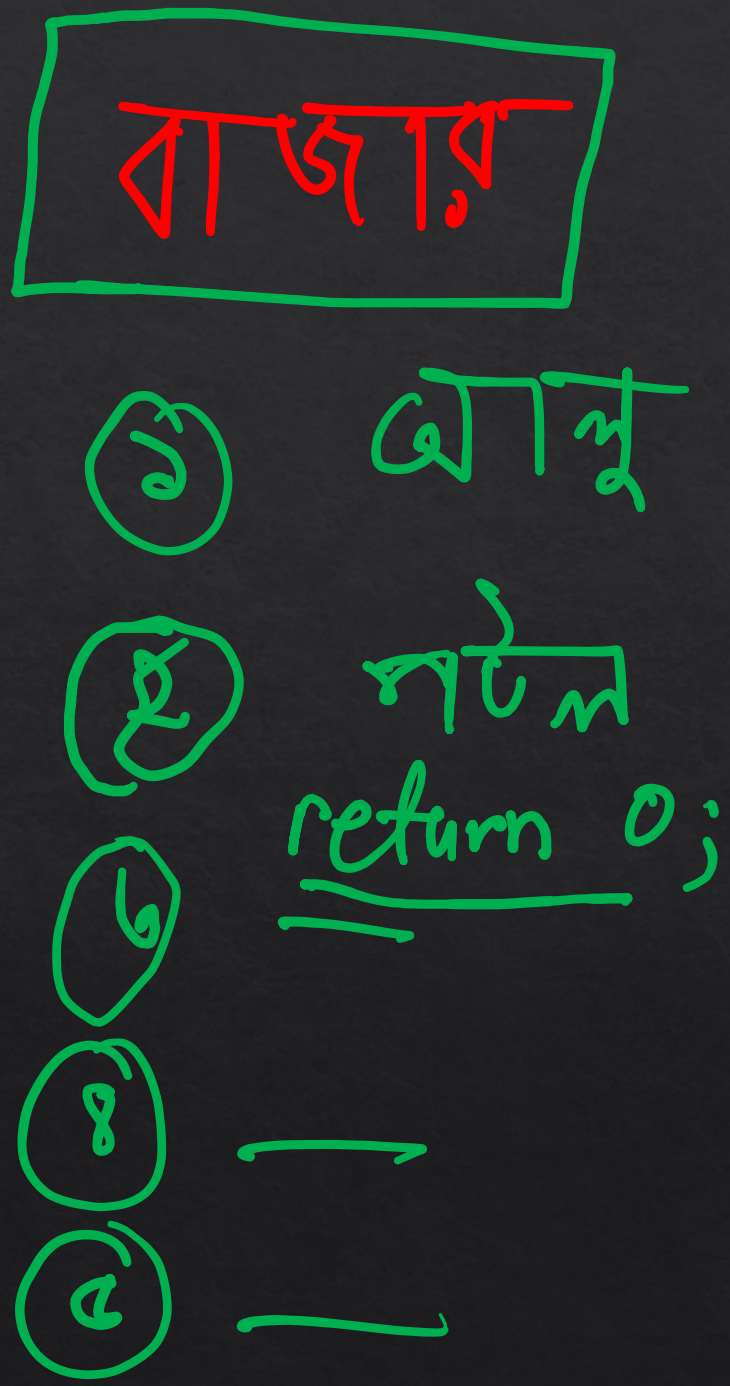
কীভাবে একটা ফাংশনকে ডেকে কাজ করানো যায়

লুপ (ফাংশনের লুপ)


#include <stdio.h>
int main ( )
{
printf ("hello");
clan c();
return 0;
}
Compiler
function Call
int clan ( )
{
return 0;
printf ("running");
}
hello running
output
hello
output

সরকারি অনাদিম



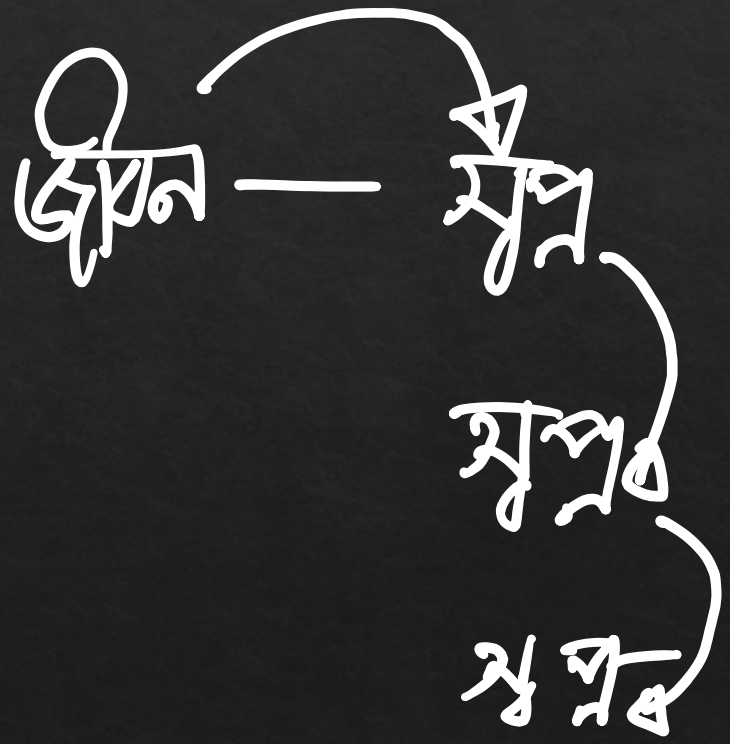


function call

movie

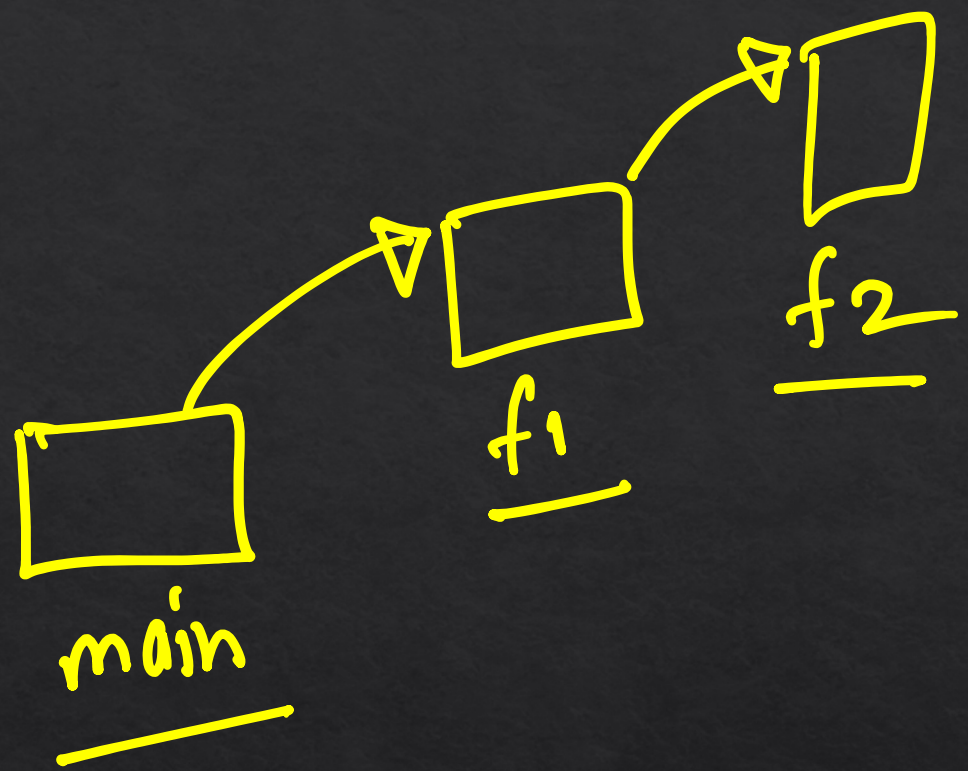
inception

function call



```
#include<stdio.h>
void main()
  {
  printf("Hello");
  f1();
  }

void f1()
  {
  p(hi); f2();
  }
void f2()
  {
  p(hey);
  }
```



