



Doubts with Lakshay Bhaiya [Week 2]

Special class

Feedback

=

→ Bachle → Revise

→ C++ Compilation

=

doubts
↳ feel
↳
Samjh
||

Conditionals & Loops

Special class

→ while

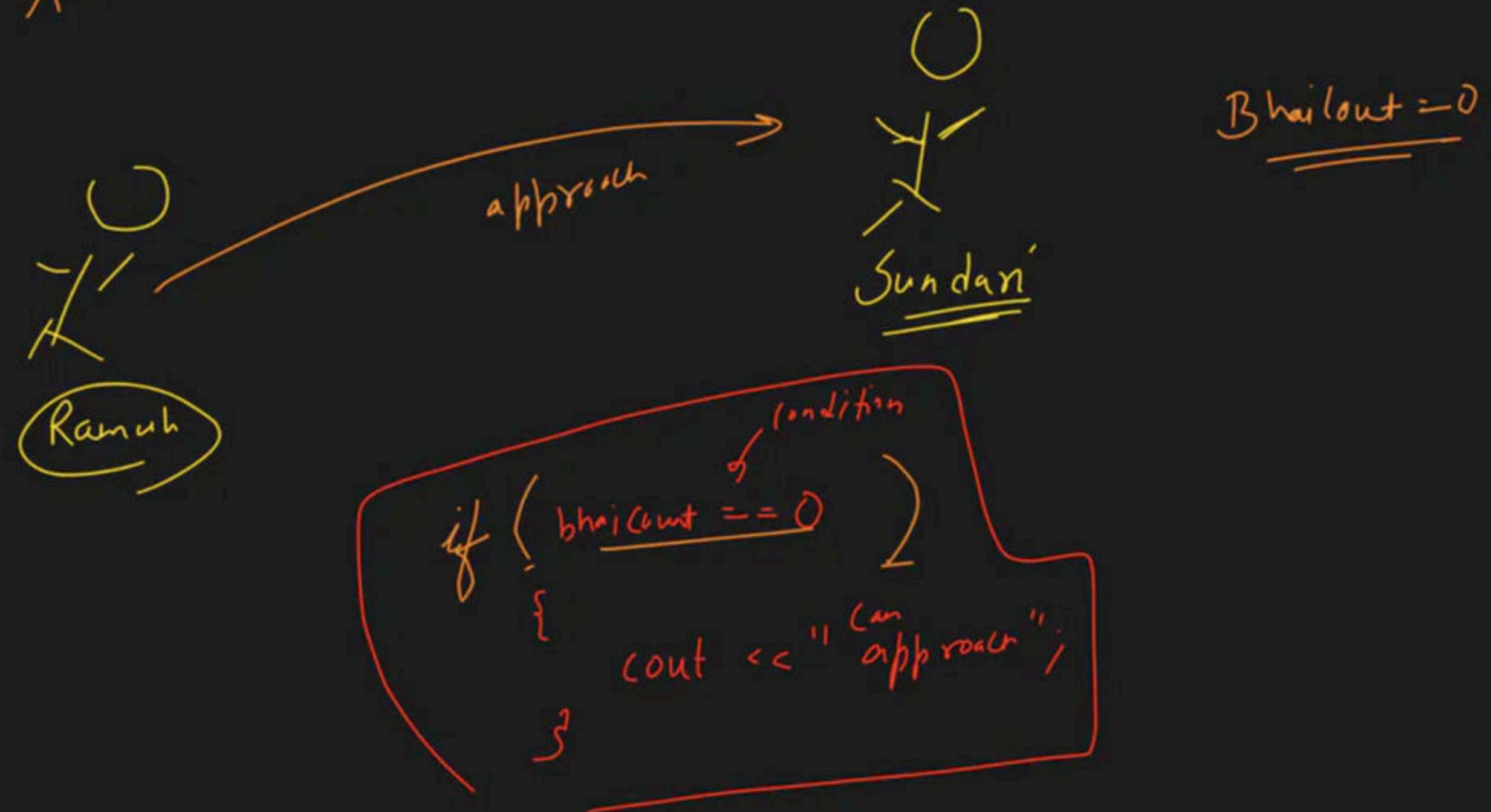
→ for

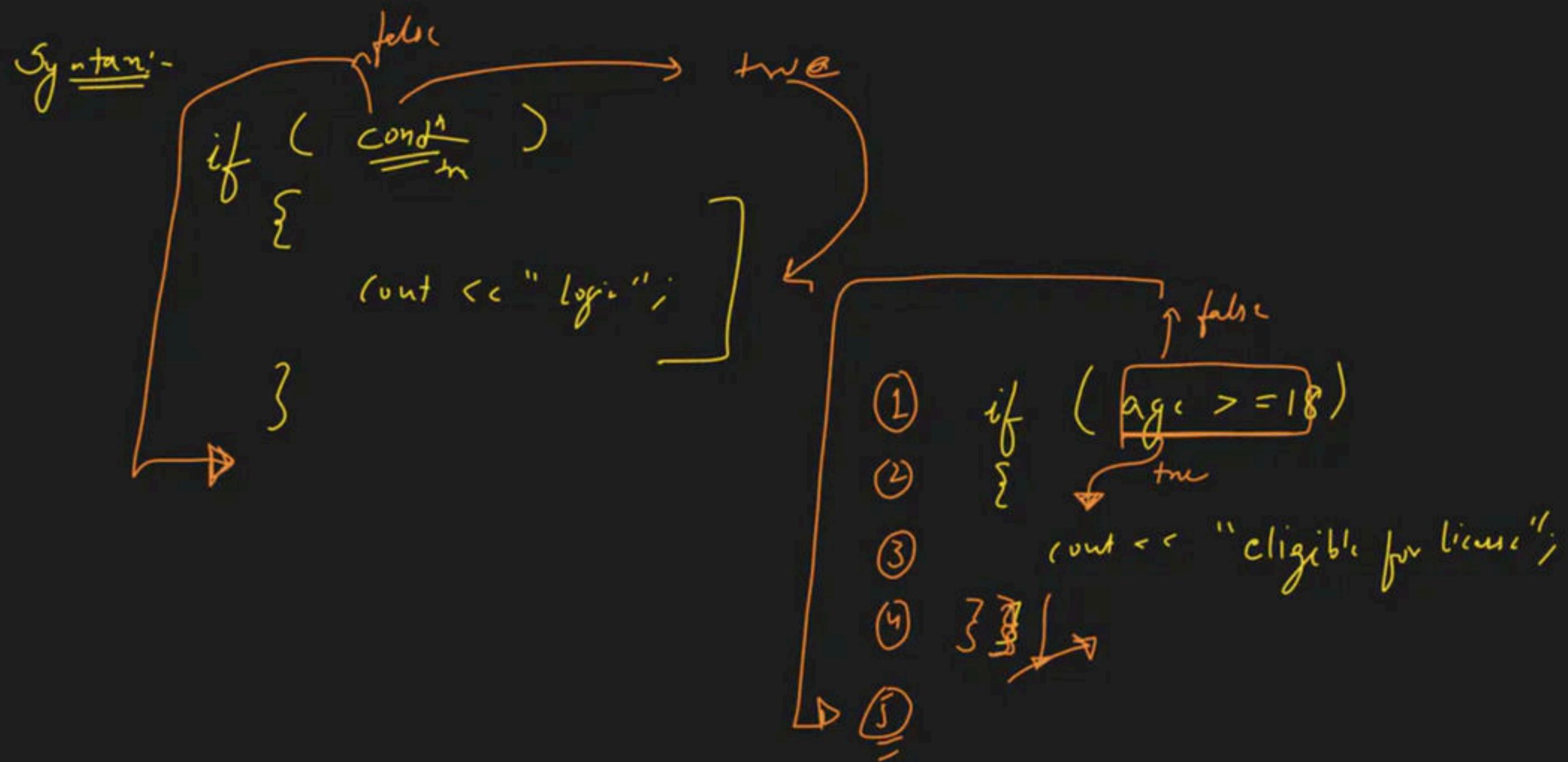
→ do while

```
for(i;i;i){ }
```

Why doesn't
Run?

Conditionals :-

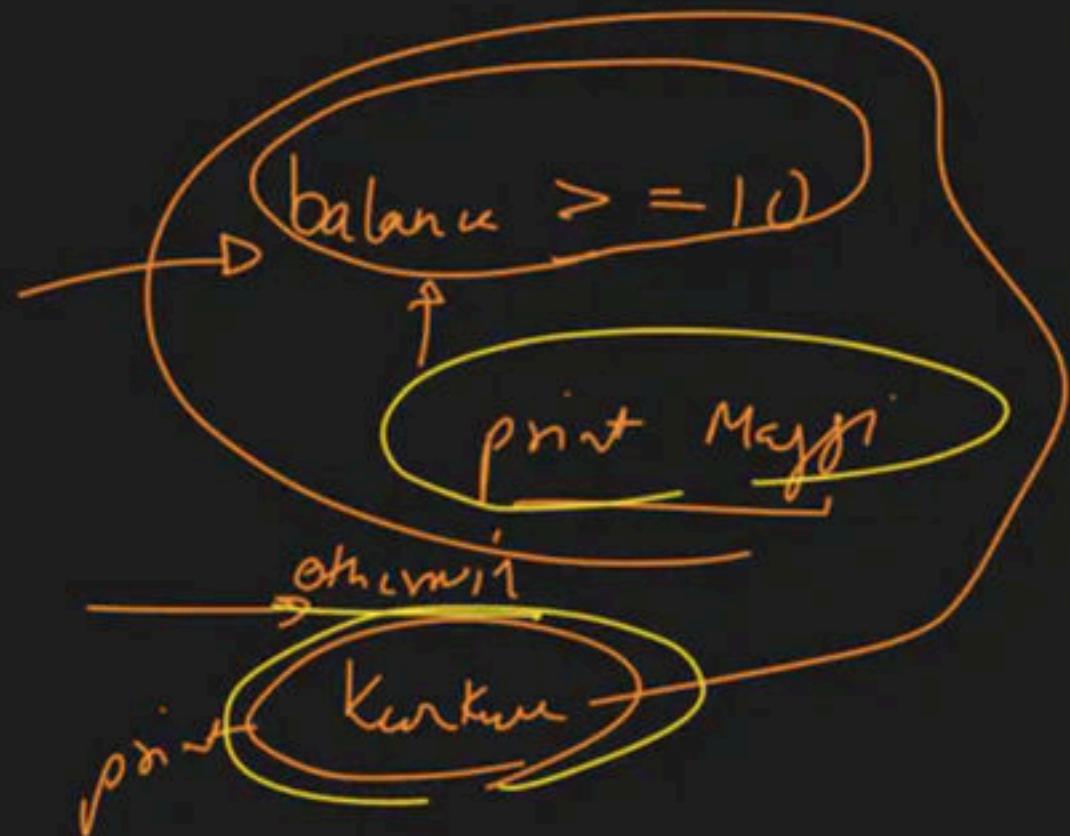




if - block



```
if ( balance >= 10 )  
{  
    cout << "Maggi";  
}  
else  
{  
    cout << "Kurkure";  
}
```



if - block

if else block

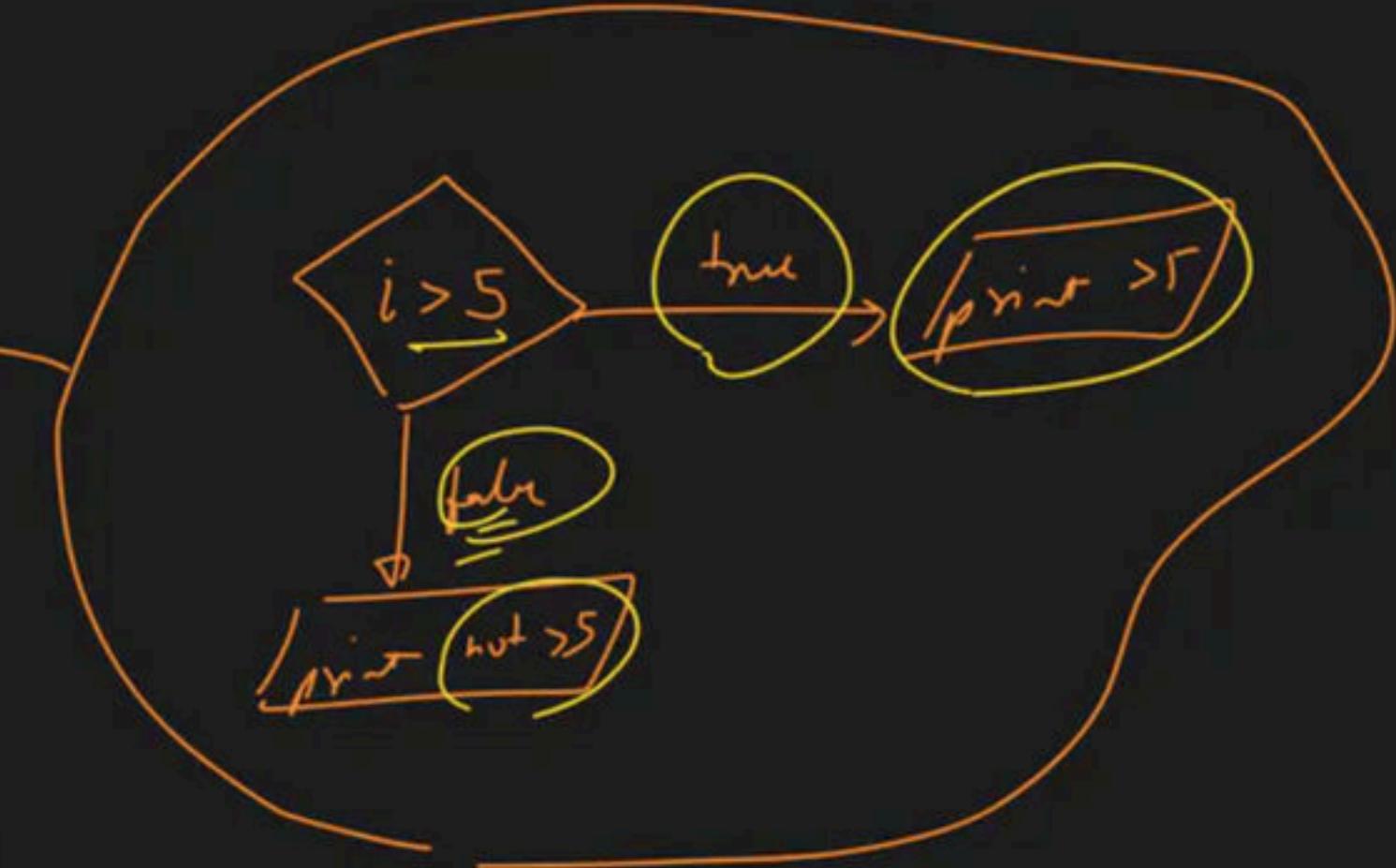
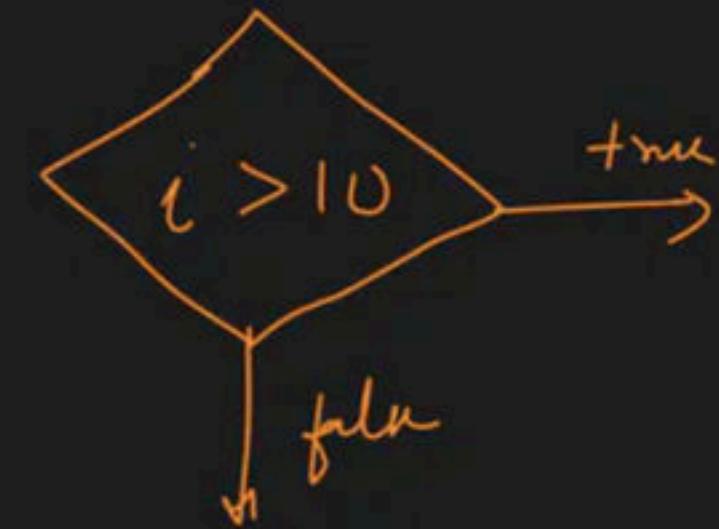
Syntactic -

```
if (cond)
{
    // work
}
else
{
    // logic
}
```

```

if ( i> 5 )
{
    cout << " > 5 ";
}
else
{
    cout << " not > 5 ";
}

```



H
E

sides == 3

true

print triangle

false → print not a triangle

```
if ( sides == 3 )  
{  
    cout << "triangle";
```