N

Factorial

$5! = 5 \times 4 \times 3 \times 2 \times 1$

$4! = 4 \times 3 \times 2 \times 1$

square

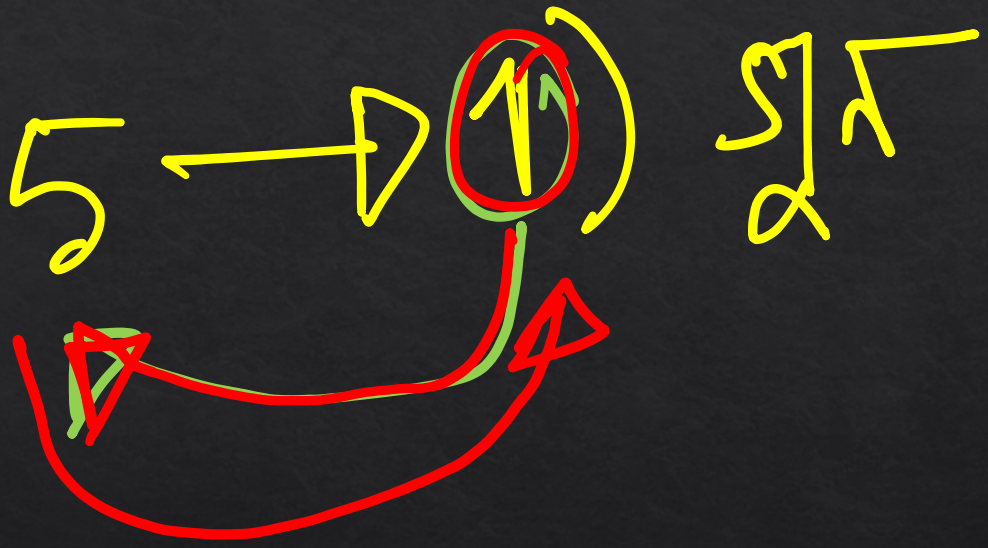
$5^2 = 5 \times 5$

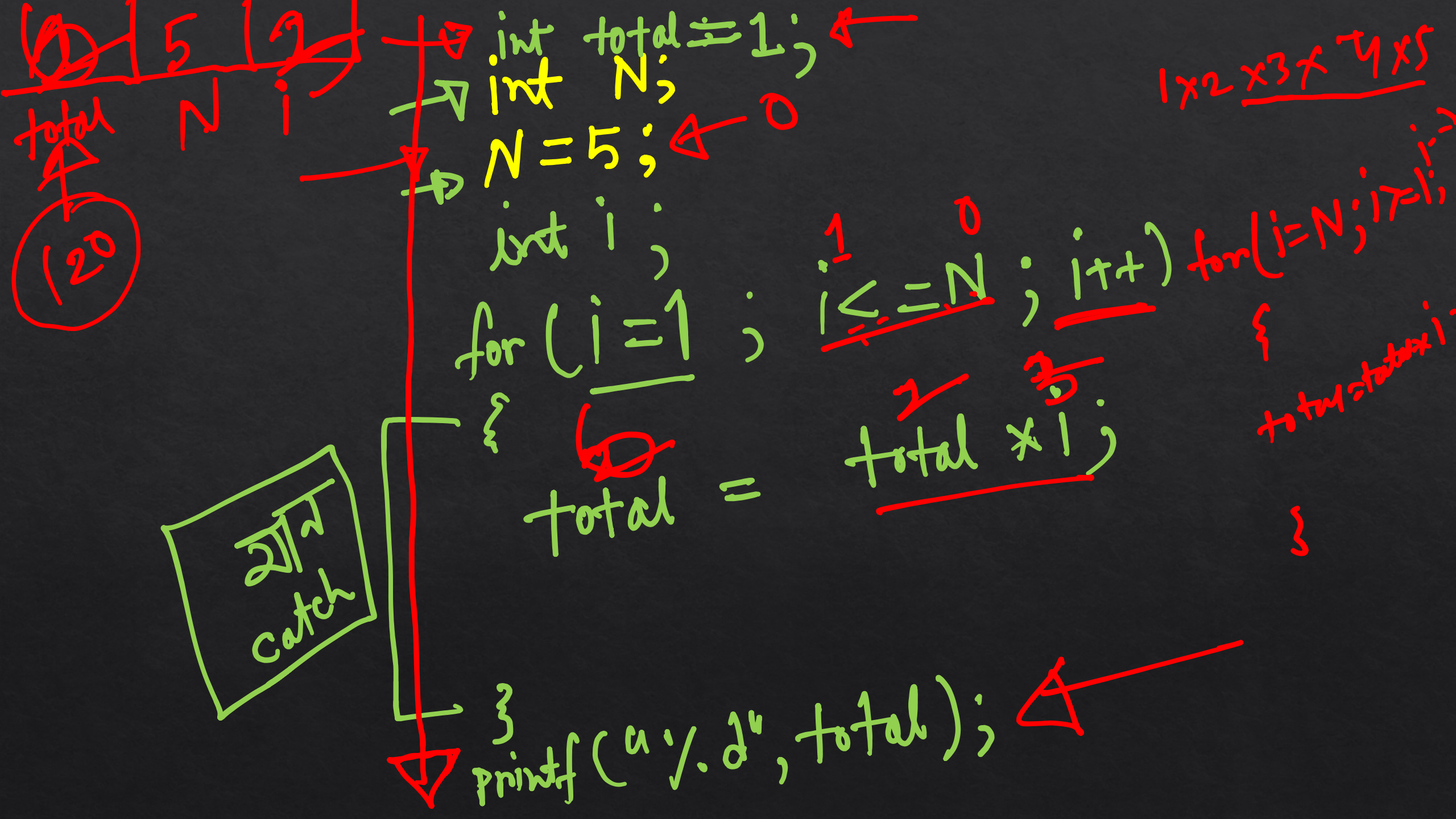
$6^2 = 6 \times 6$

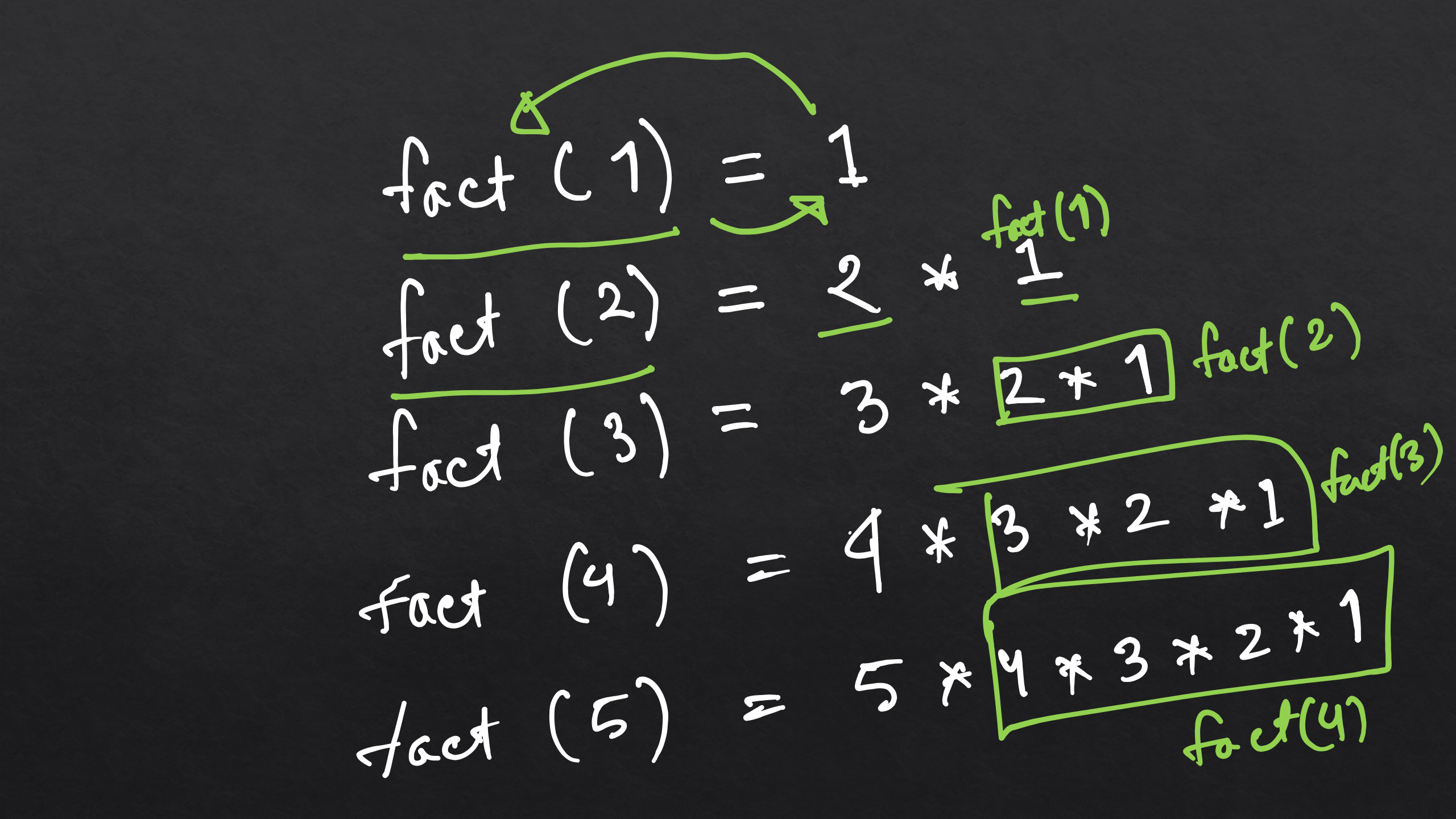
$6^3 = 6 \times 6 \times 6$

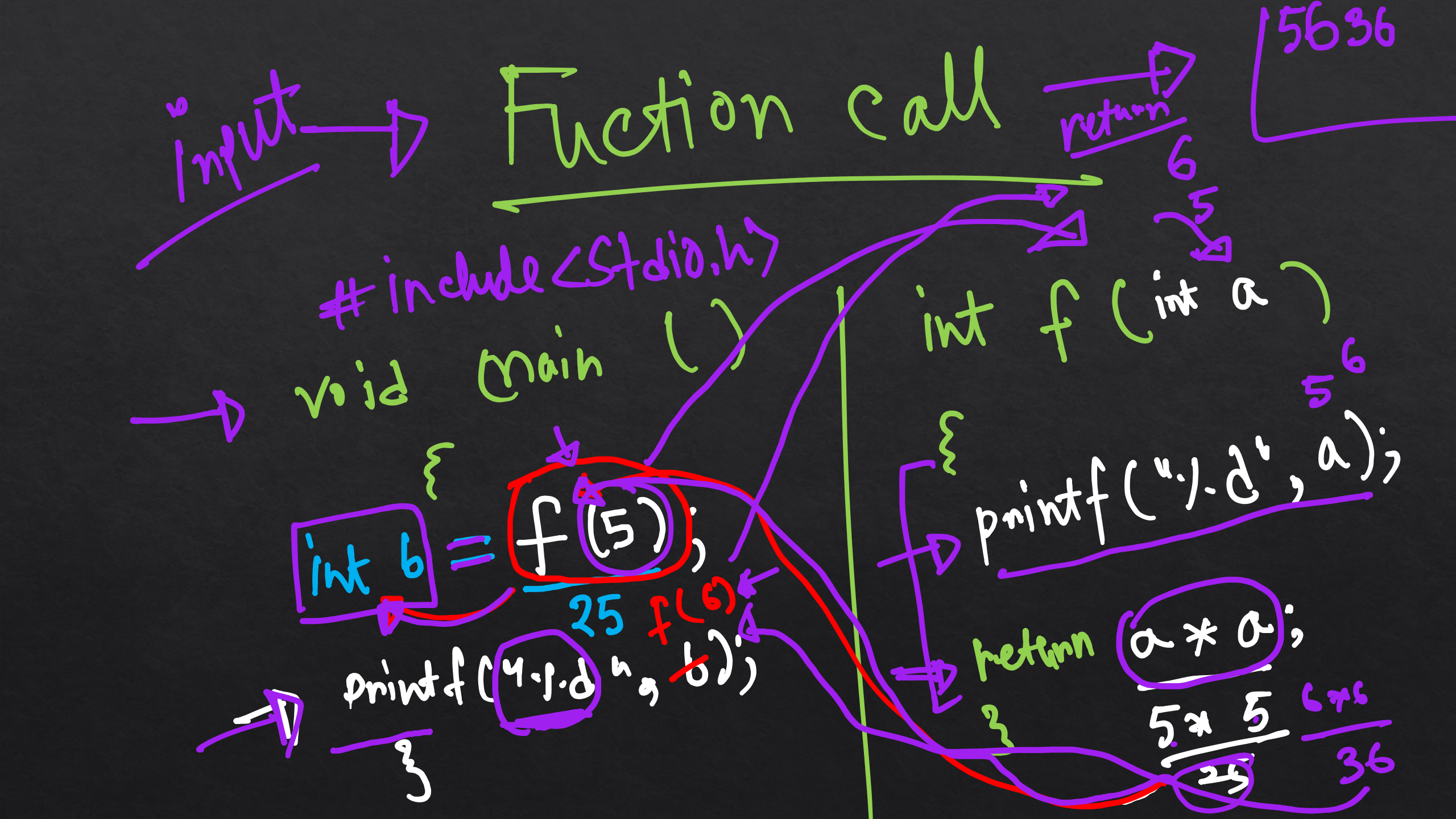
$N! = (N \to 1)$ গুন

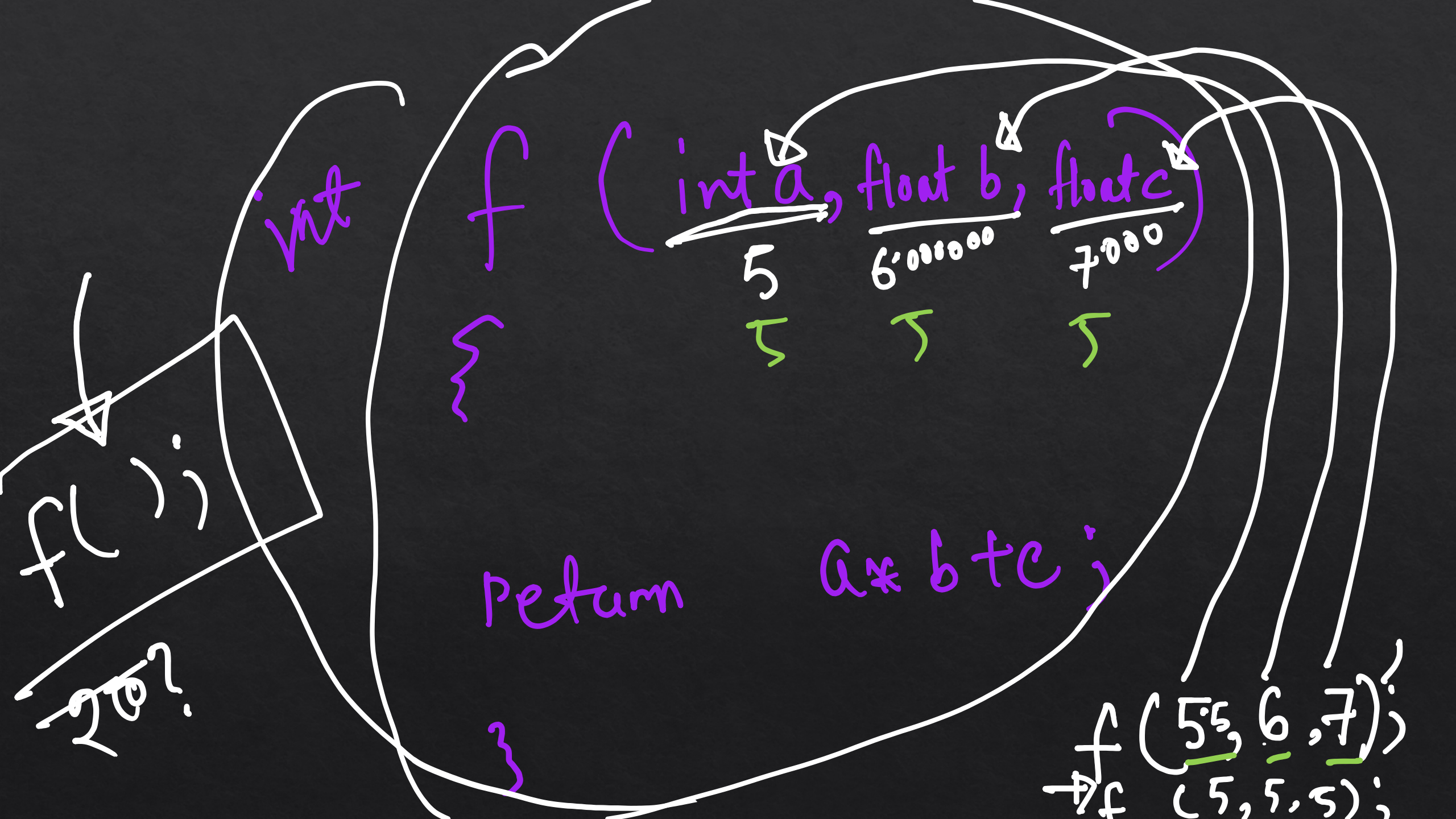