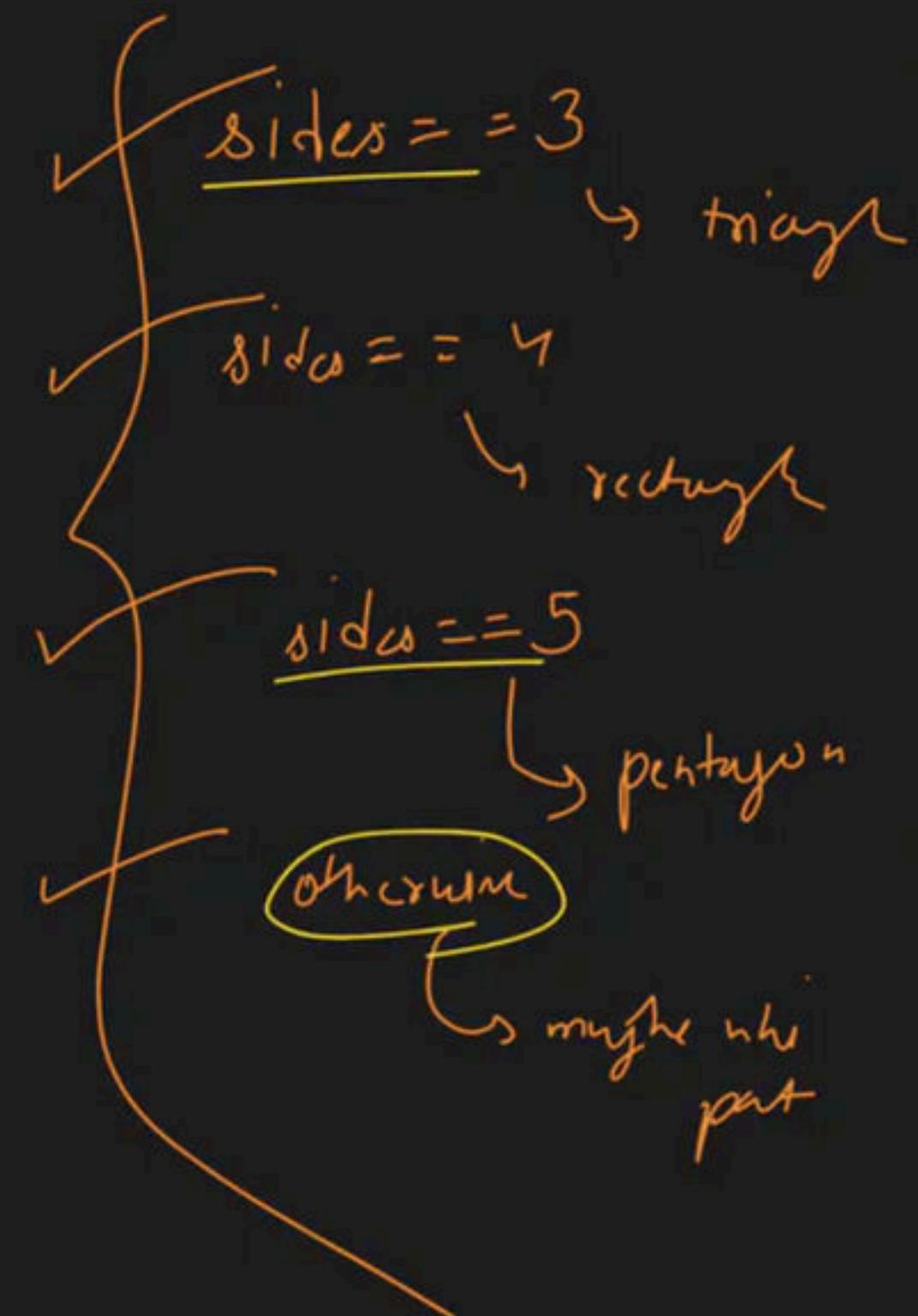
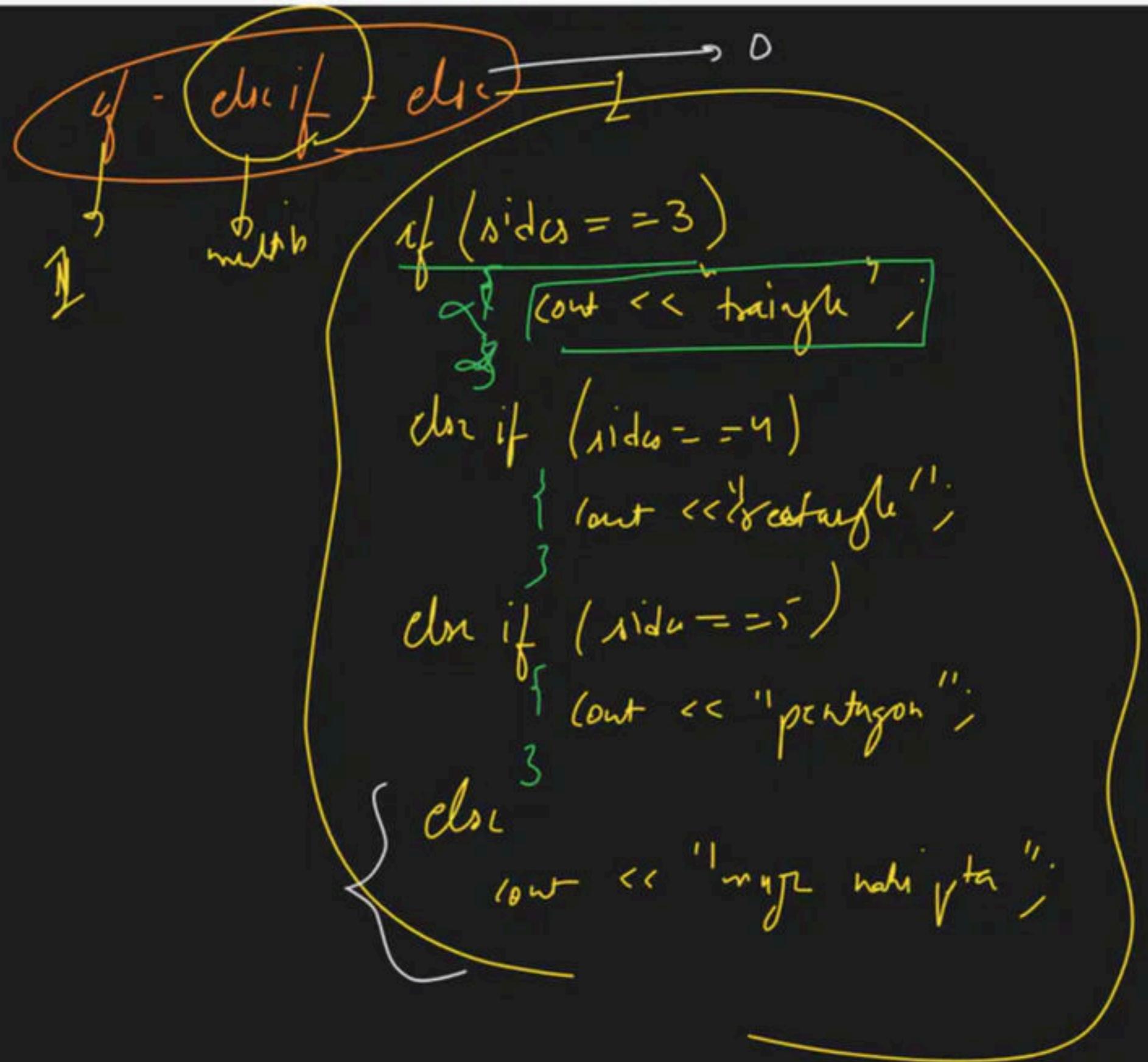
}

else

{

```
    cout << "not a triangle";
```

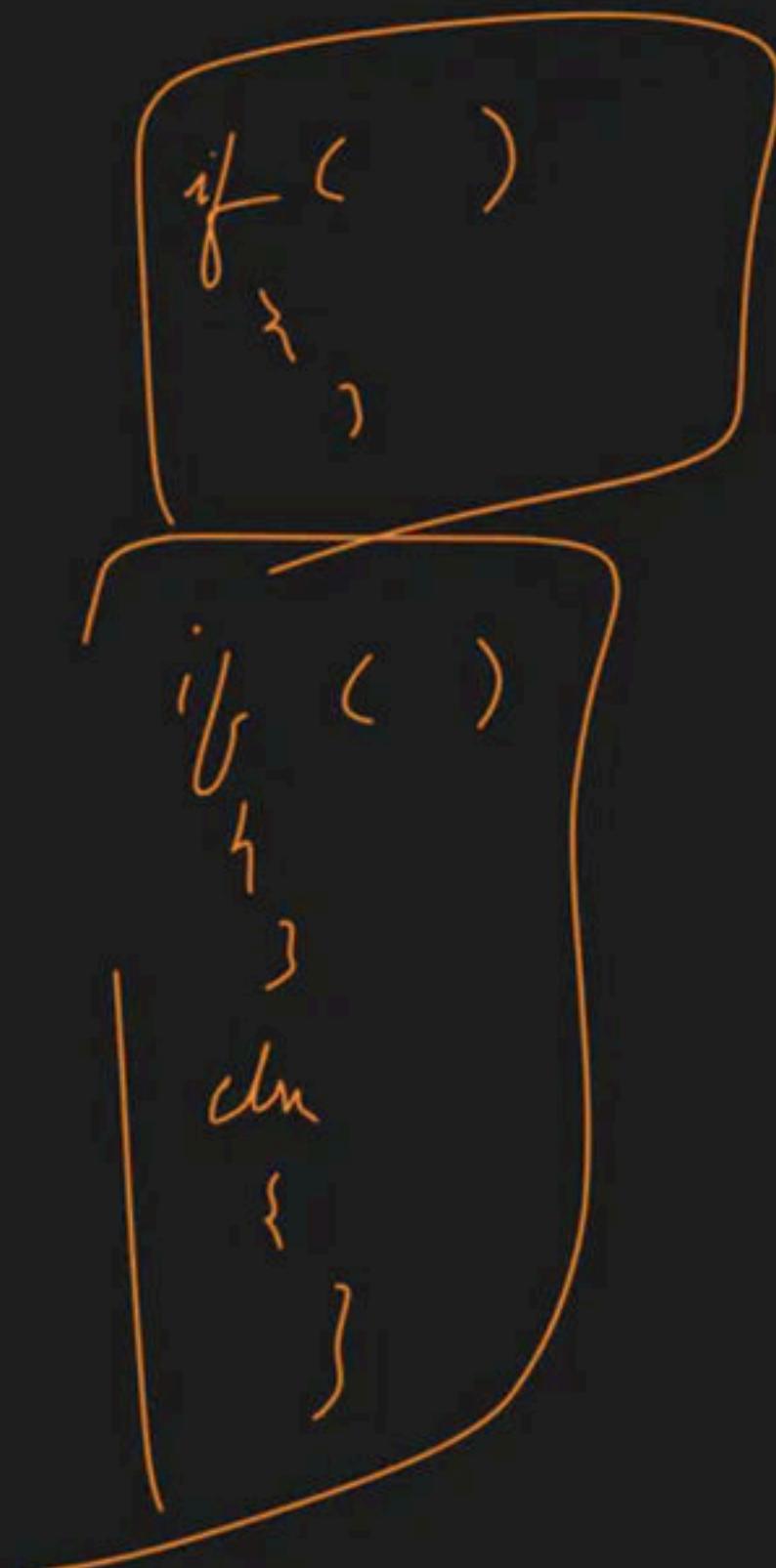
}

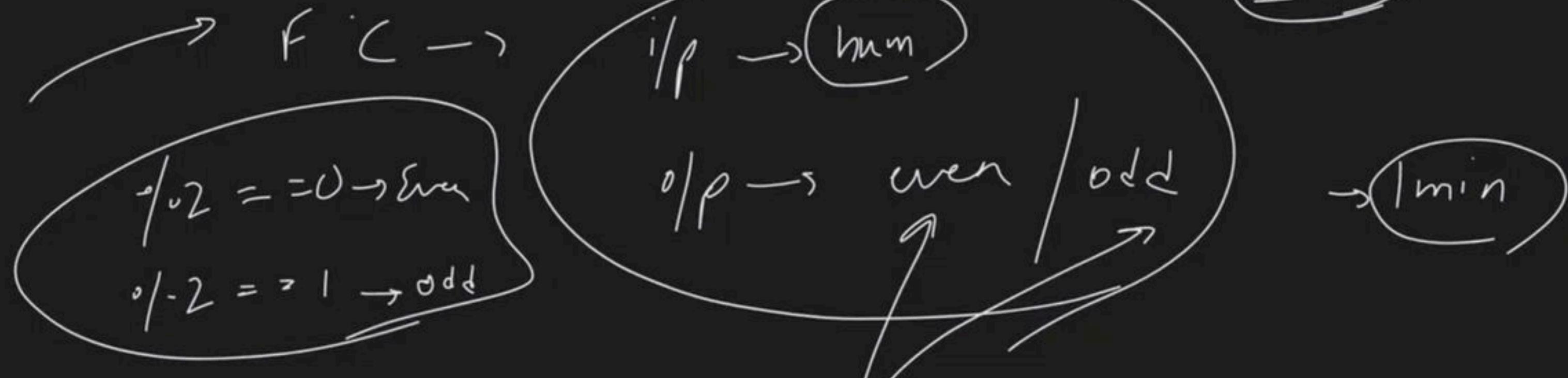
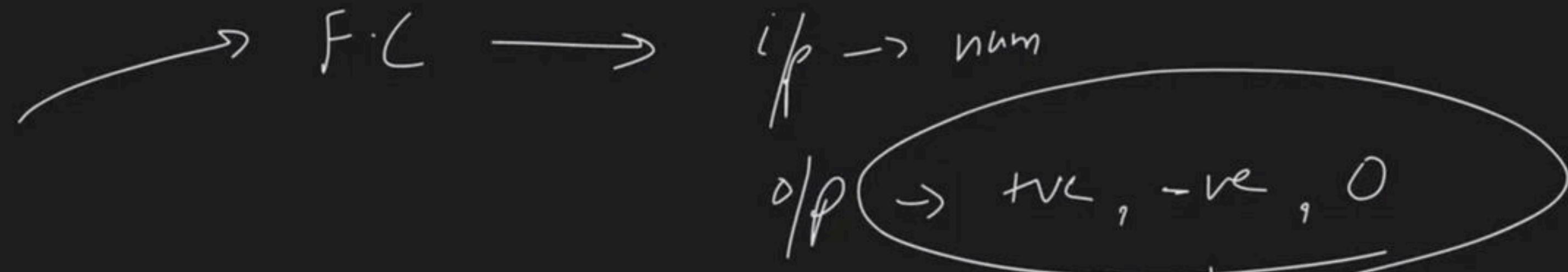


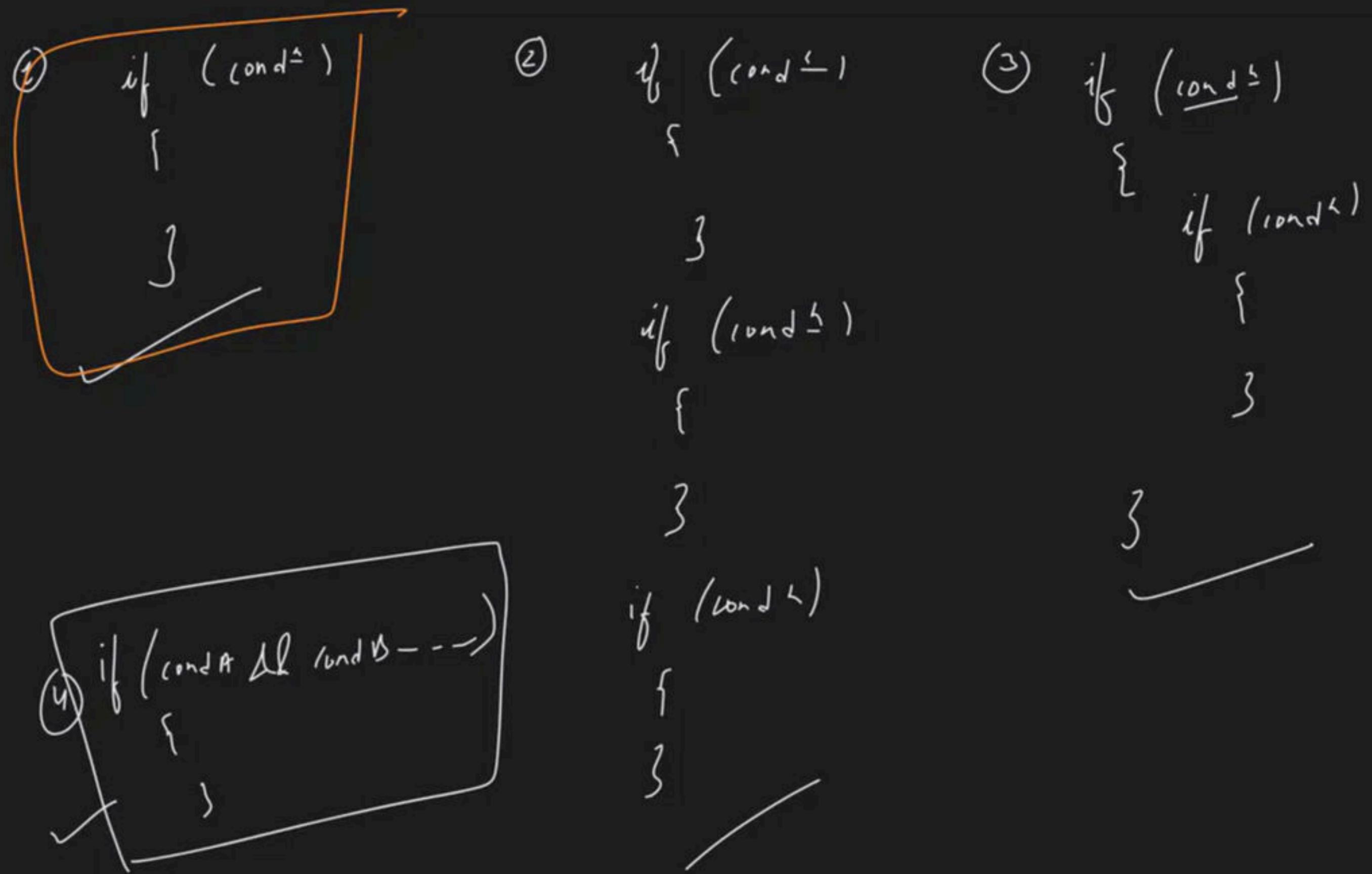
~~if - else if - else~~

if (cond₁)
{
 ...
}
else if (cond₂)
{
 ...
}
else if (cond₃)
{
 ...
}
else
{
 ...
}

optional







if (cond)

{

}

do:

{

}

if (cond)

{

if ()

{
do {

}

} }

do:

{

}

$n \rightarrow \text{lin} >> n_j$

if ($n = -5$)

{

>

else if ($n = -4$)

else if ($n = -3$)

--

if ()
{ → }
3

dn if ()
{
| } →
,

dnL { → }
3

if ()
{ → }
3

dn if
|
| →
,

dn if ()
{ → }
3

if ($a > 5$) false

if ($c > 10$)

{
 lout << "Sainik";
}

B

dn

: if ($b == 10$)

-) Tm

{ if ($c > 10$)

-) Tm

{
 lout << "Sipahi";
}

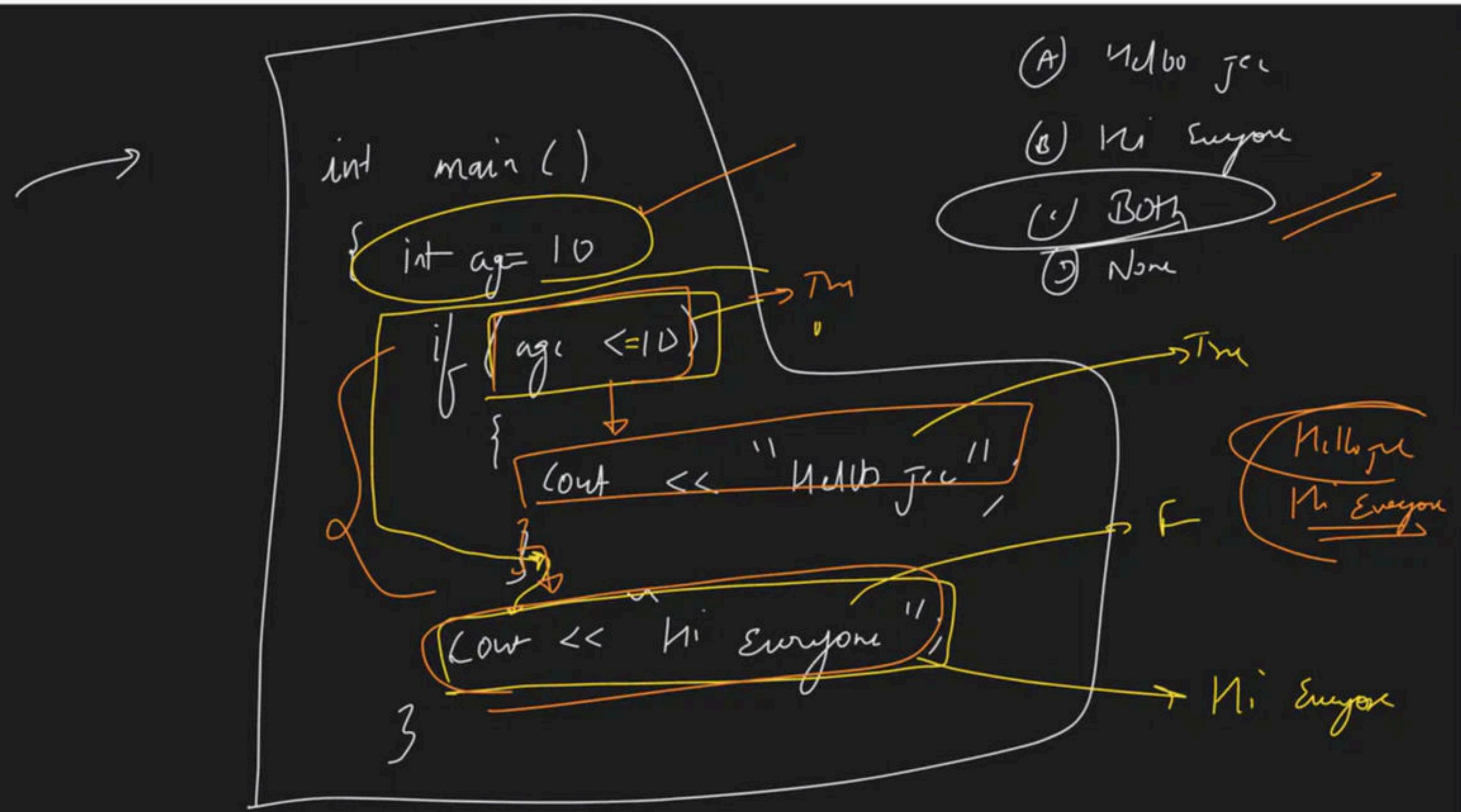
False

Sipahi

$a = 5$

$b = 10$

$c = 15$





MCQ^Δ

loop

for

while

do while

for - each

initialisation

condition

STL

for

int i=0;

i<10

i = i+1

cout << "Babbar";

logic

switch
case

array op

typically
trust

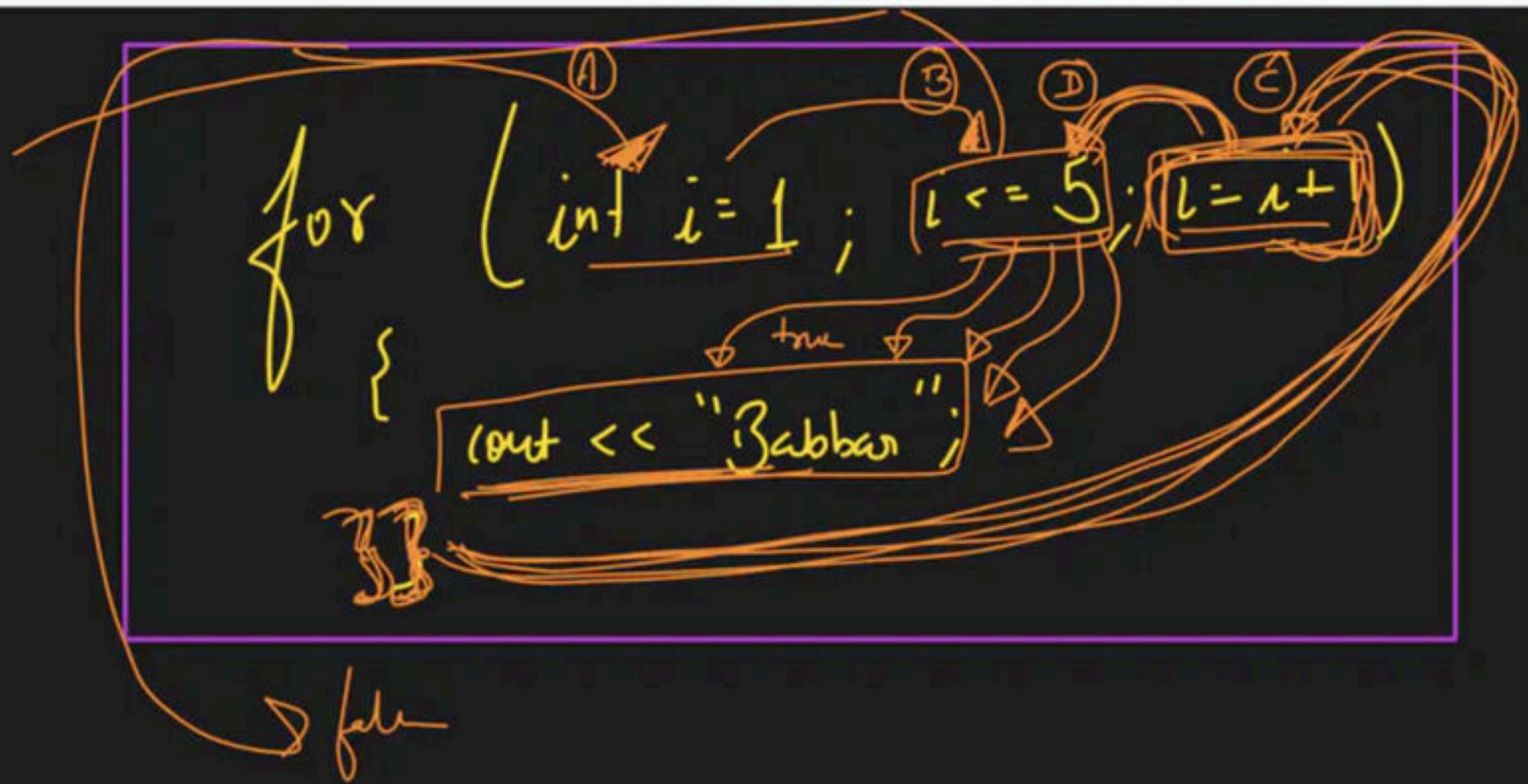
3rd

MS DHONI

for (initialisation ; condⁿ ; up dation)

3

// begin



→ false

$i <= 1 \rightarrow$ false

$i <= 5 \rightarrow$ True

"Babbar"
 $i = i + 1 = 1 + 1 = 2$

$2 <= 5 \rightarrow$ True

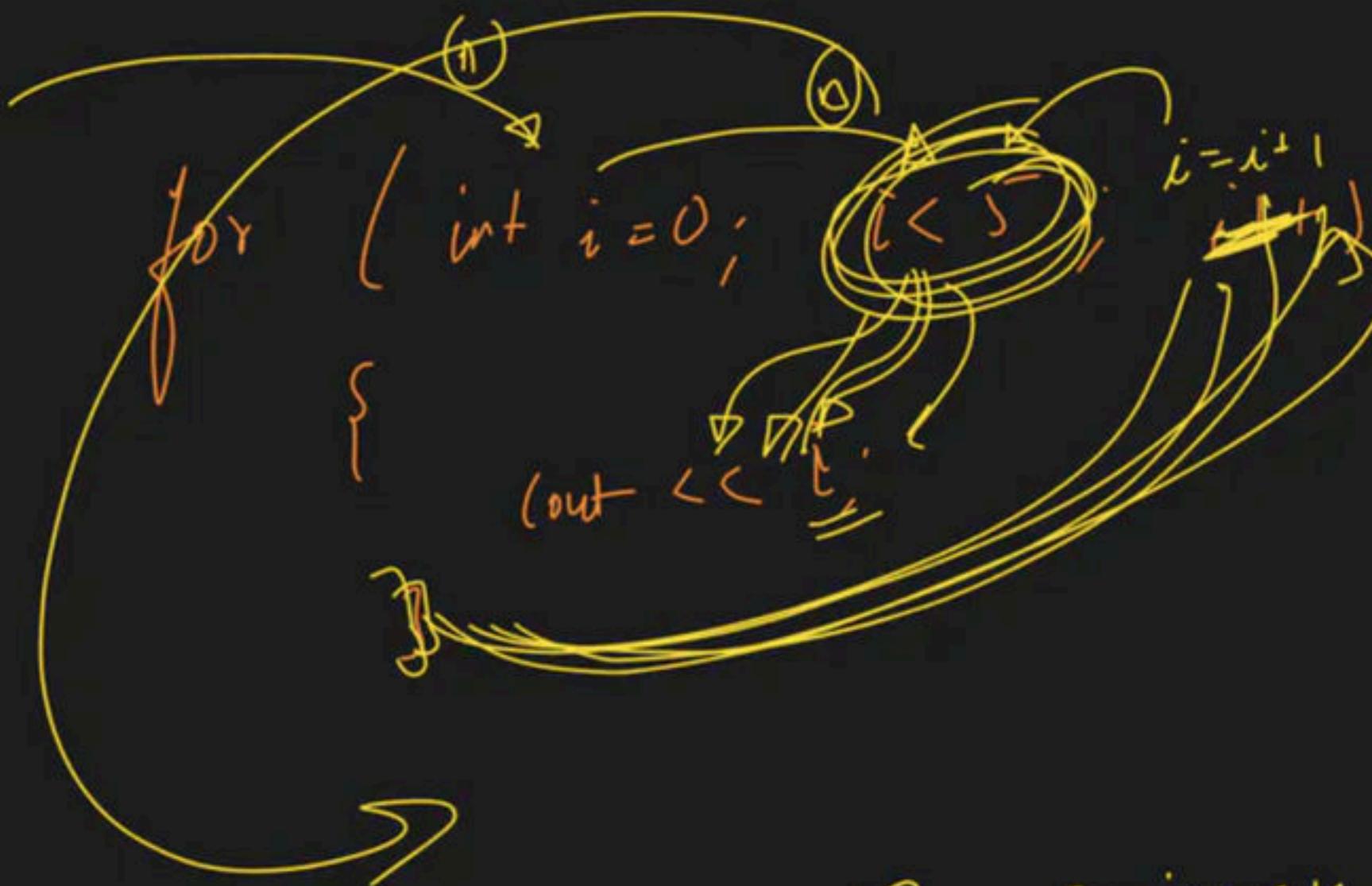
"Babbar"
 $i = i + 1 = 2 + 1 = 3$

$3 <= 5 \rightarrow$ True

"Babbar"
 $i = i + 1 = 3 + 1 = 4$

$4 <= 5 \rightarrow$ True

"Babbar"
 $i = i + 1 = 4 + 1 = 5$



$i = i + 1 \rightarrow 1$

$j < r \rightarrow \text{false}$

$i = i + 1 = 3 + 1 \rightarrow 4$

$y < r \rightarrow \text{true}$

$\sim y$

$i = 0$
 $0 < 5 \rightarrow \text{true}$

"0"

$i = i + 1 = 0 + 1 = 1$

$1 < 5 \rightarrow \text{true}$

"1"

$i = i + 1 = 1 + 1 = 2$

$2 < 5 \rightarrow \text{true}$

"2"

$i = i + 1 = 2 + 1 = 3$

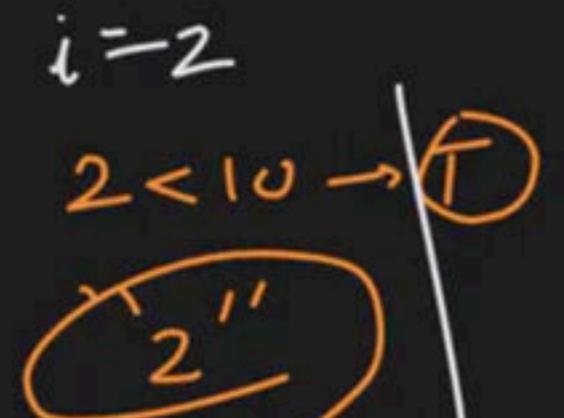
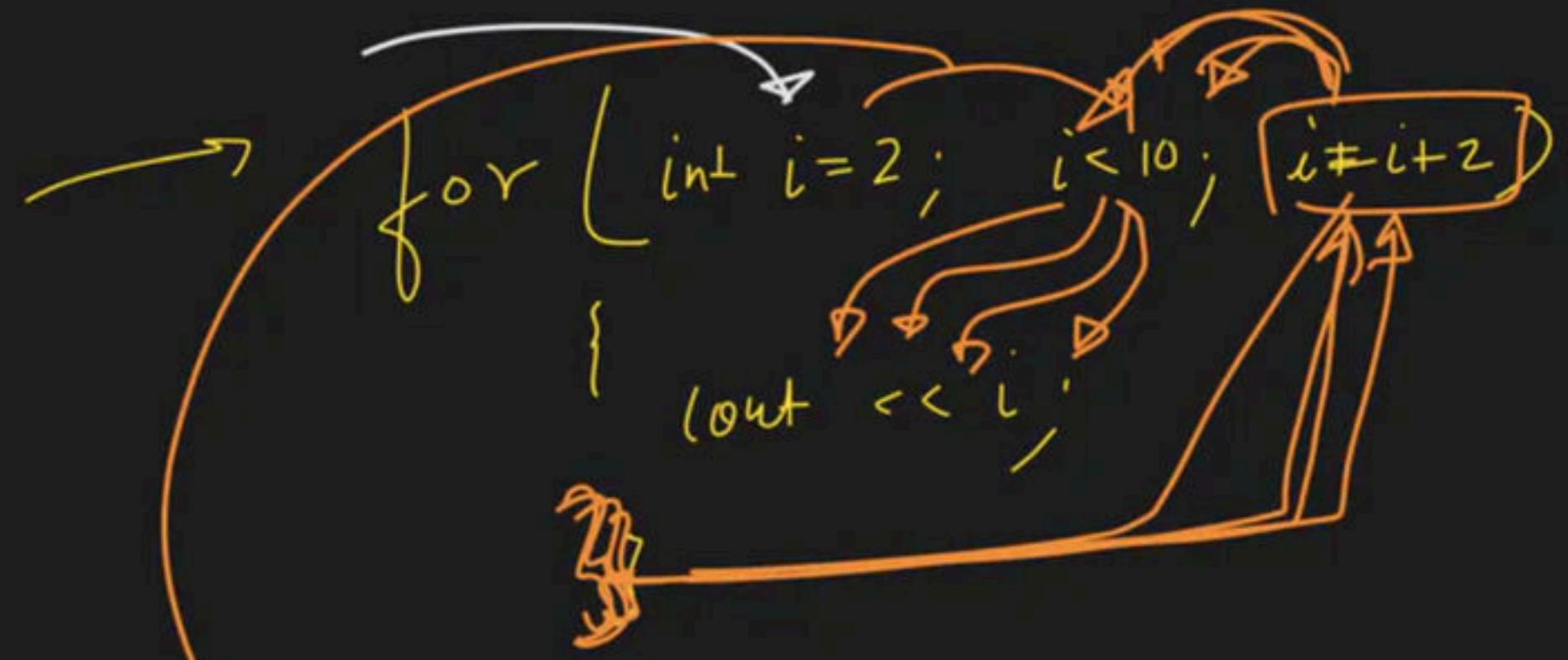
$3 < 5 \rightarrow \text{true}$