$5! = (5 \to 1)$ গুন

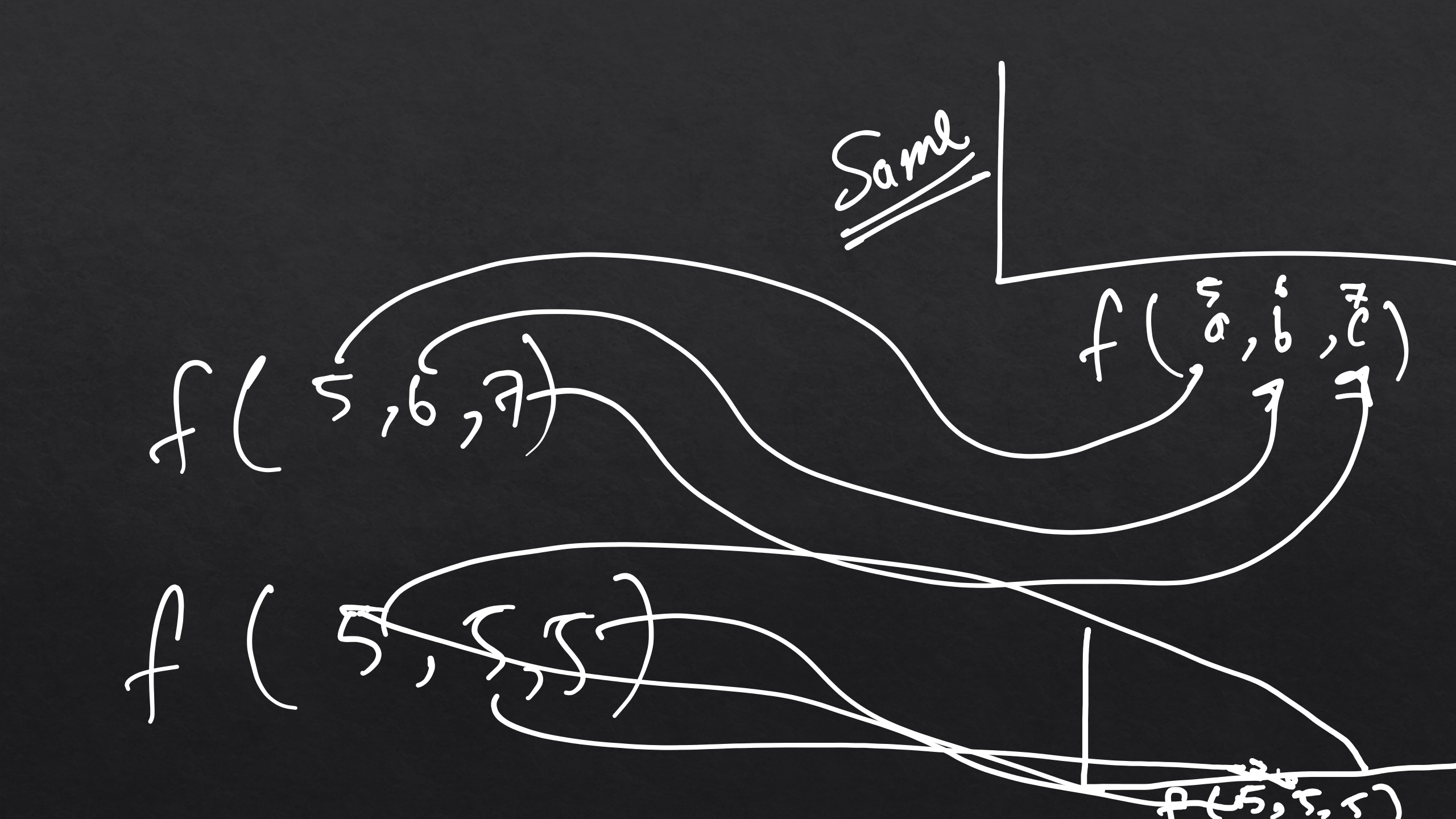


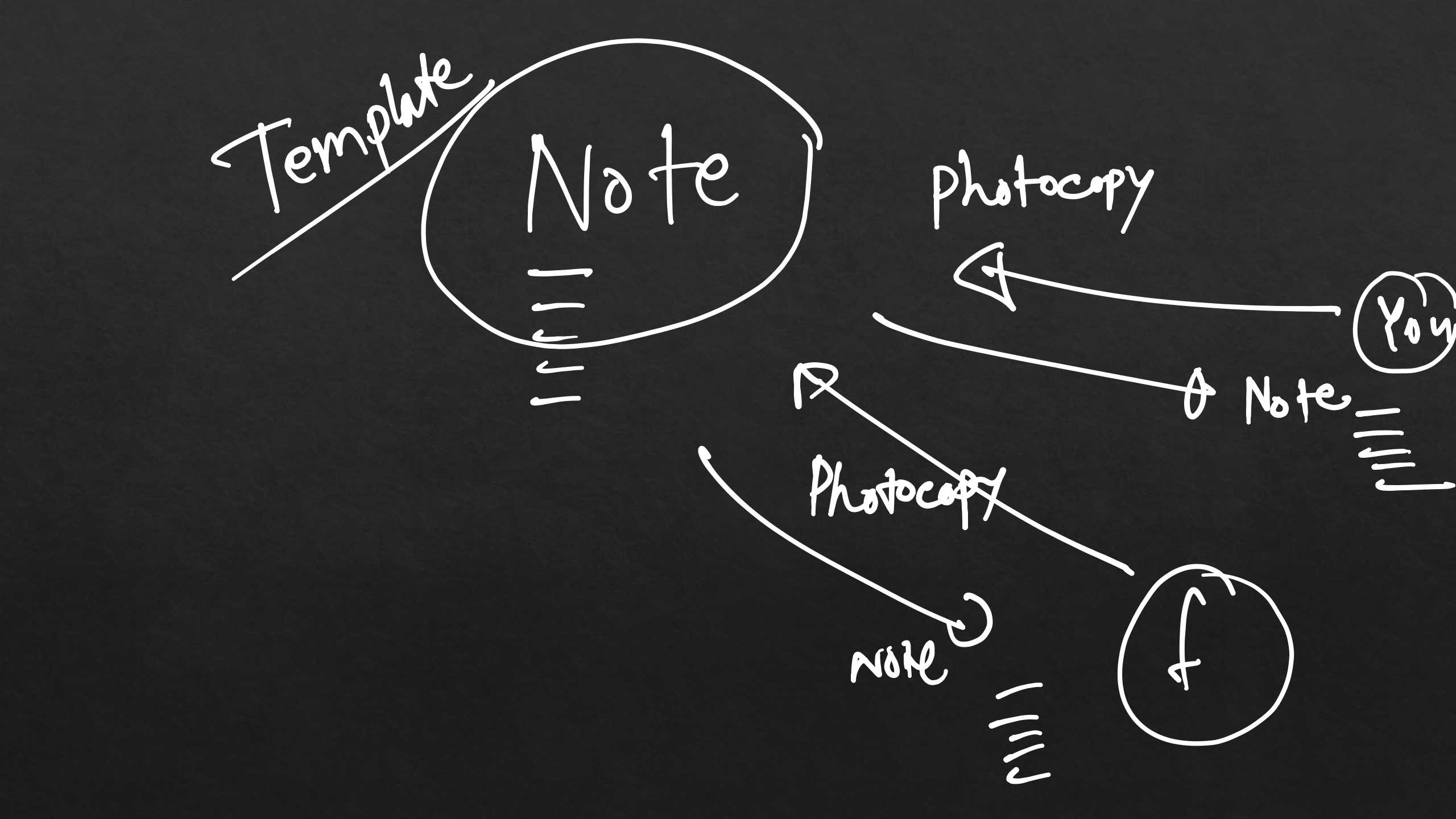

total N i
120
int total = 1;
int N;
N = 5;
int i;
for (i=1 ; i<=N ; i++)
{
total = total * i;
}
printf("%d", total);
1x2x3x4x5
for(i=N; i>=1; i--)
{
total=total*i;
}
আন
catch

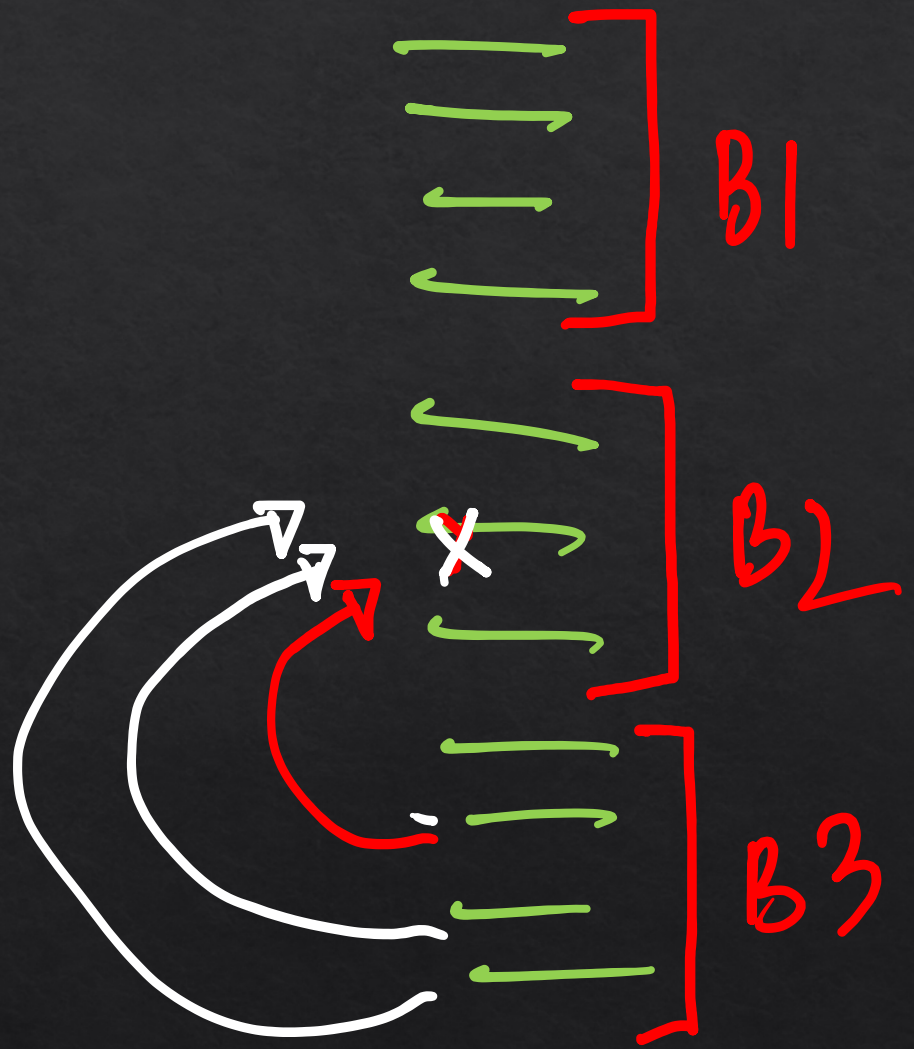

fact (1) = 1
fact (2) = 2 * 1
fact(1)
fact (3) = 3 * 2 * 1
fact(2)