~ 3

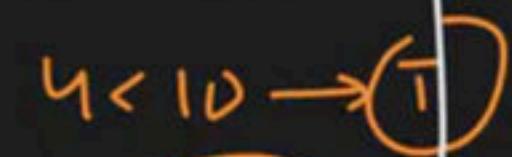
```
for (int i=10; i<=12; i=i+1)  
{  
    cout << "Monica, my darling"  
}
```

Dry Run

B 2 min



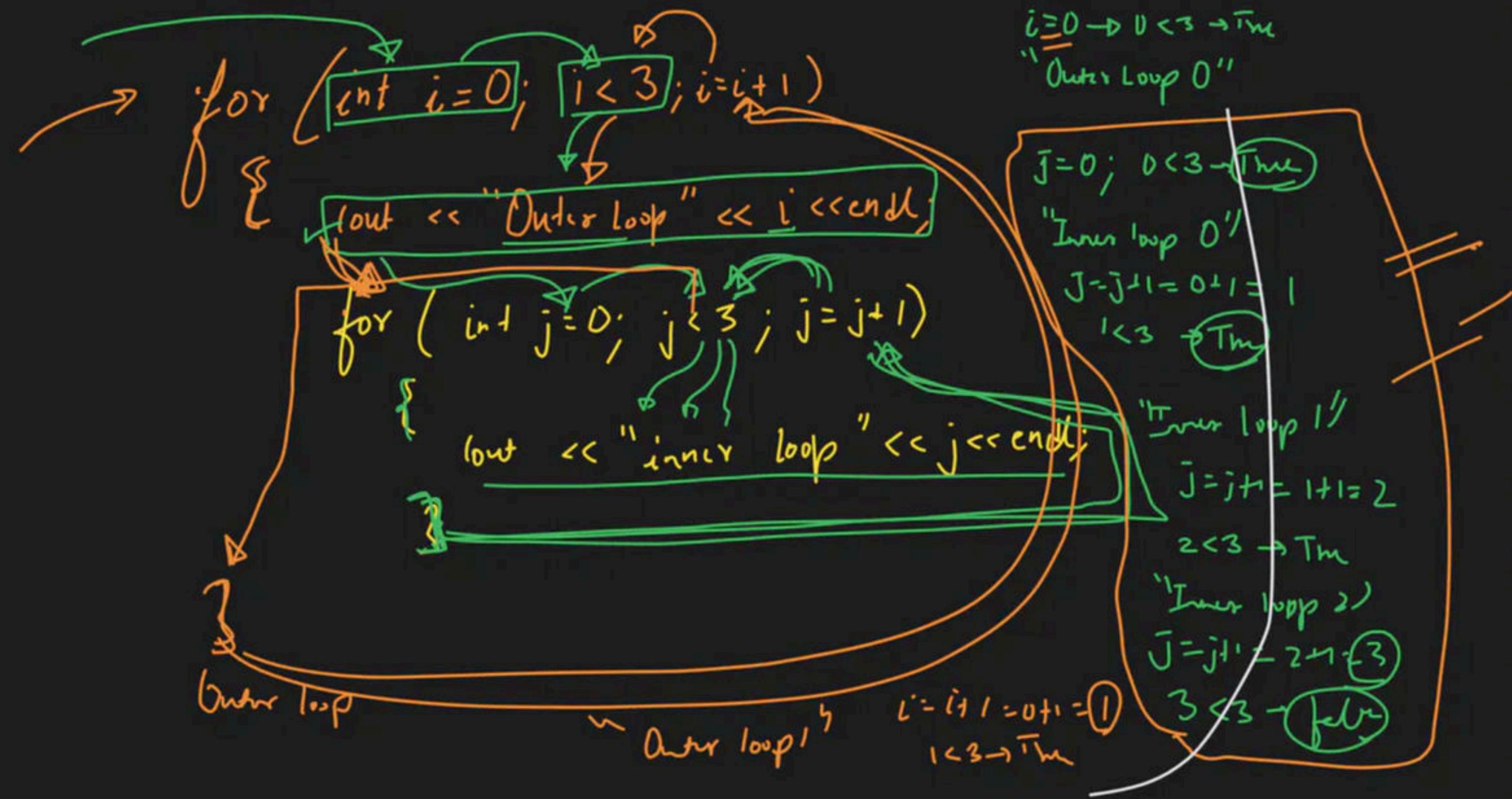
$$i = i + 2 = 2 + 2 = 4$$



$$i = i + 2 = 4 + 2 = 6$$



$$i = i + 2 = 6 + 2 = 8$$



```
for ( int i=0; i<j; i=i+1 )
```

```
    cout << "Hi";
```

```
}
```

```
for ( ; ; )
```

```
{
```

```
    }
```

0
-1
-2
-3

<5

```
for (int i=0; i<5; i=i-1)  
{  
    cout << "i"  
}
```

\rightarrow || bar \rightarrow Name Point

\rightarrow lg table \rightarrow print

\rightarrow 1 \rightarrow 100 \rightarrow Even no. \rightarrow print

0

|| timu ->

```
for (int i=1; i<=11; i++)  
{  
    cout << "Jabbar";  
}
```

①

lg table

```
for (int i = 1; i <= 10; i++)  
{  
    cout << lg x i;  
}
```

lg x 1
lg x 2
lg x 3
lg x 4
lg x 5
lg x 6
lg x 7
lg x 8
lg x 9
lg x 10

③

$i \rightarrow 100$

End

```
for (int i = 1; i <= 100; i++)  
{  
    if ((i % 2 == 0)  
        cout << i << endl;  
}
```

A

int h;

if (cin >= n)

cout << "Love Batbar"

Bunny
Question

(b)

int n = 10;

if (cout << n

{

cout << "Love Batbar";

}

Fony

Our

Pattern Printing

$\Rightarrow i = 0$

do {

// statement

 } while ($i > 1$)

for ()
 while

int i = 0

 while ($i > 1$)

{

// statement

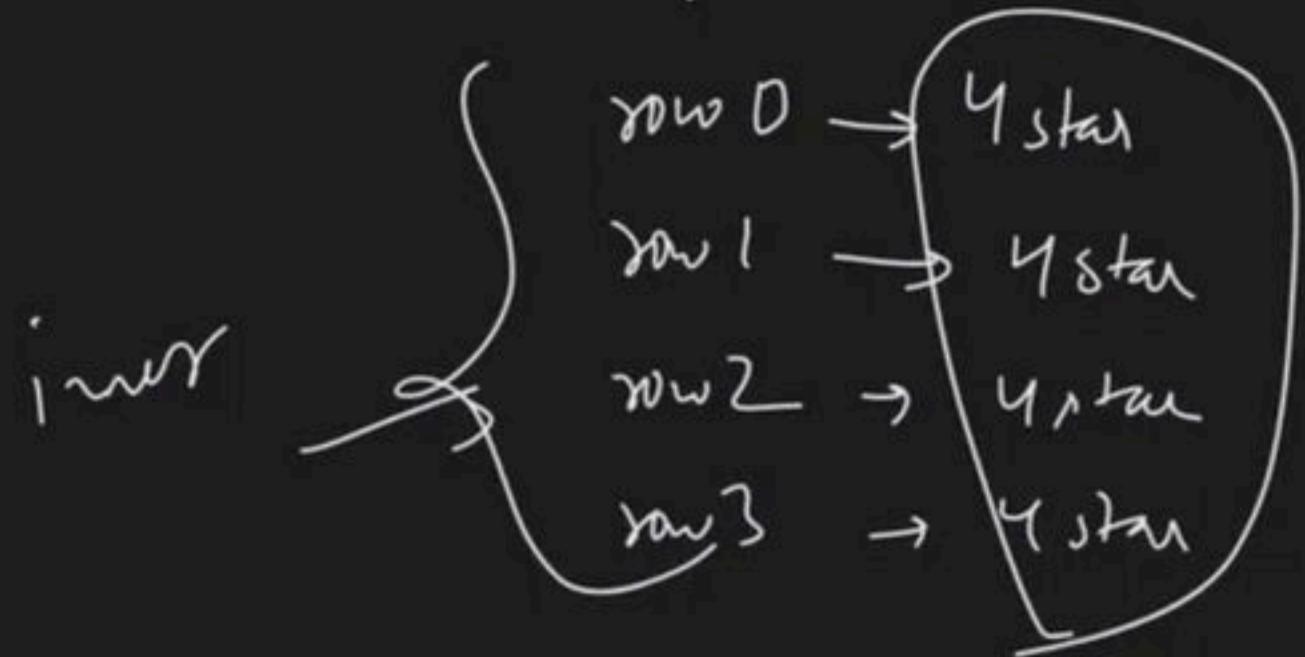
do-while
 ↓
 X ✓

Square

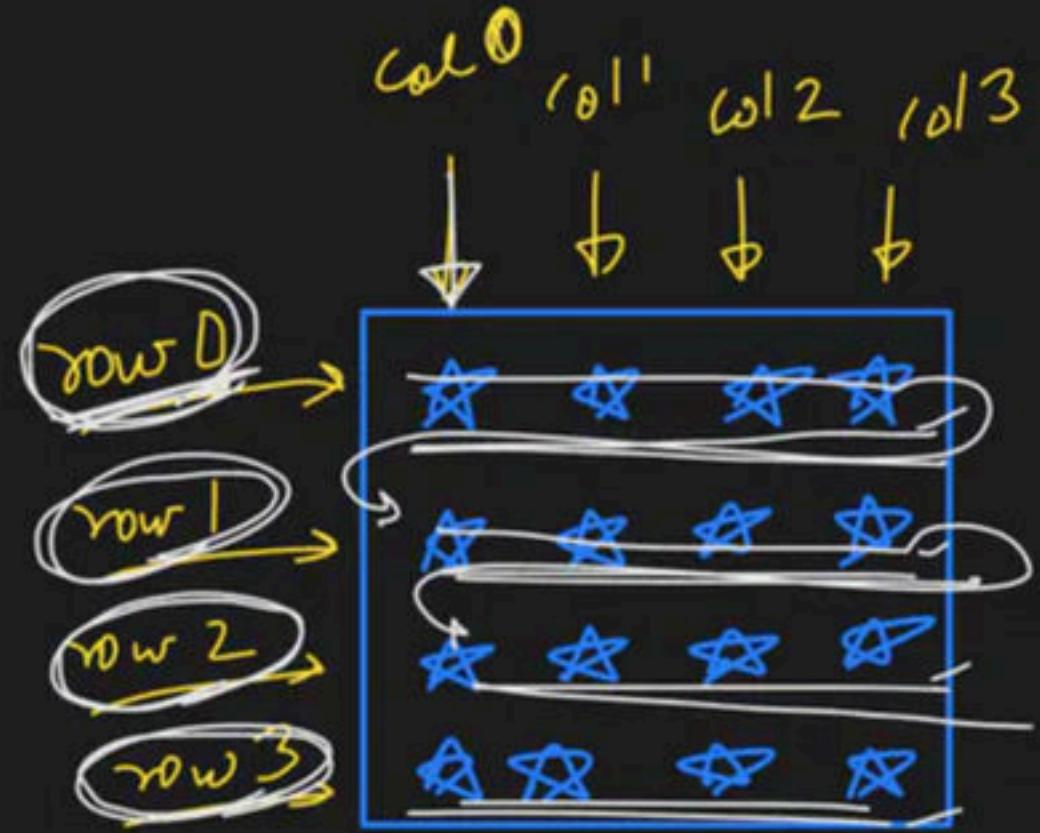
① find no. of row



② write down for each row



Outer loop in
Kya Karne h



every row → 4 star grid

$y \rightarrow \text{row}$

Logic \rightarrow $y \downarrow \text{last}$

$\text{cout} << \text{row}$



```
for (int i=0; i < y; i++)
```

{

```
for (int j=0; j < y; j++)
```

{

$\text{cout} << \star;$

}

$\text{cout} << \text{endl};$

}

Pattern n/w

①

②

Pattern

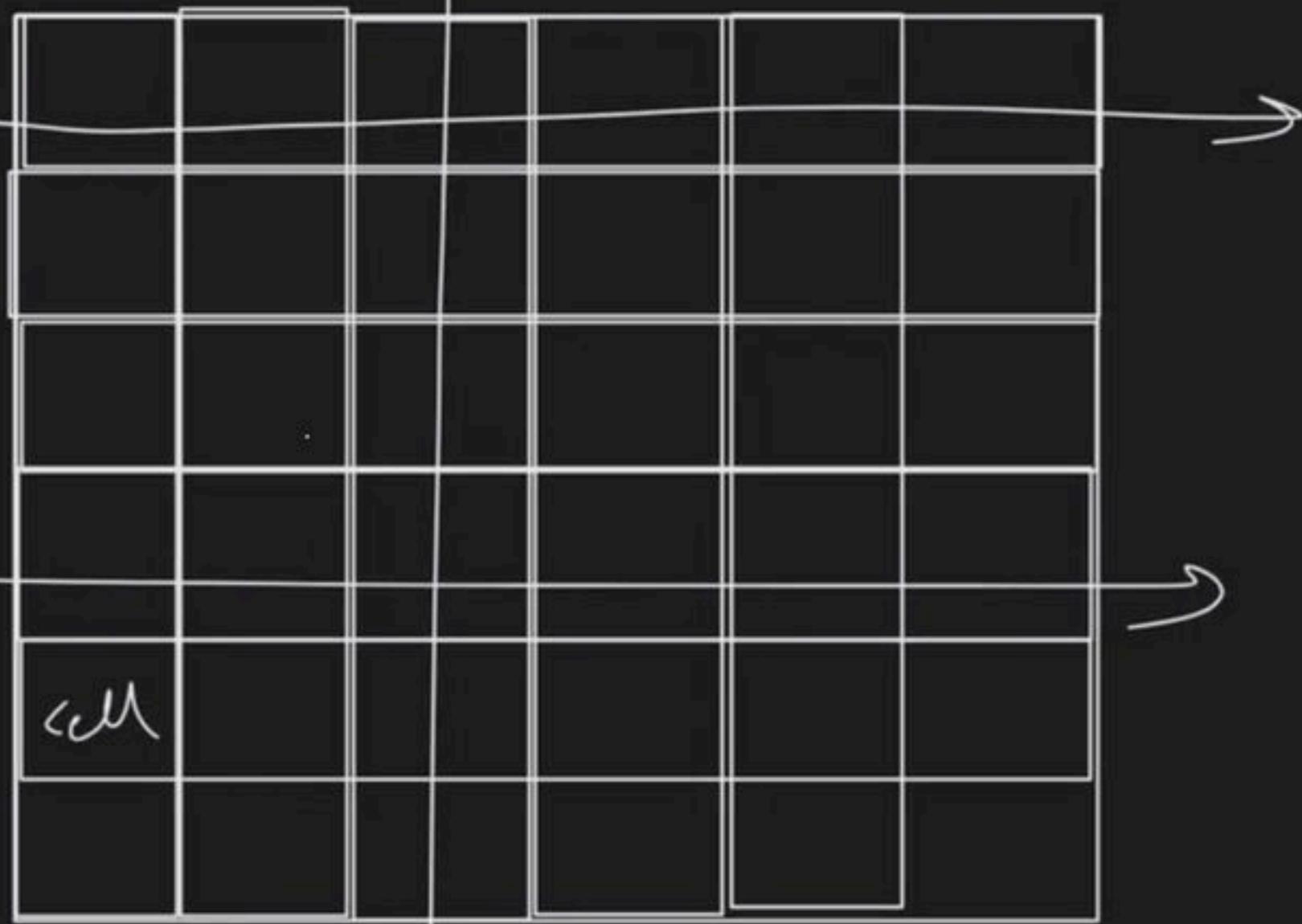
Lecture

Repeat
=

\rightarrow Column pattern
L|R

0 row
② row \rightarrow Kunal Agarwal

row



$i+r \Rightarrow i = i+1$

→ Rectangle

⇒ chrome → edge

$$\frac{i+1}{j}$$

$$j = i + 1$$

① $YOW = 3$ → Outer loop → 3

0 → 3

② $YOW \neq 0$ → 5 star
row 1 → 5 star
row 2 → 5 star

row 0 →	☆	☆	☆	☆	☆
row 1 →	☆	☆	☆	☆	☆
row 2 →	☆	☆	☆	☆	☆

inner loop → 5 star part

5 square

```
for (i=0; i<3; i++)  
    for (j=0; j<3; j=j+1)  
        cout << "
```