fact (4) = 4 * 3 * 2 * 1
fact(3)
fact (5) = 5 * 4 * 3 * 2 * 1
fact(4)

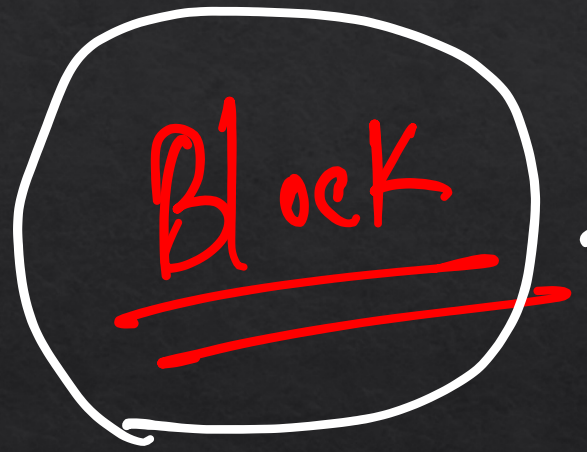

input
Fuction call
return
5636
#include<stdio.h>
void main()
{
int b = f(5);
printf("%d", b);
}
int f(int a)
{
printf("%d", a);
return a*a;
}
5
6
5
6
25
f(6)
5*5
6*6
36

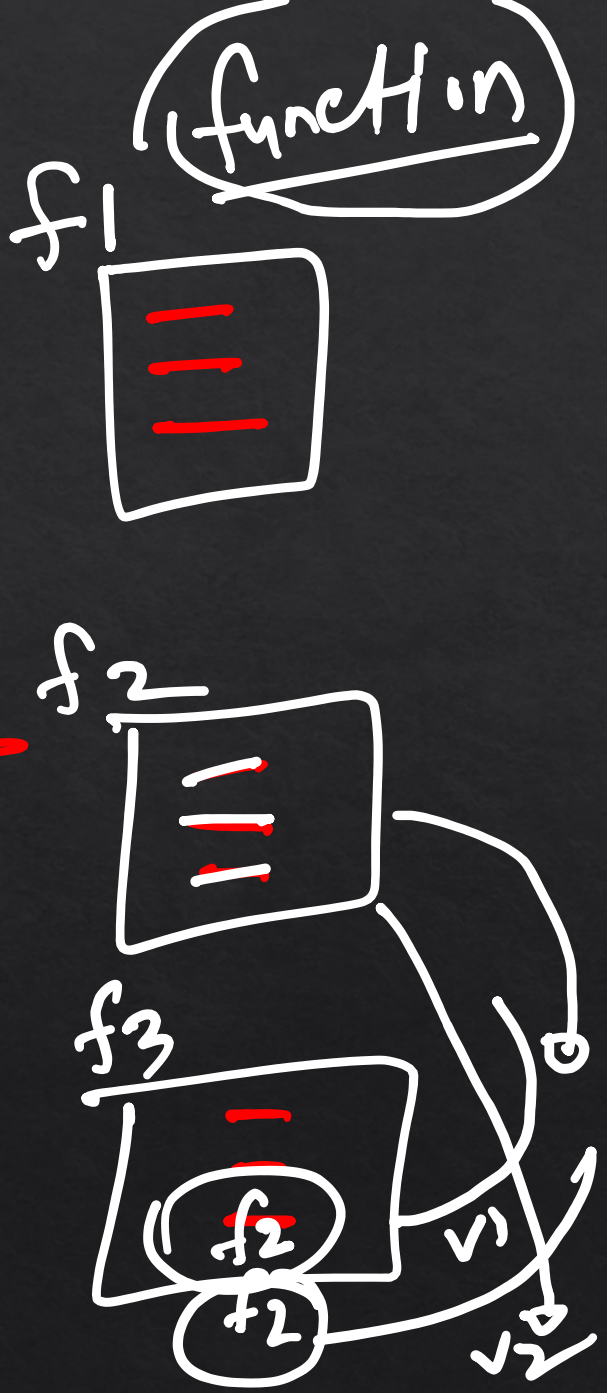

int f (int a, float b, float c)
{
return a*b+c;
}
f( );
f(5,6,7);
f(5,5,5);


Same
f(5,6,7)
f(a,b,c)
f(5,5,5)


Template
Note
Photocopy
You
Note
Photocopy
note
f


B1
B2
B3
x


Block


function
f1
f2
f3
f2
f2
v1
v2

fact(1) = 1 — Base

fact(2) = 2 * 1 — fact(1)

fact(3) = 3 * 2 * 1 — fact(2)

fact(4) = 4 * 3 * 2 * 1 — fact(3)

fact(4) = 4 * fact(3)

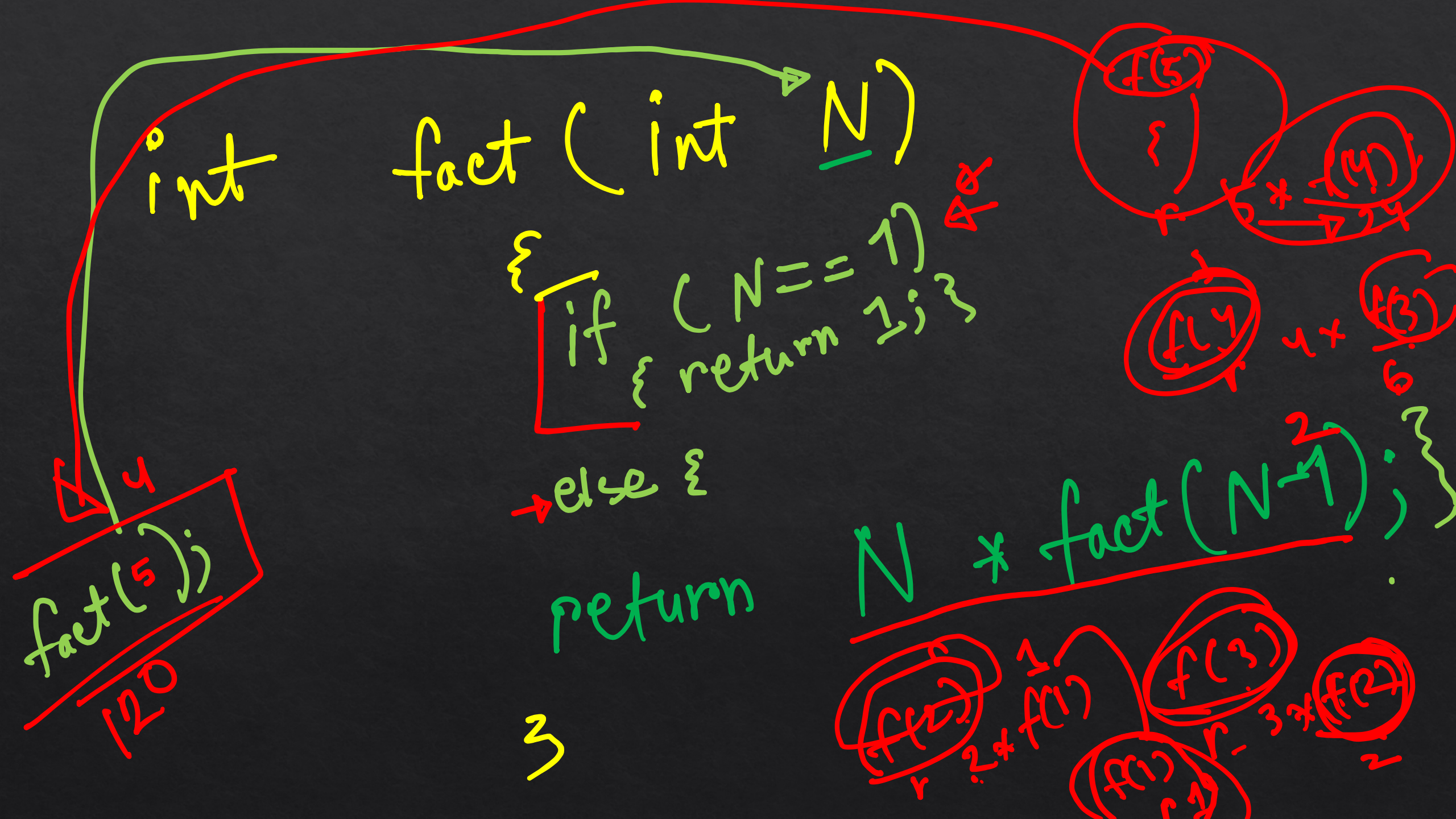
fact(4) = 4 x fact(3)

fact(4) = 4 x fact(4-1)

fact(N) = N * fact(N-1)

5 * fact(4);

fact(5);


int fact (int N)
{
if (N==1)
{ return 1;}
else {
return N * fact(N-1);}
fact(5);
120
3

f (2)

{

return 2 * fact(2-1)
N N-1

2

}

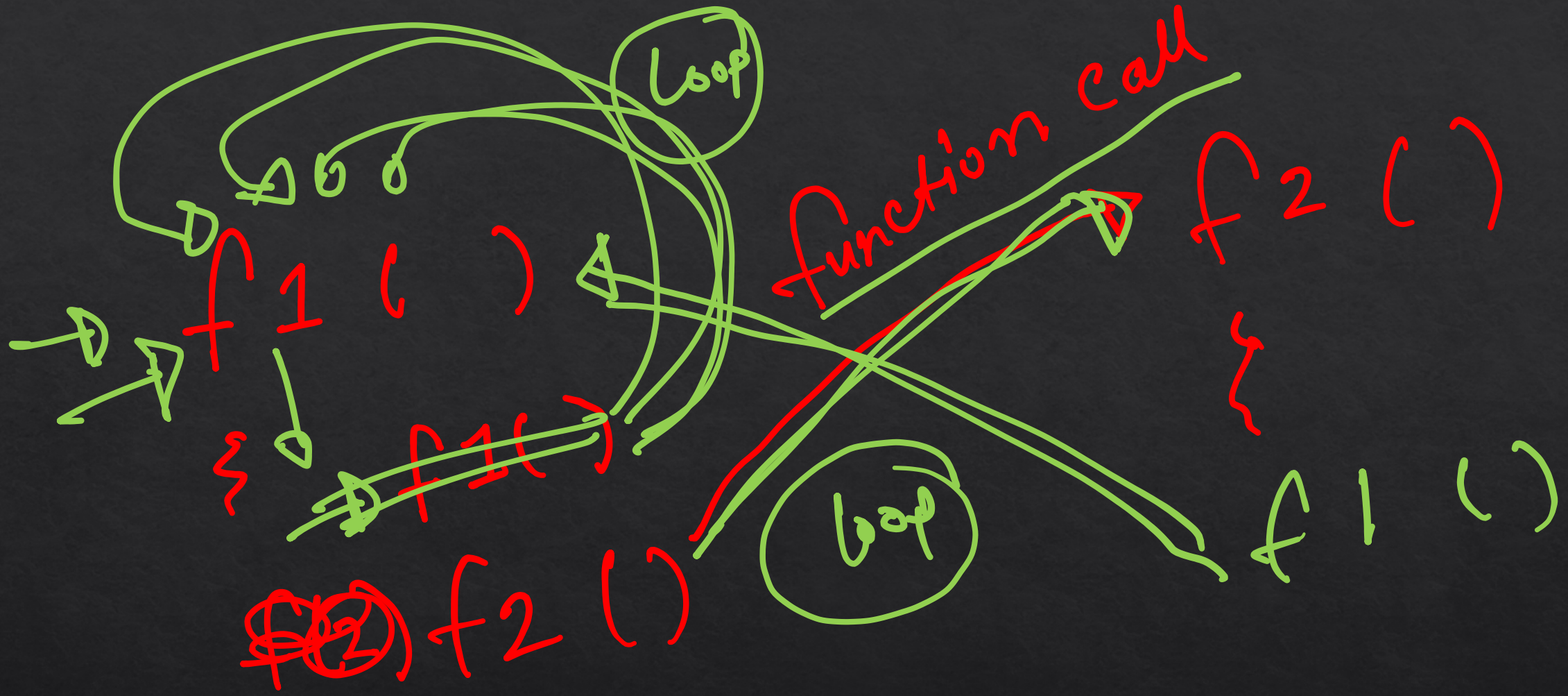
f(1)

{

return 1 ;