① row = 3

Outer
loop

loop → 3 times

row 0	★	★	★
row 1	★	★	★
row 2	★	★	★

②

row 0 → 3 stars

row 1 → 3 stars

row 2 → 3 stars

inner loop → 3 stars

inner loop → 3 stars

~~Rectangle~~

①

$$\text{row} = 3$$

★	★	★	★	★	★	★
★	★	★	★	★	★	★
★	★	★	★	★	★	★

← row 0
← row 1
← row 2

②

row 0 → 6 star
row 1 → 6 star
row 2 → 6 star

inner loop
for row → print
6 stars

```
for (i=0; i<3; i=i+1)
```

```
{
```

```
    for (j=0; j<6; j=j+1)
```

```
    {
```

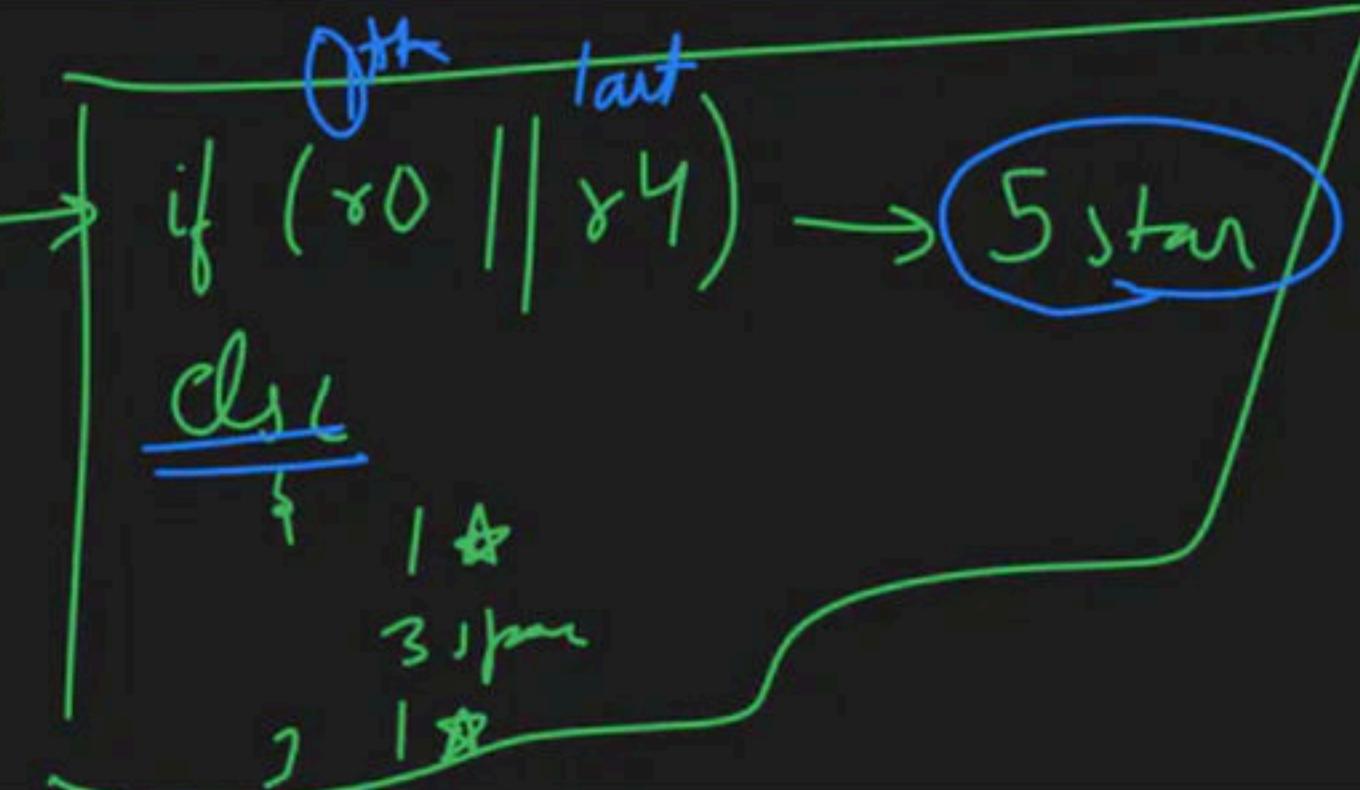
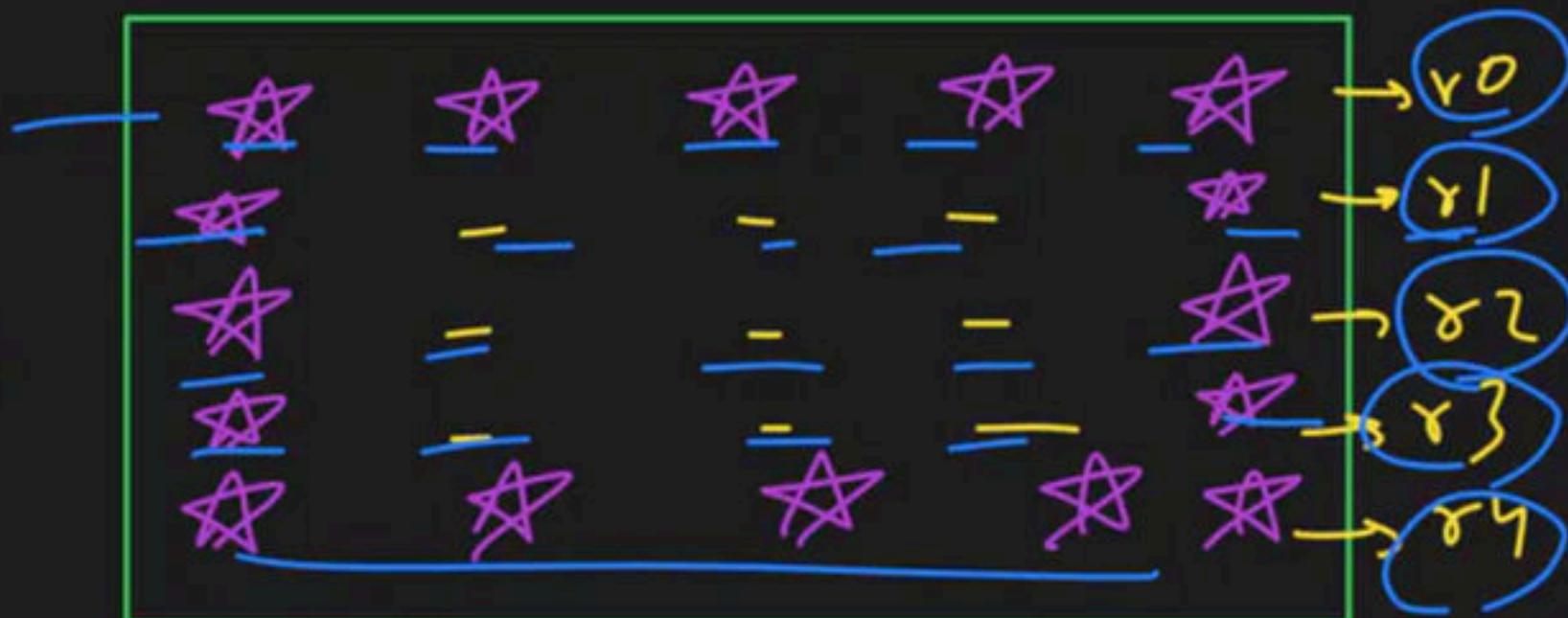
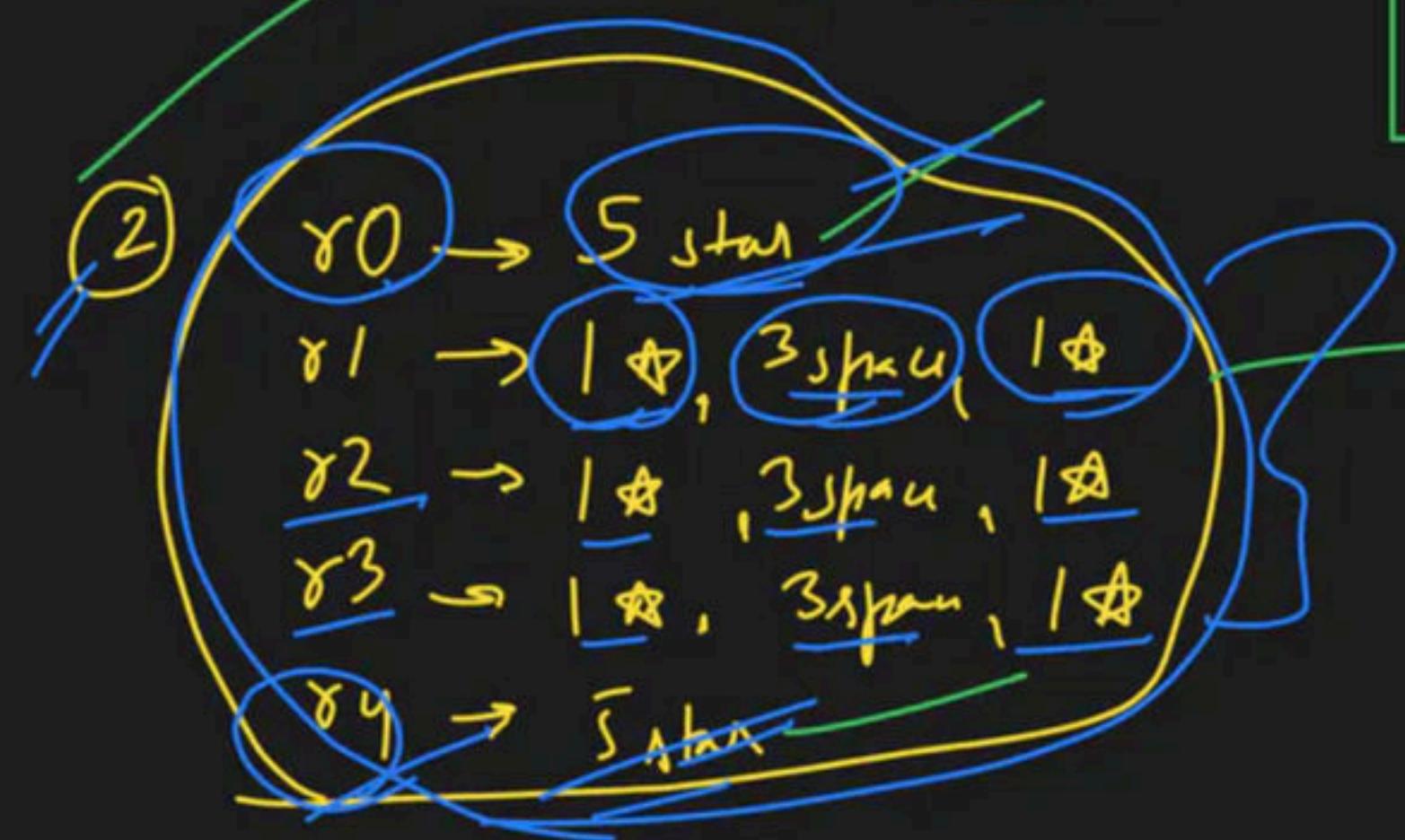
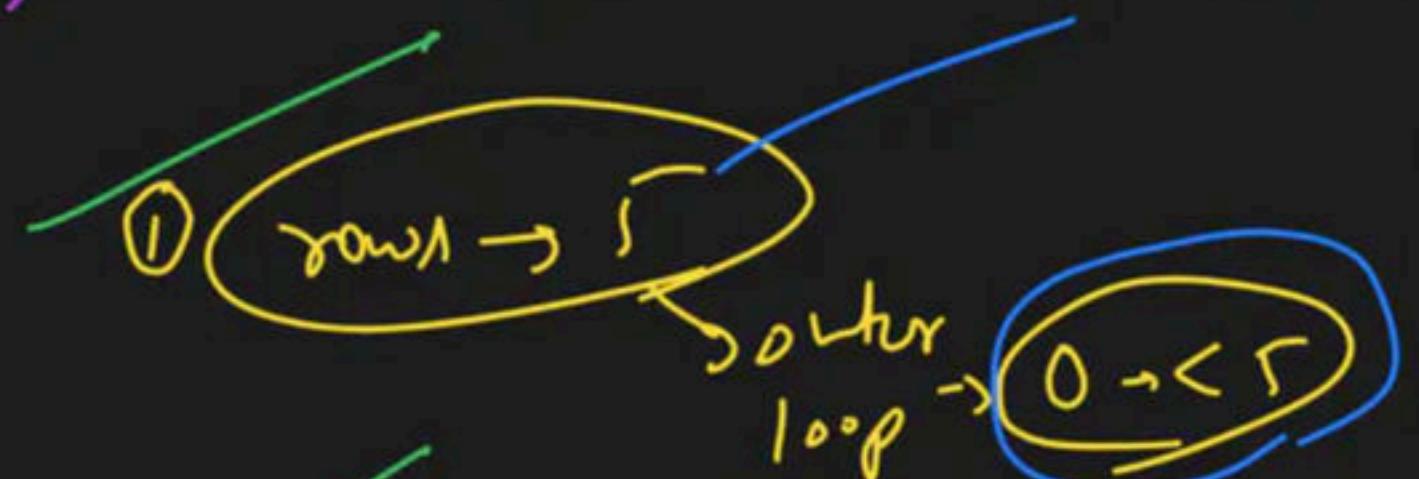
```
        cout << "A" -
```

```
    }
```

```
    cout << endl
```

```
}
```