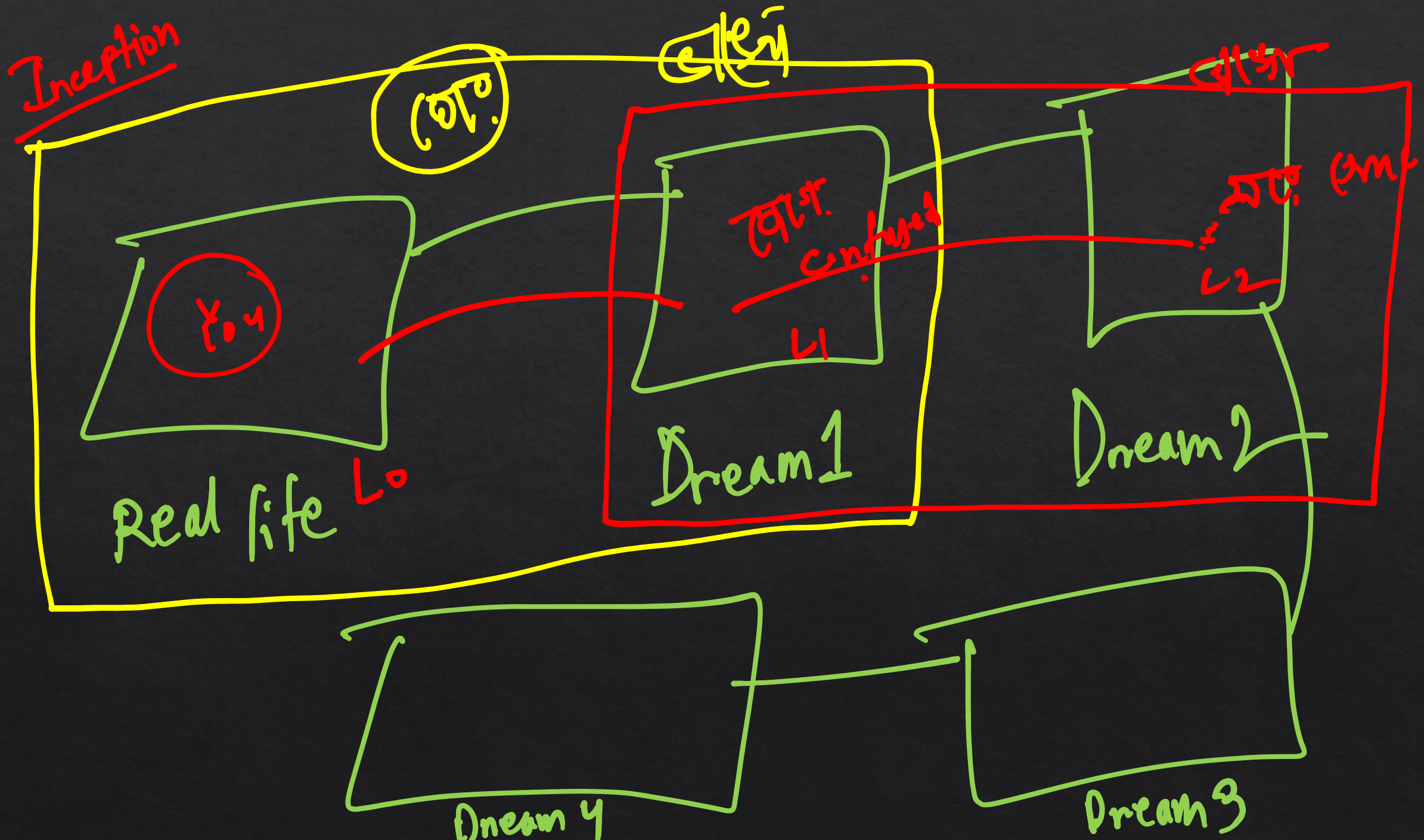
}

Base


loop
function call
f1 ( )
{
f1( )
f2 ( )
loop
f2 ( )
{
f1 ( )
3
3

Recursion

Recursive function


Inception
Real life
L0
Dream1
L1
Dream2
L2
Dream 4
Dream 3

Recursion

```
int f ( N )
{ if (  )
  {
  }
  ;
  else {
  }
}
```

Base Action

Recursive Action

Var 1

Loop

1-5

```
loop(i)
{
  1*2*3 ... *5
}
```

Recursion

memory

```
rec ( N )
{ if (N==1)
    return N * N-1 ;
}
```

5 - 1

f3
f4
f5

क्रमशः

f(5)
N*f(N-1)

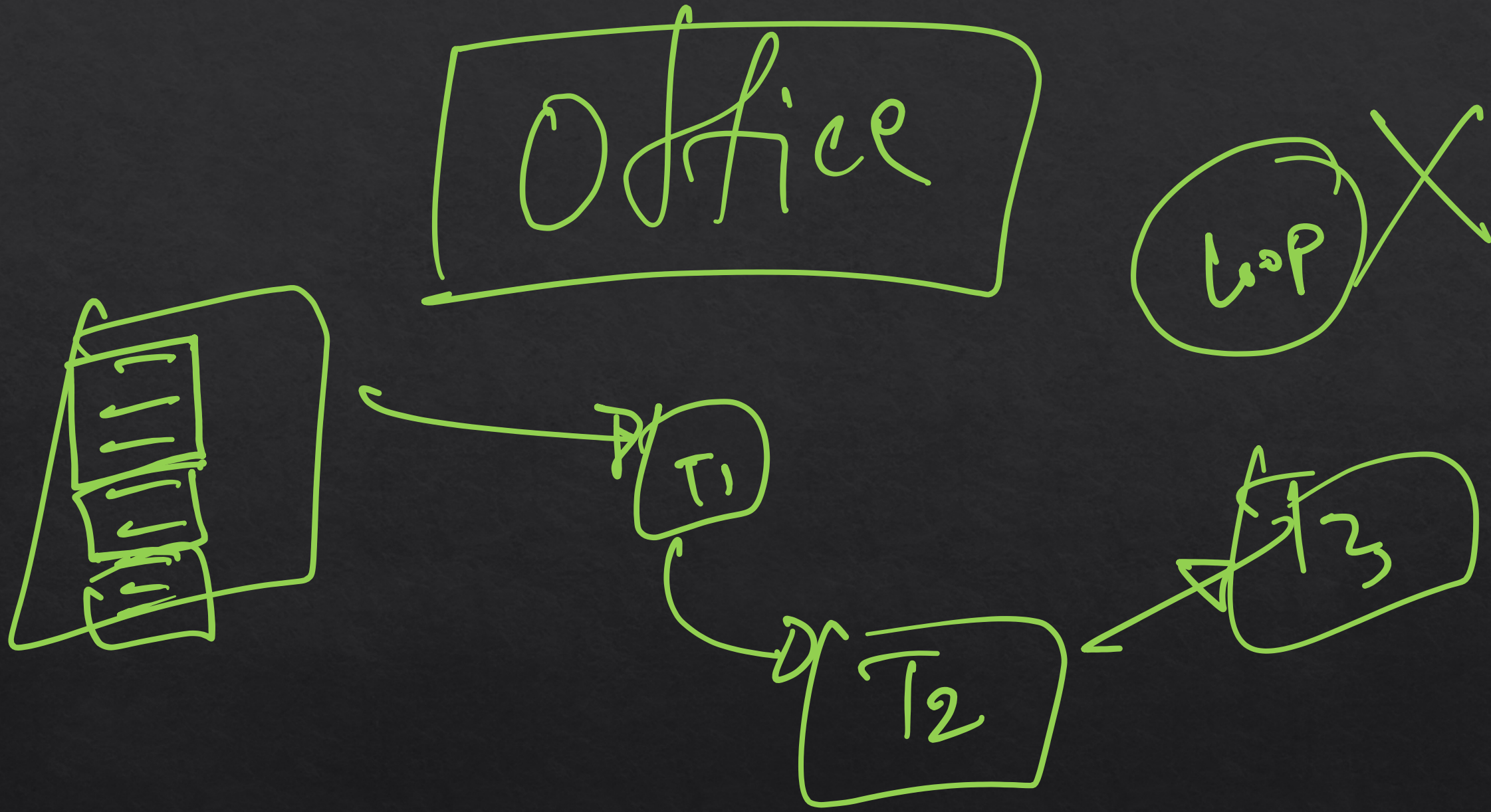
f(4)

f(3)