Hollow Rectangle





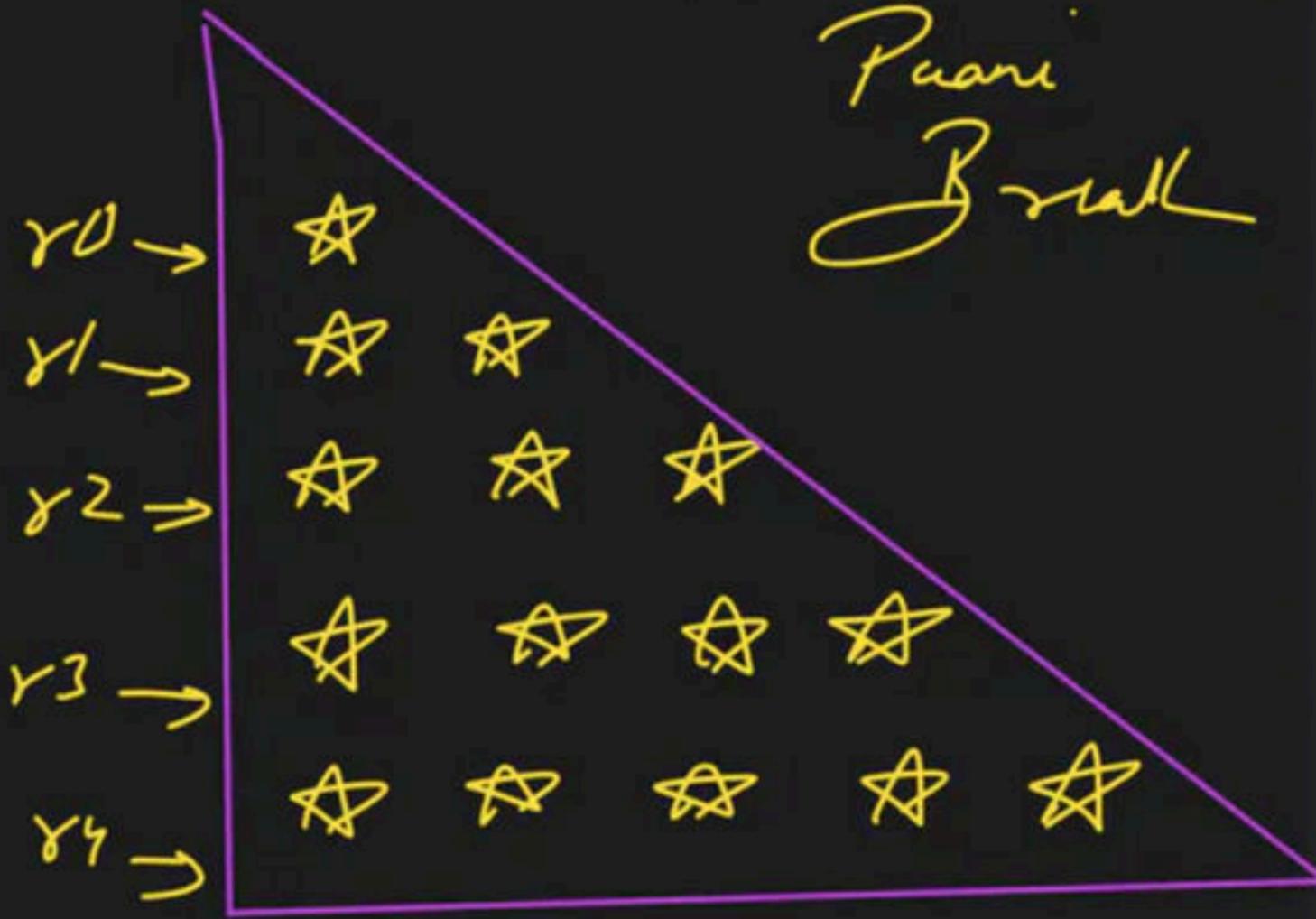
Half Pyramid

① rows = 5

for (row=0; row<5; row++)



inner loop →



row + 1 → stars

2 min
Puan
Brahm

① row count = 0

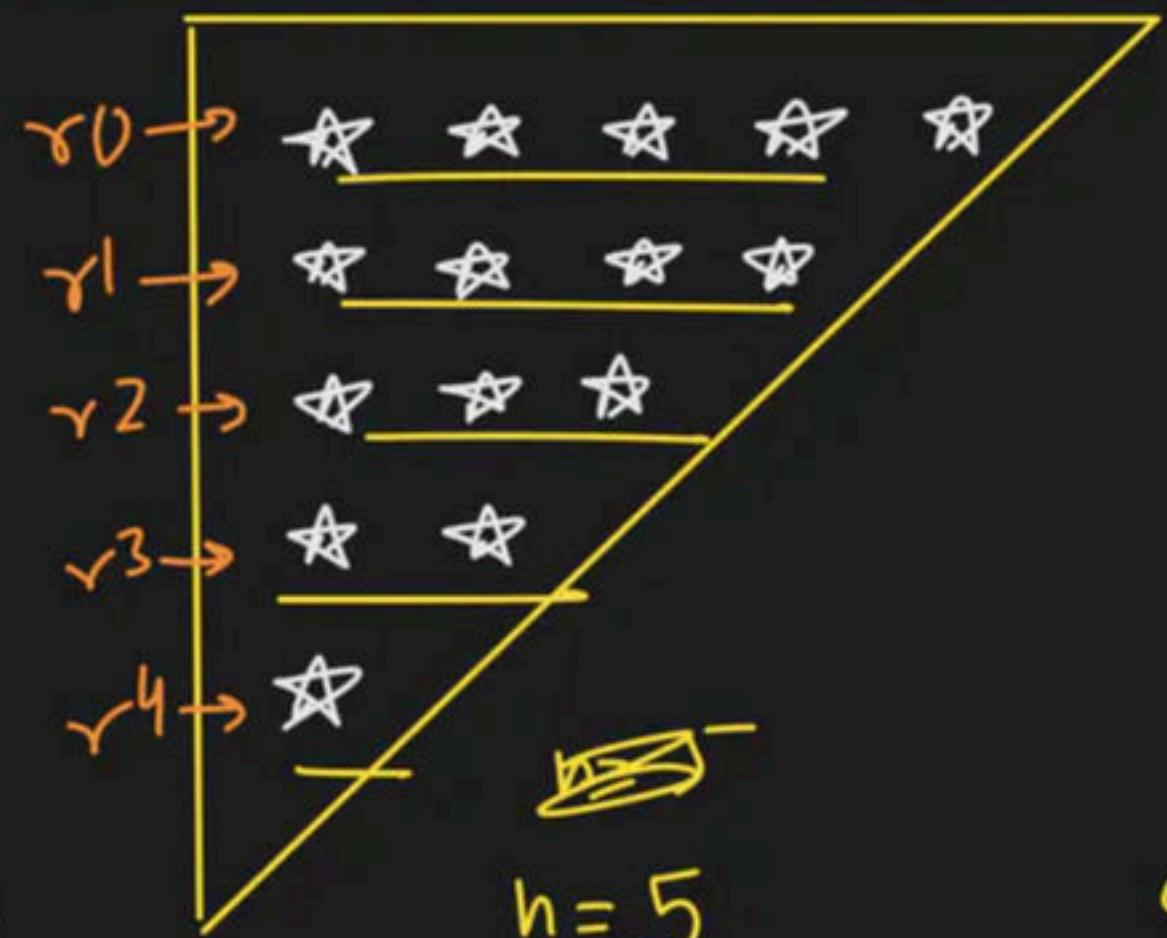
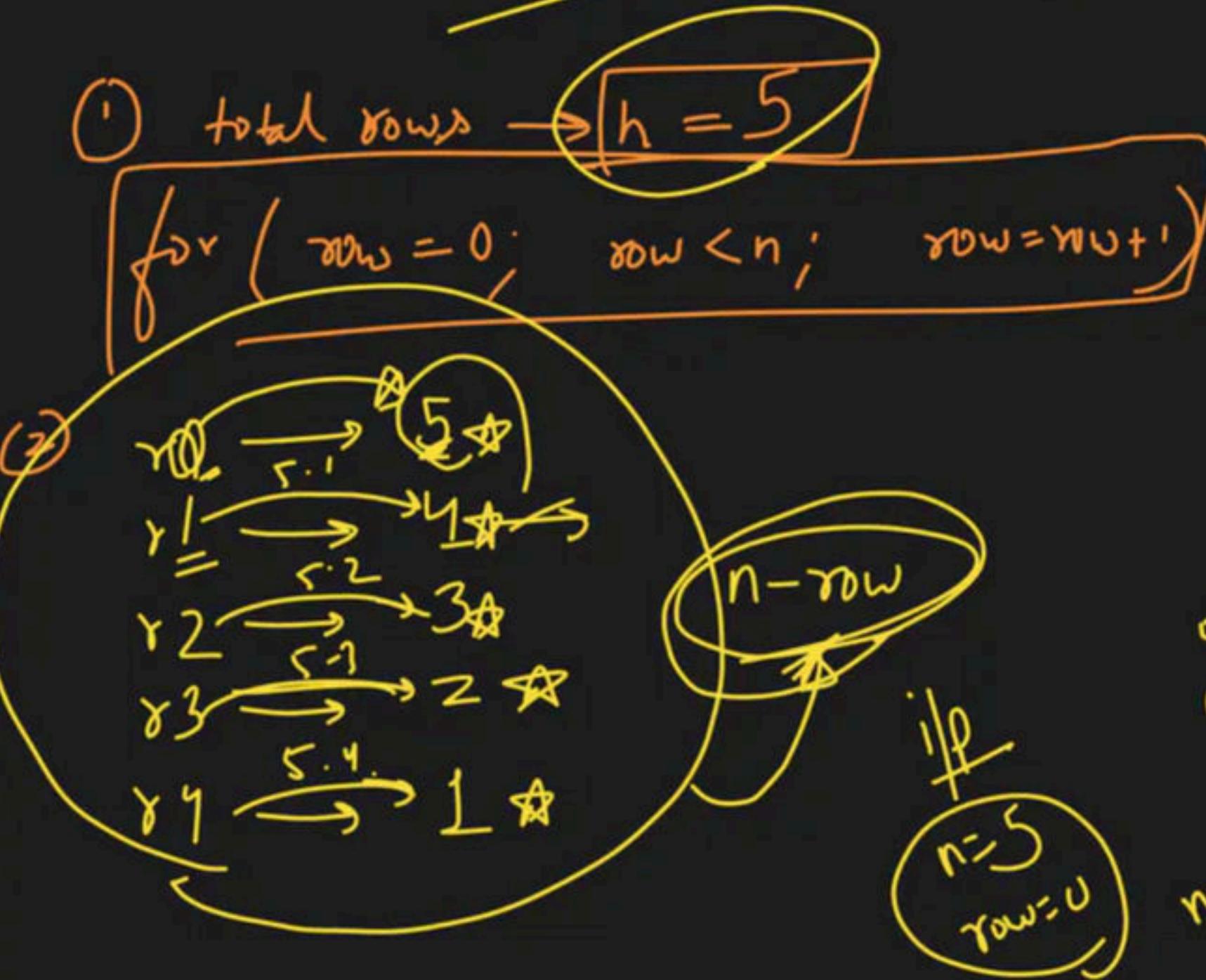
for (row = 0; row < 6; row++)

②
row → | ★
row → +1 → 2 ★ row + 1
row → +1 → 3 ★
row → +1 → 4 ★
row → +1 → 5 ★
row → +1 → 6 ★

row →	★					
row →						
row →	★	★	★			
row →						
row →	★	★	★	★		
row →						
row →	★	★	★	★	★	★
row →						

row →
row + i
+ 1 → stars

Inverted Half Pyramid:-



o/p

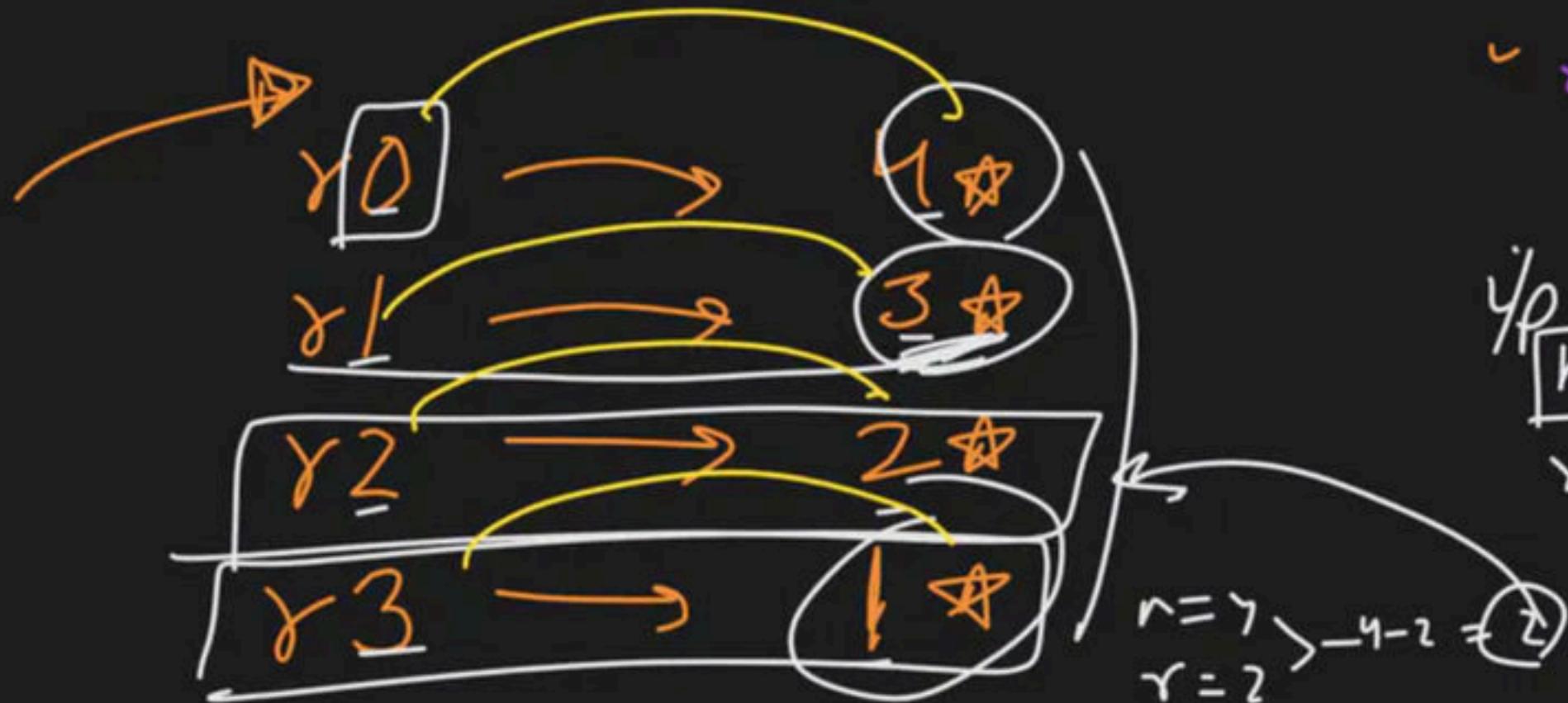
$$r = 4 > n + row = 4 + 1 = 5$$

γ_{row} | $\gamma - 1 \rightarrow 3$

Total rows = $n = 4$

Outer loop

```
for (row = 0; row < n; row = row + 1)
```



ψ

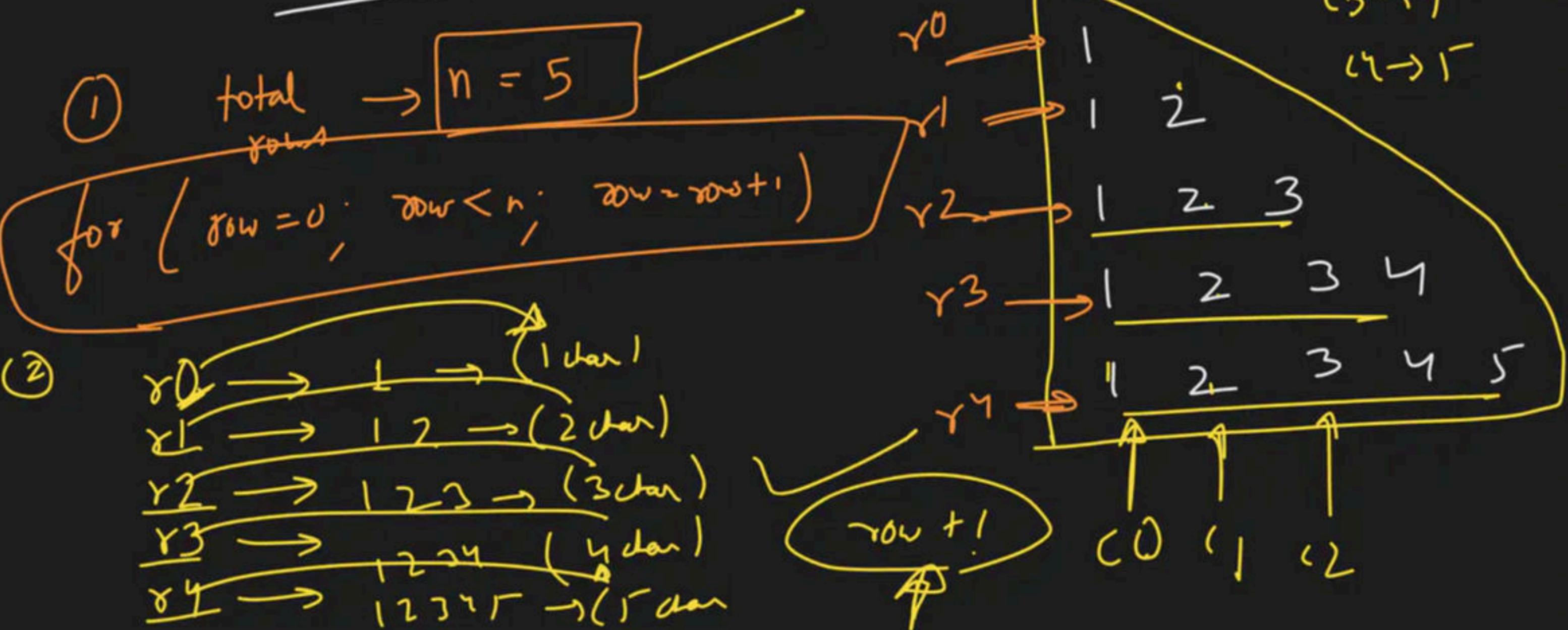
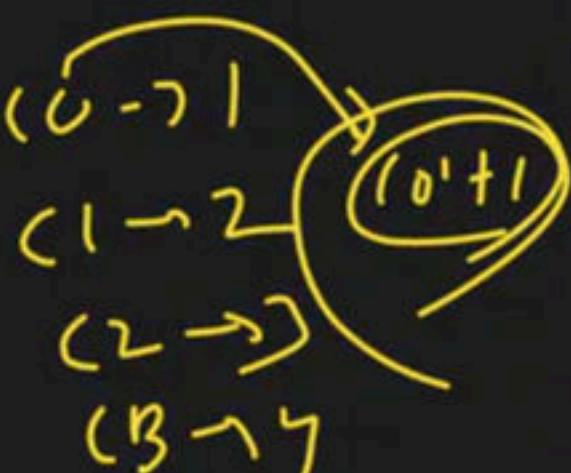
$n = 4$

$row = 0$

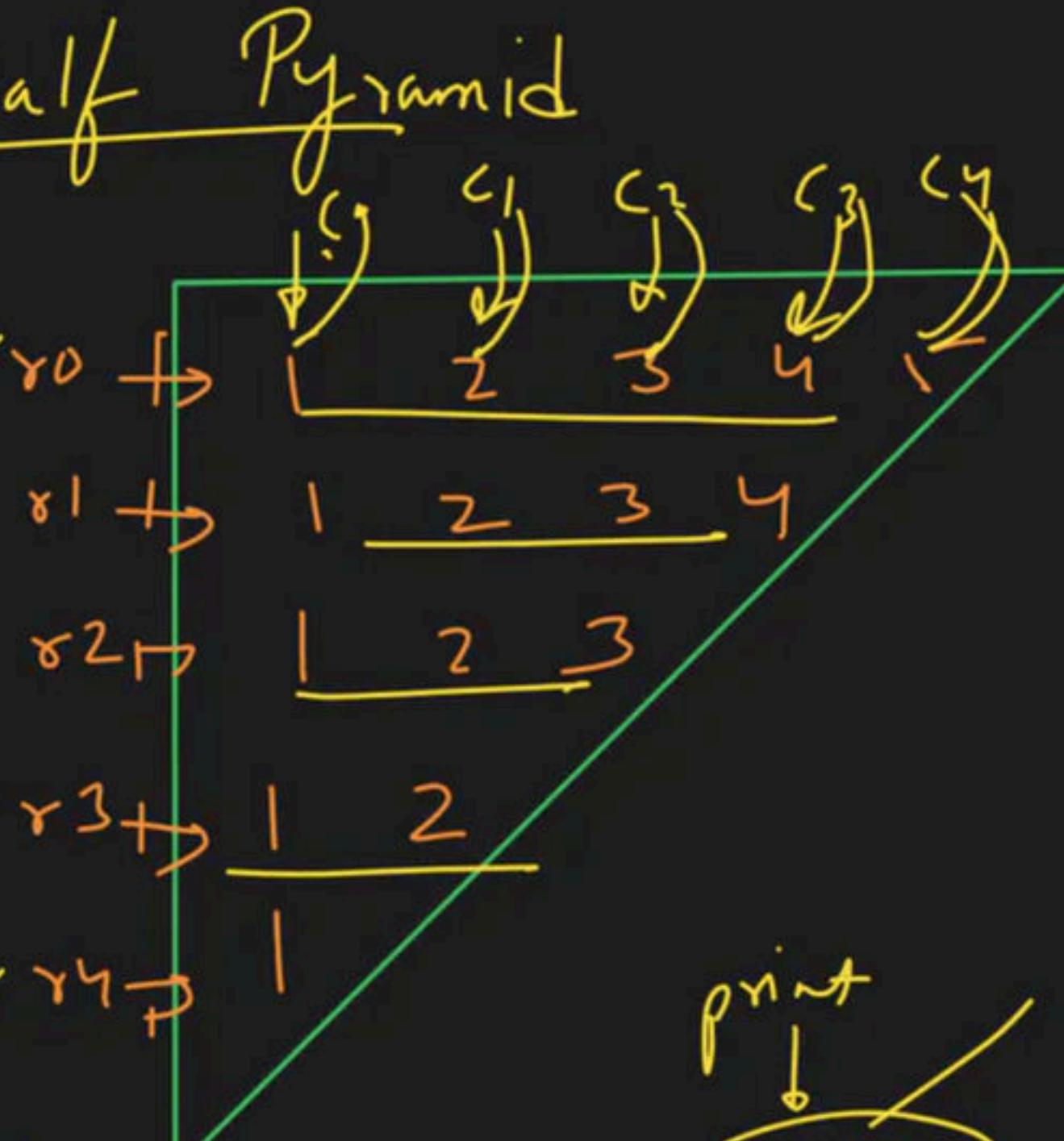
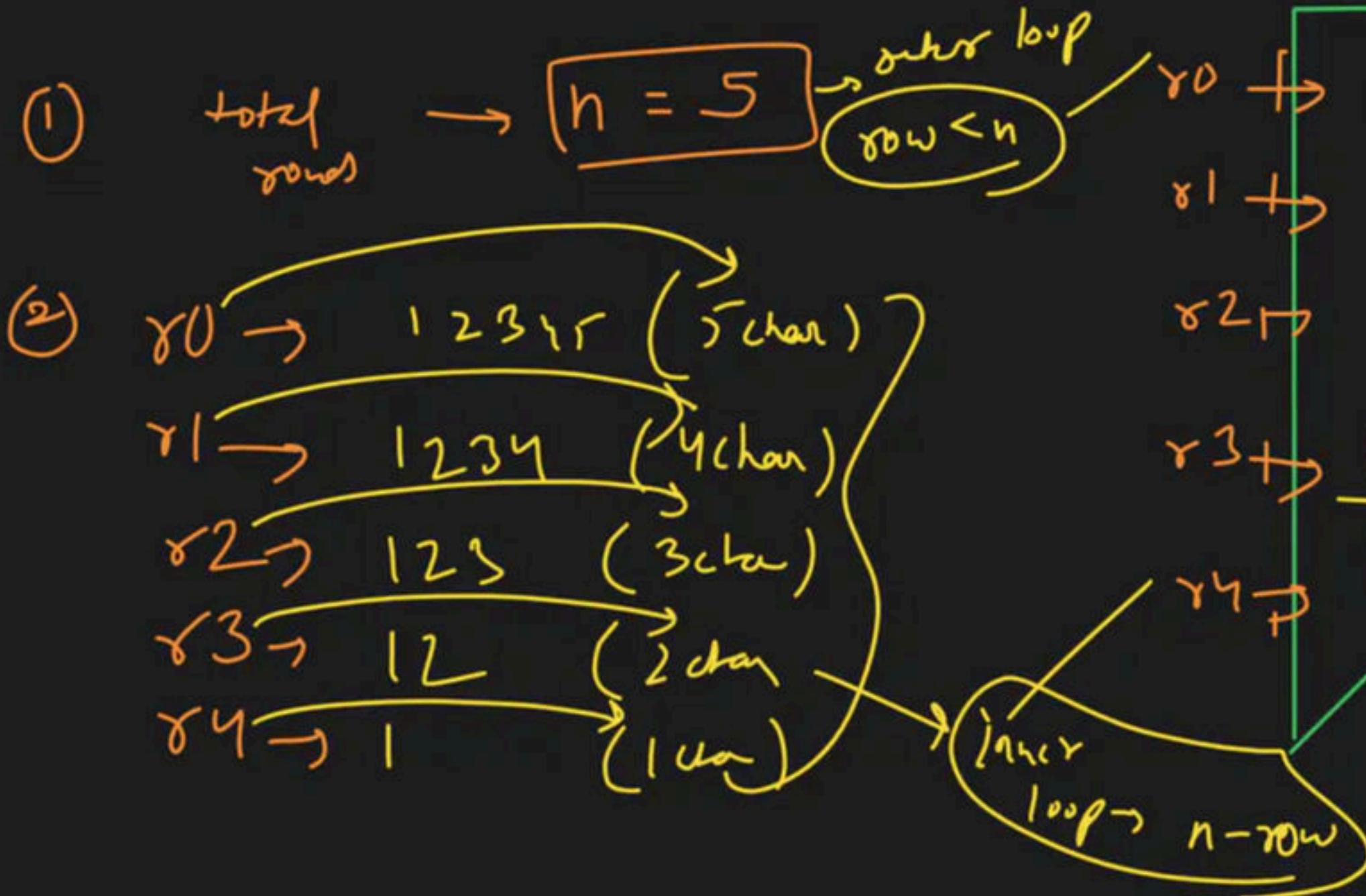
$n - row$

$4 - 0$

Numeric Half Pyramide



Inverted Numeric Half Pyramid



Diary

3 day

Ticketing System

catchup

fixing time

bottom right

click

Issue
Write down

Raise a ticket / Time



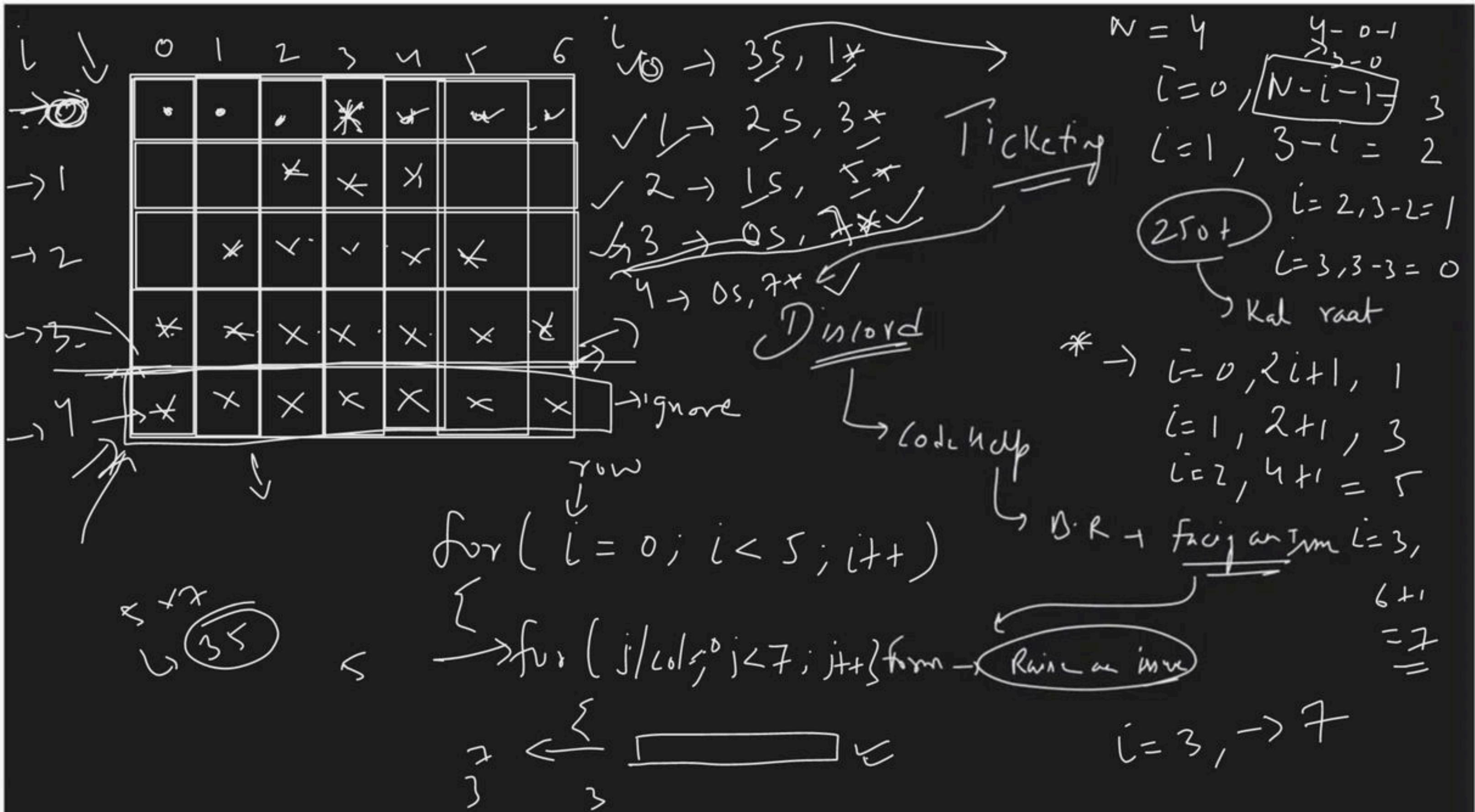
Review

Heavy

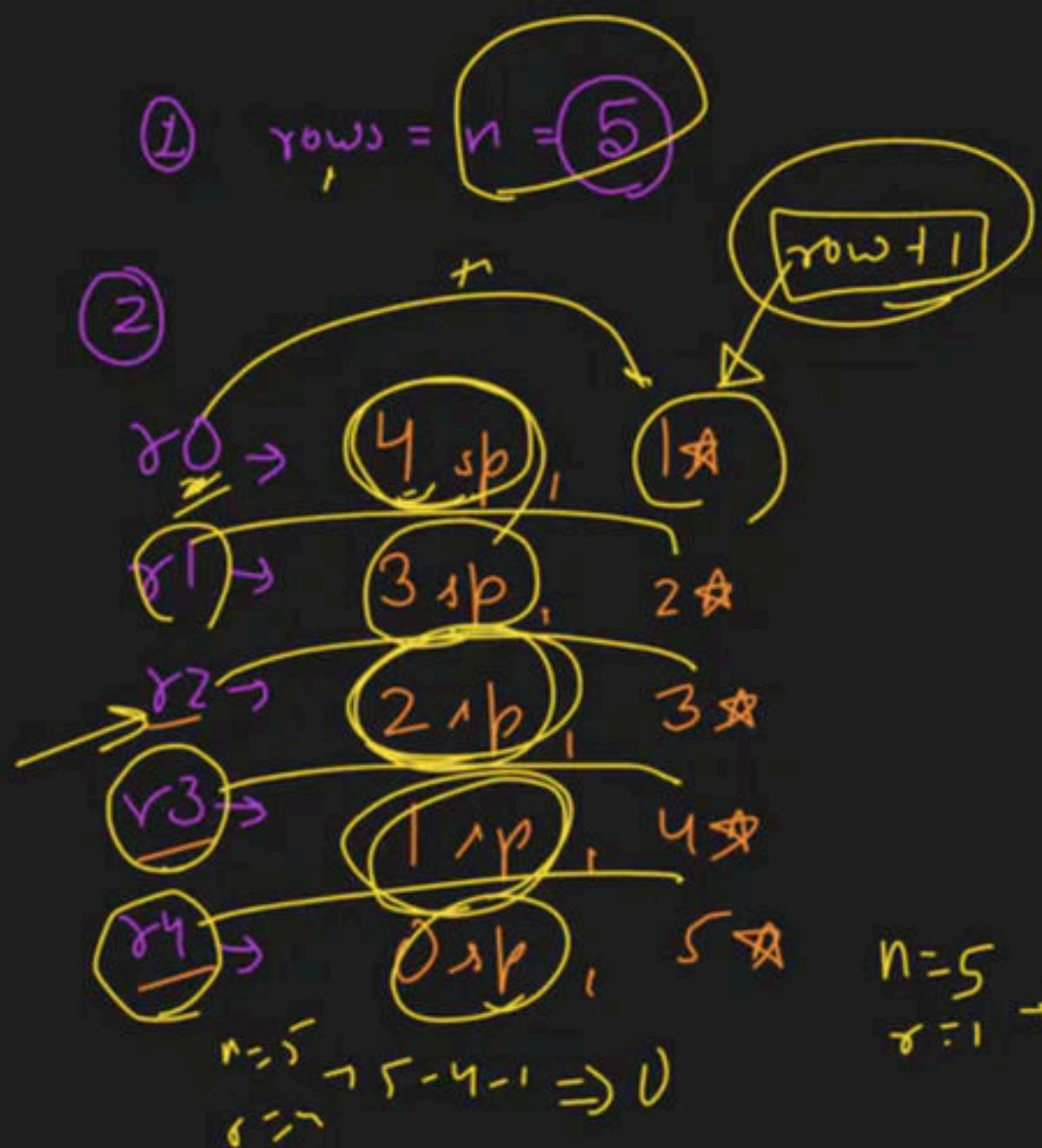
Pattern continues [Join here]

Special class

Love Babbar • Aug 31, 2023



\rightarrow Full Pyramid



$$n=r \rightarrow n-r-1 \rightarrow r-l-1 \rightarrow 2^{ab} \quad r=5 \rightarrow 5-3-1 = 1$$