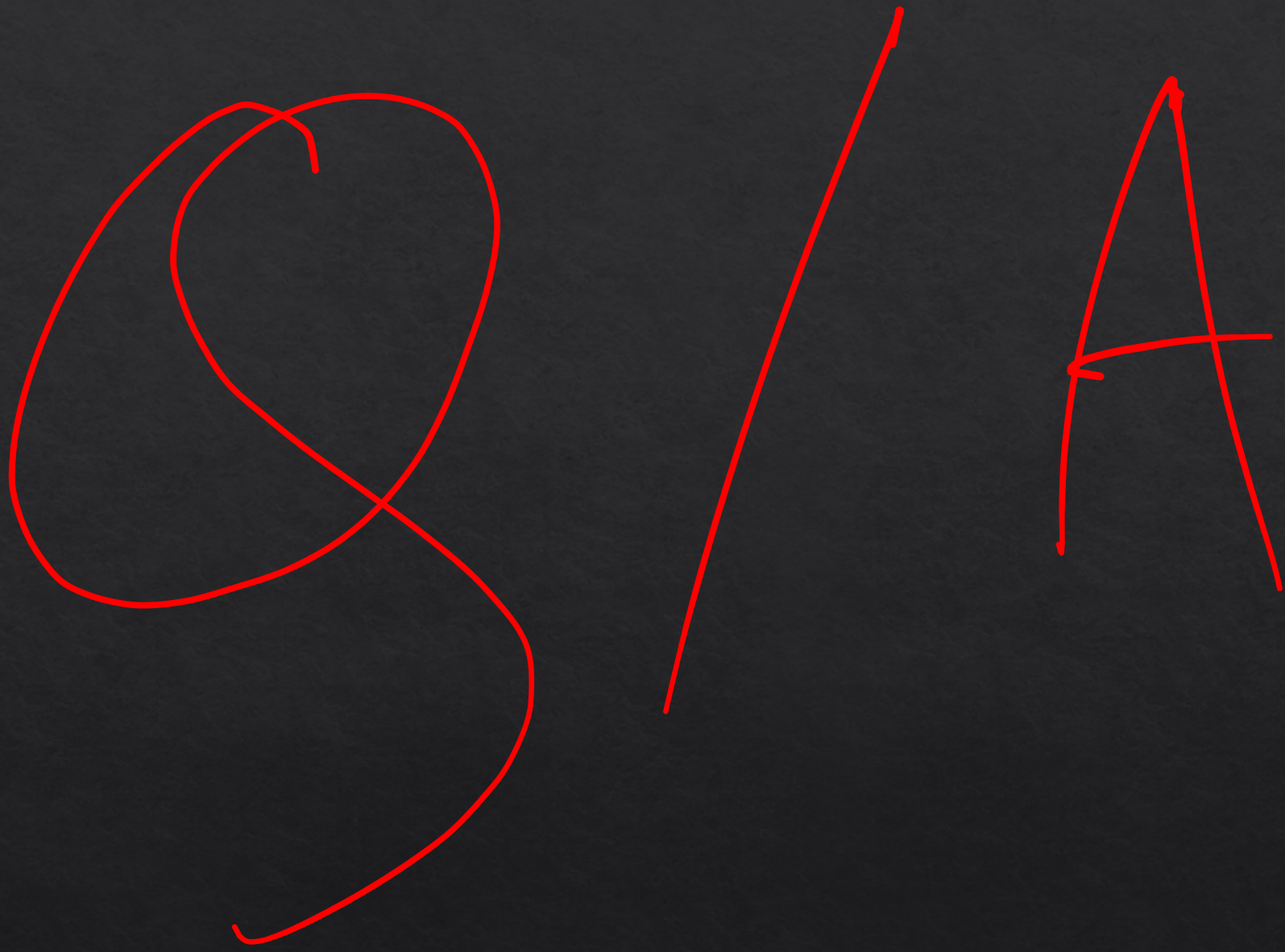
3*2

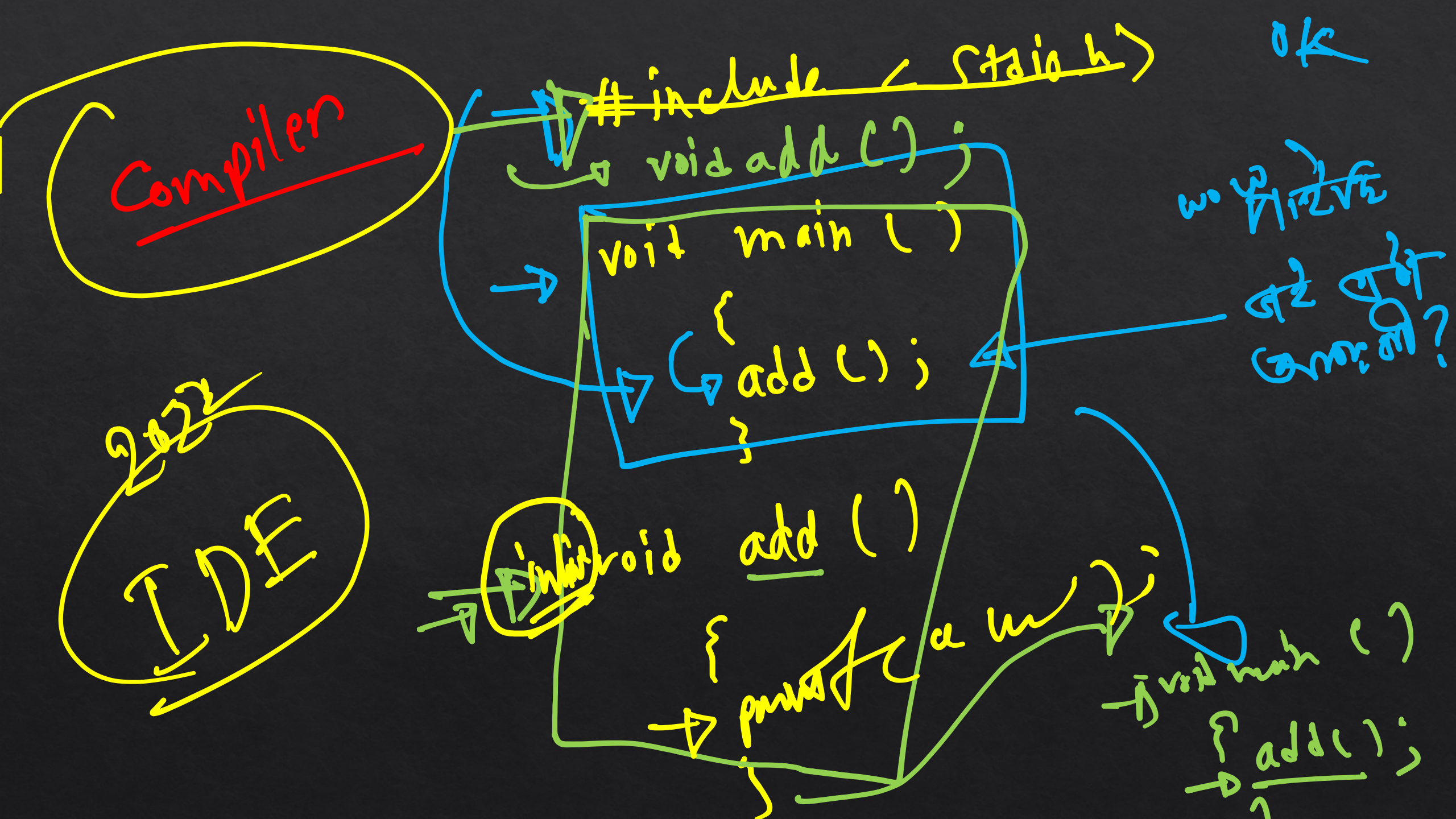
f(2)
2*1

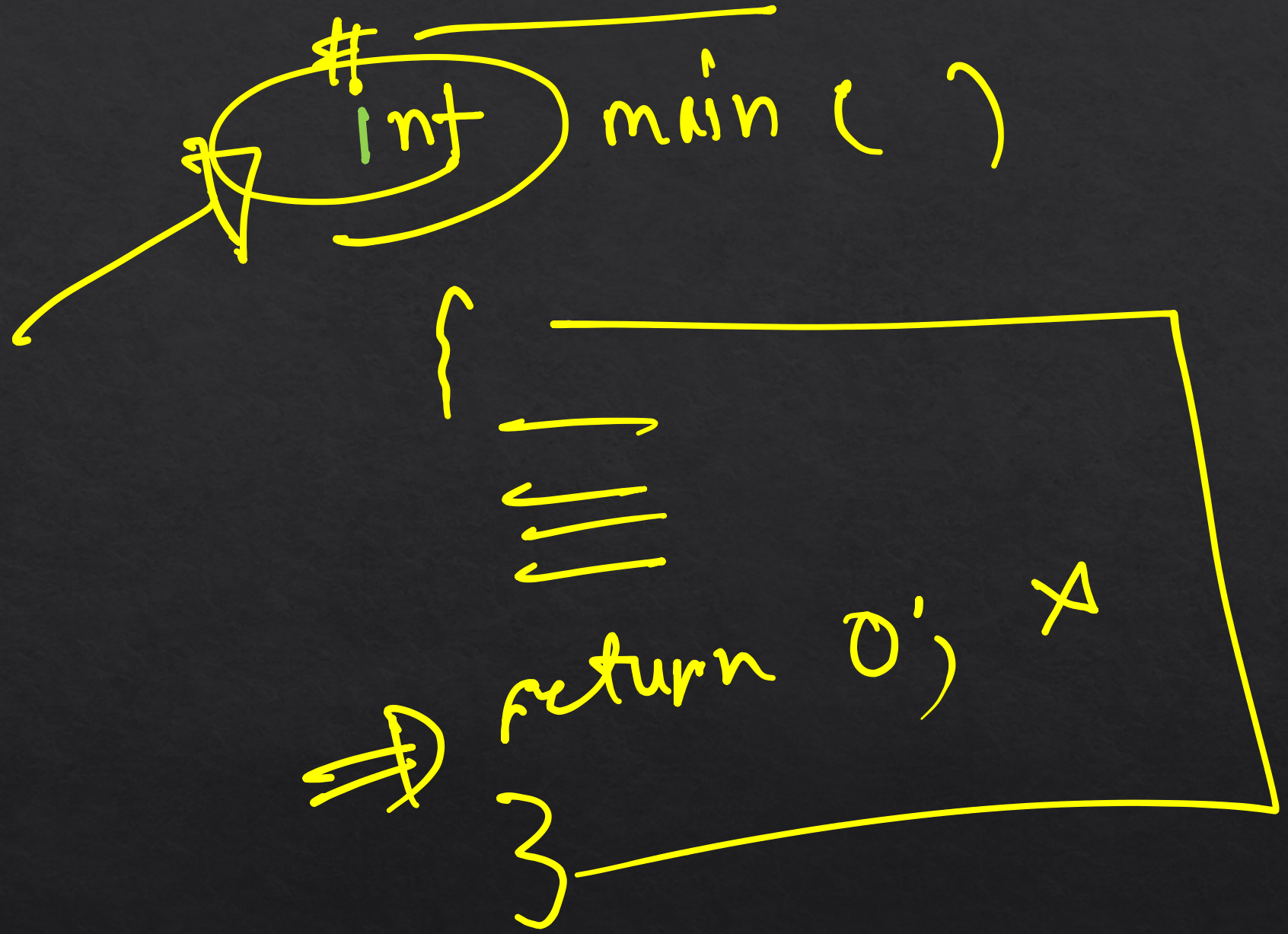
f(1)
1

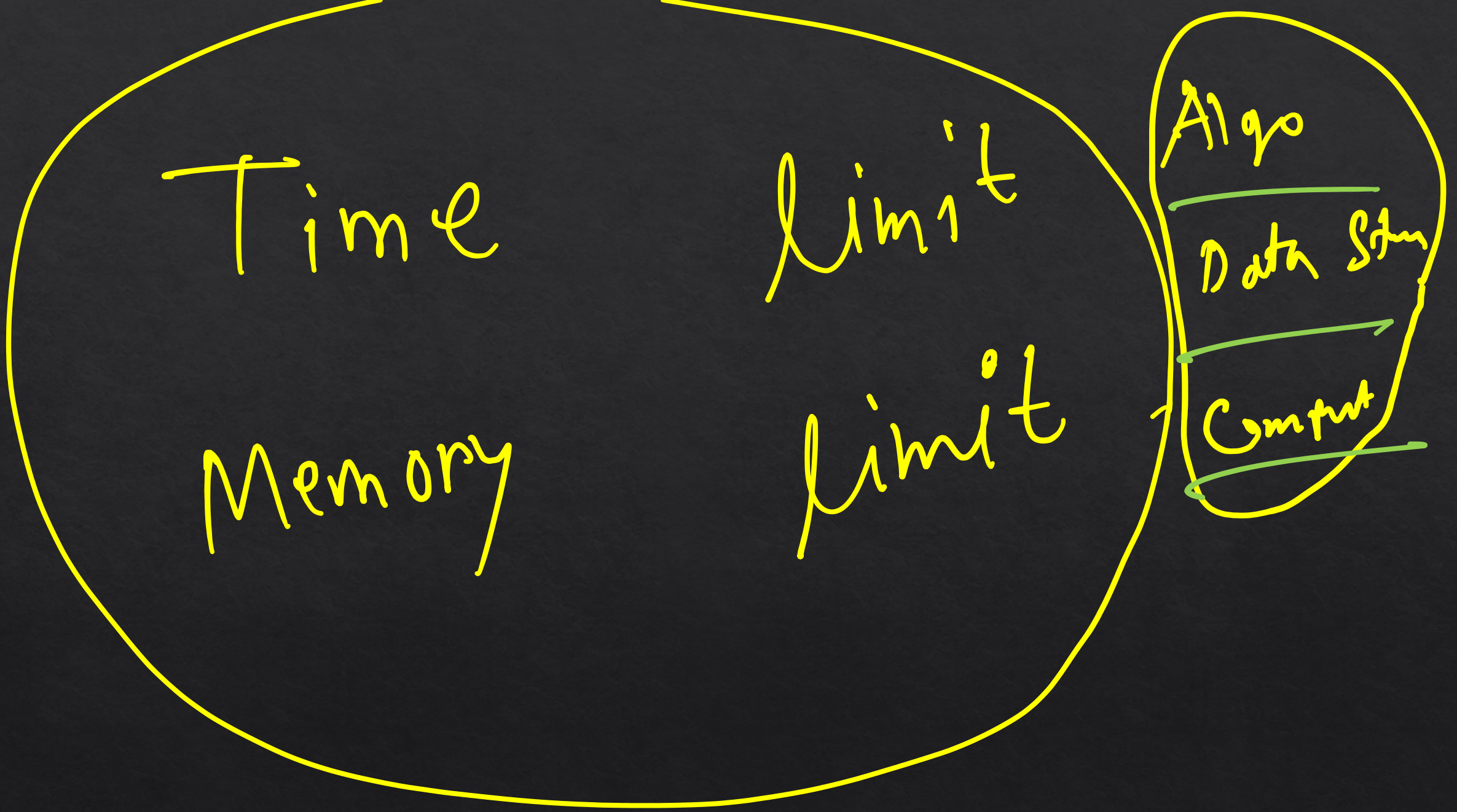

Office
Loop
T1
T2
T3

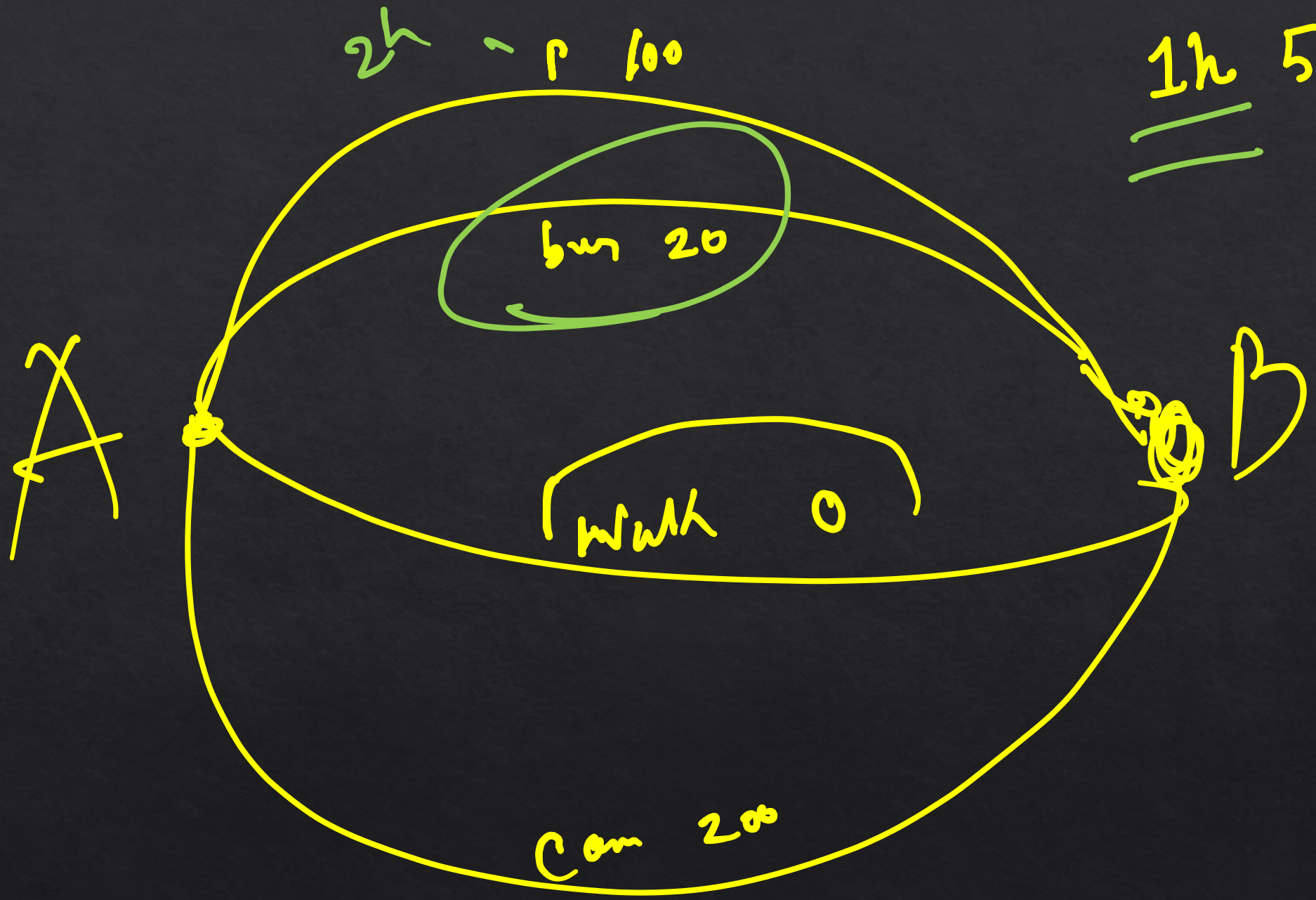
Recursion

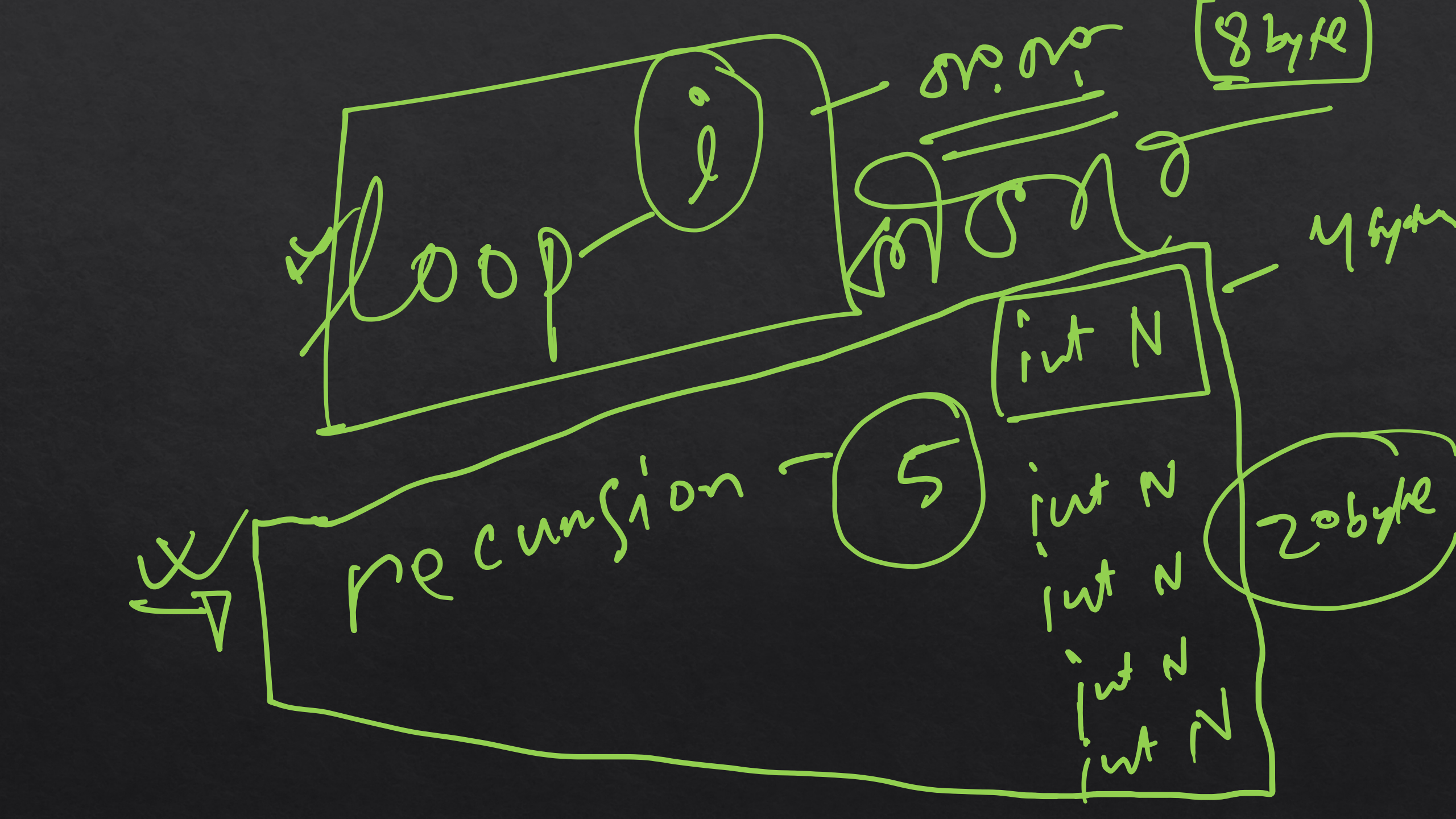



Compiler
#include <stdio.h>
void add ();
void main ()
{
add ();
}
void add ()
{
printf("a");
}
IDE
2022
ok
void main ()
{
add();
}


#
int
main ( )
{
return 0; ✗
}


Time
Memory
limit
limit
Algo
Data Str
Comput


2h ~ ৳ 100
1h 50Taka
Bus 20
A
B
Walk 0
Car 200


loop
i
8byte
recursion
5
int N
int N
int N
int N
int N
20byte