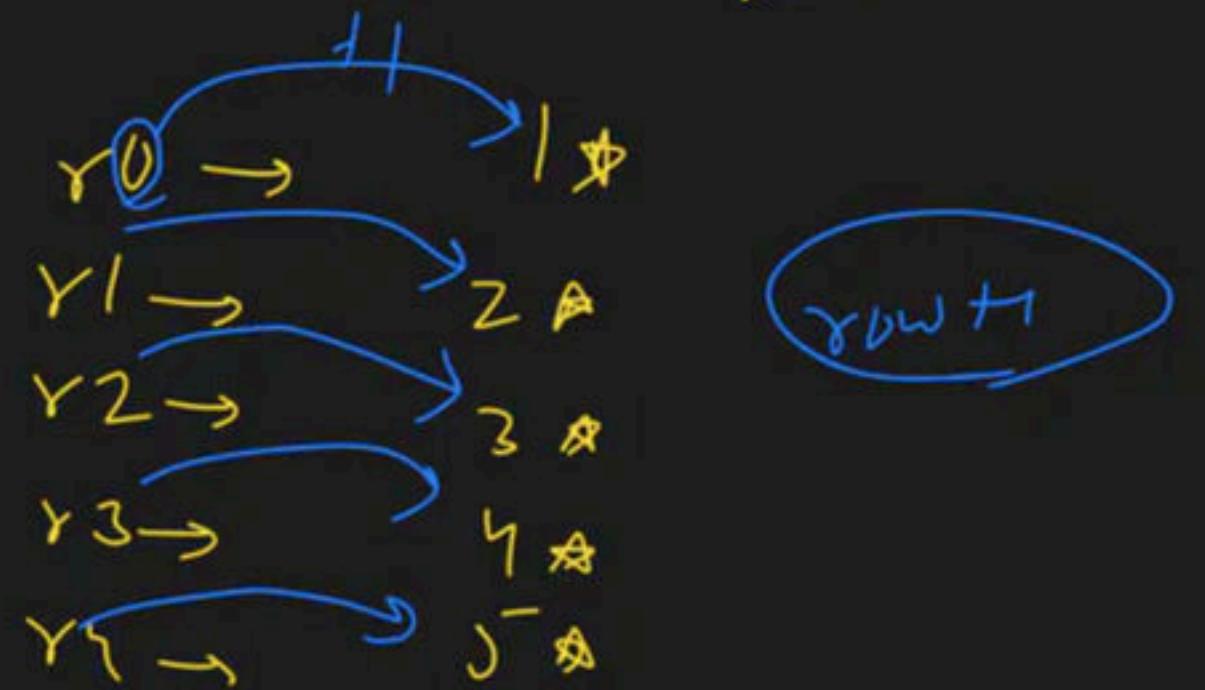
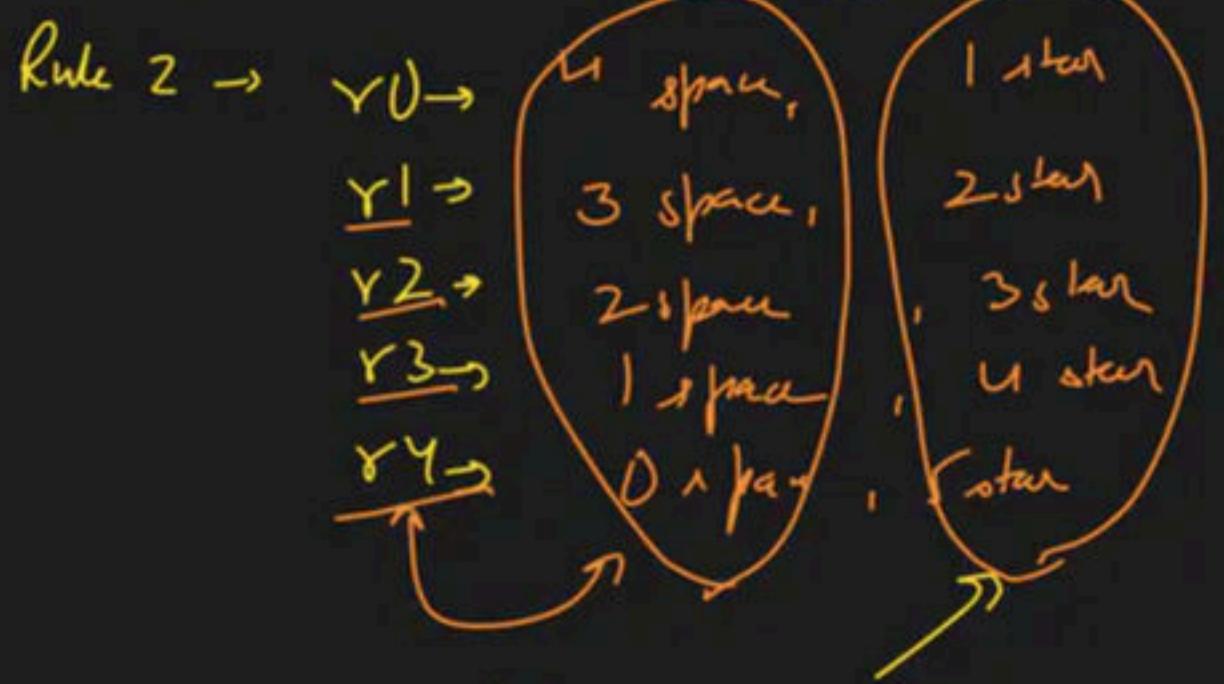


$n=5$
 $r=0$

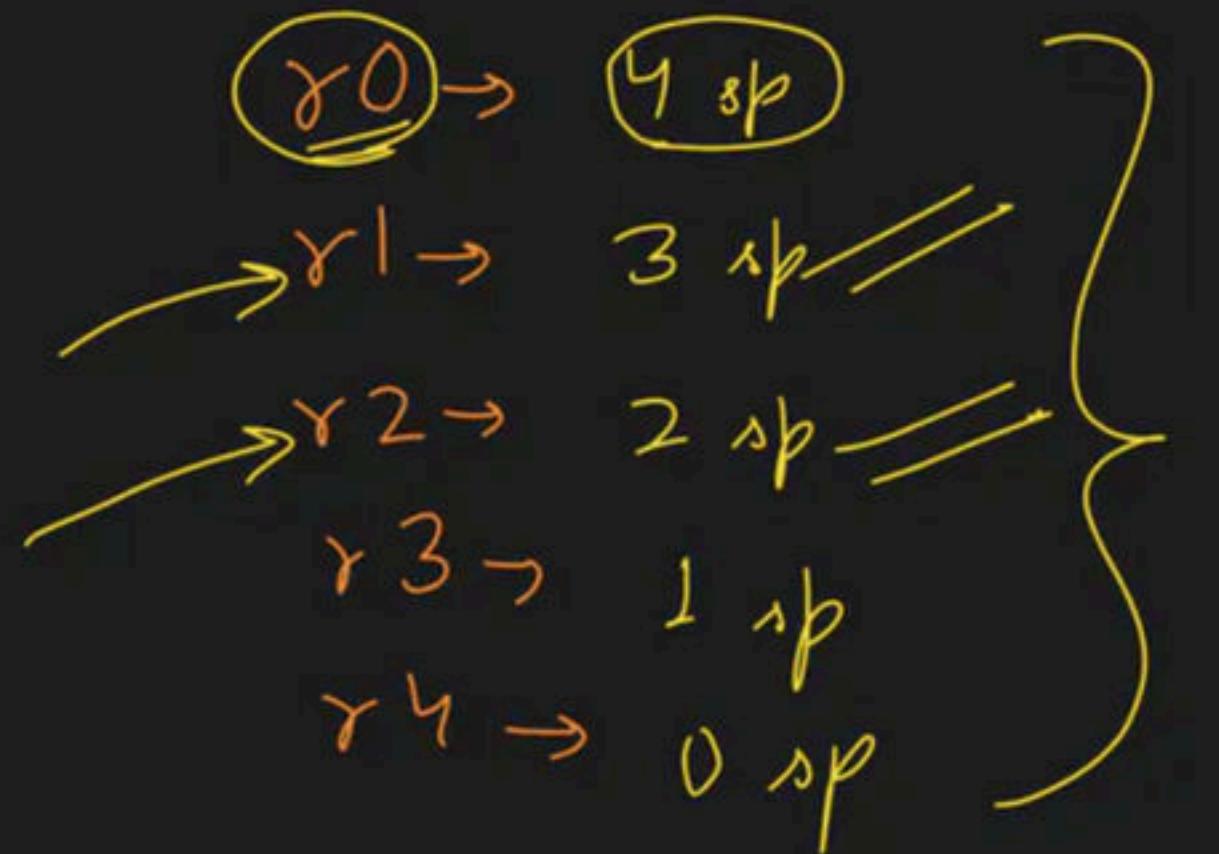
$5-0-1$

$n - \text{row} - 1$

Rule 1 \rightarrow Rows $n = 5$



Row \rightarrow space, stars



$$\begin{aligned}
 n=5 &\rightarrow n-\gamma-1 \\
 \gamma=1 &5-1-1 \\
 &= 3
 \end{aligned}$$

$$\begin{aligned}
 n=5 &\rightarrow n-\gamma-1 \\
 \gamma=2 &5-2-1 = 2
 \end{aligned}$$

$\frac{1}{\rho} \downarrow$
 $\left\{ \begin{array}{l} n=5 \\ \gamma=0 \end{array} \right.$

$n-\gamma = 5-0$
 $n-\gamma = 5$
 (-1)

$$n-\gamma-1 = 5-1$$

$$\boxed{n-\gamma-1} = 4$$

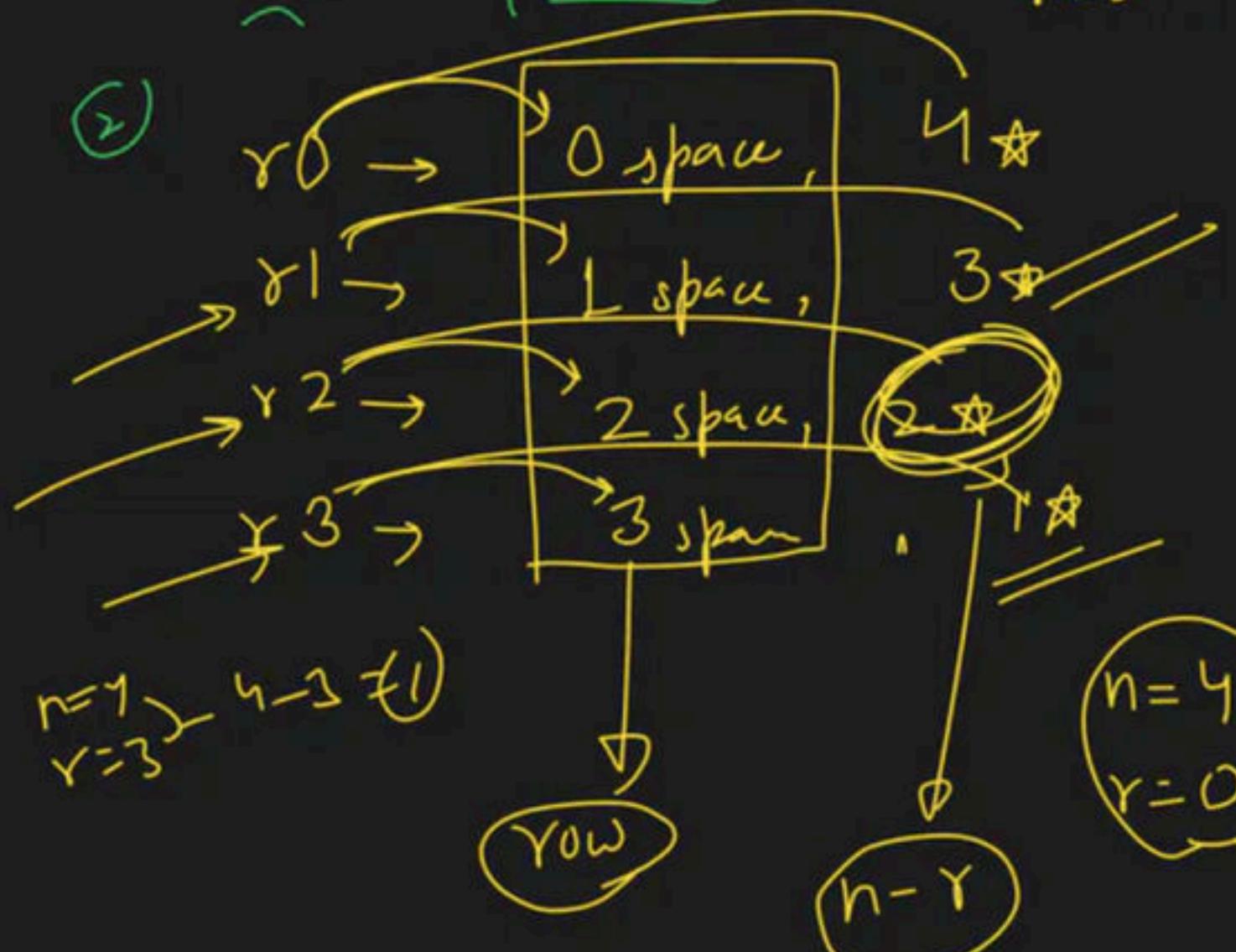
→

Inverts

$F \cdot \rho$

$$\textcircled{1} \quad Y_{\text{rows}} \Rightarrow n = 4$$

\textcircled{2}



$$n = 4 > n - 1 = \textcircled{3}$$

$$Y = 1$$

$$n = 4 \rightarrow n - 2 = \textcircled{2}$$

$$Y = 2$$

Y₀ →

Y₁ →

Y₂ →

Y₃ →



Y → skip
row

0/ρ

1

$$n - Y = 4 - 0 = \textcircled{4}$$



$$3 \times 3 \rightarrow 6$$

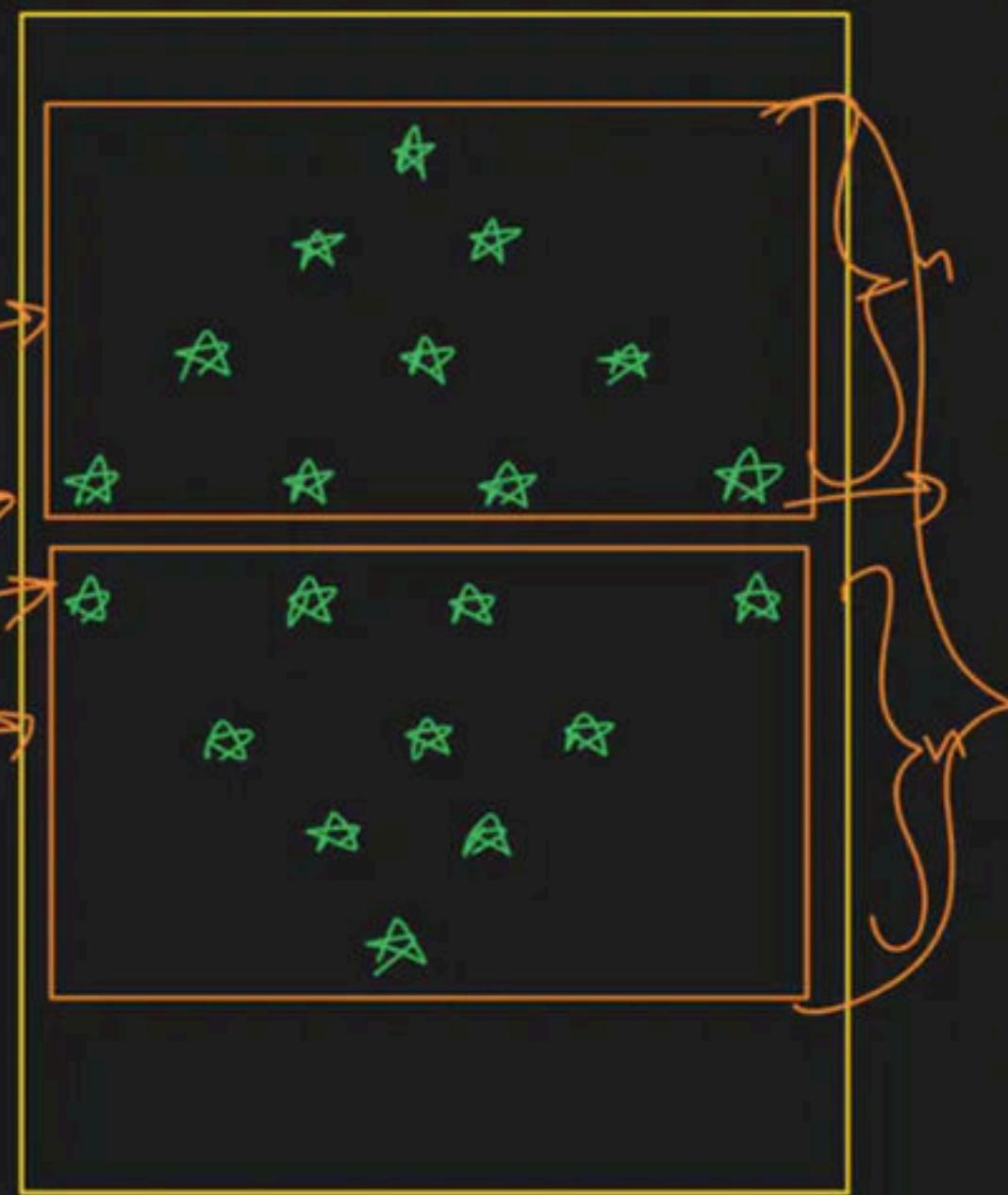
$$4 \times 4 \rightarrow 8$$

$$\begin{array}{c} n \times n \rightarrow 2n \\ \downarrow \\ \text{SOP} \end{array}$$

~~Even~~

$$n \times n \rightarrow 2n$$

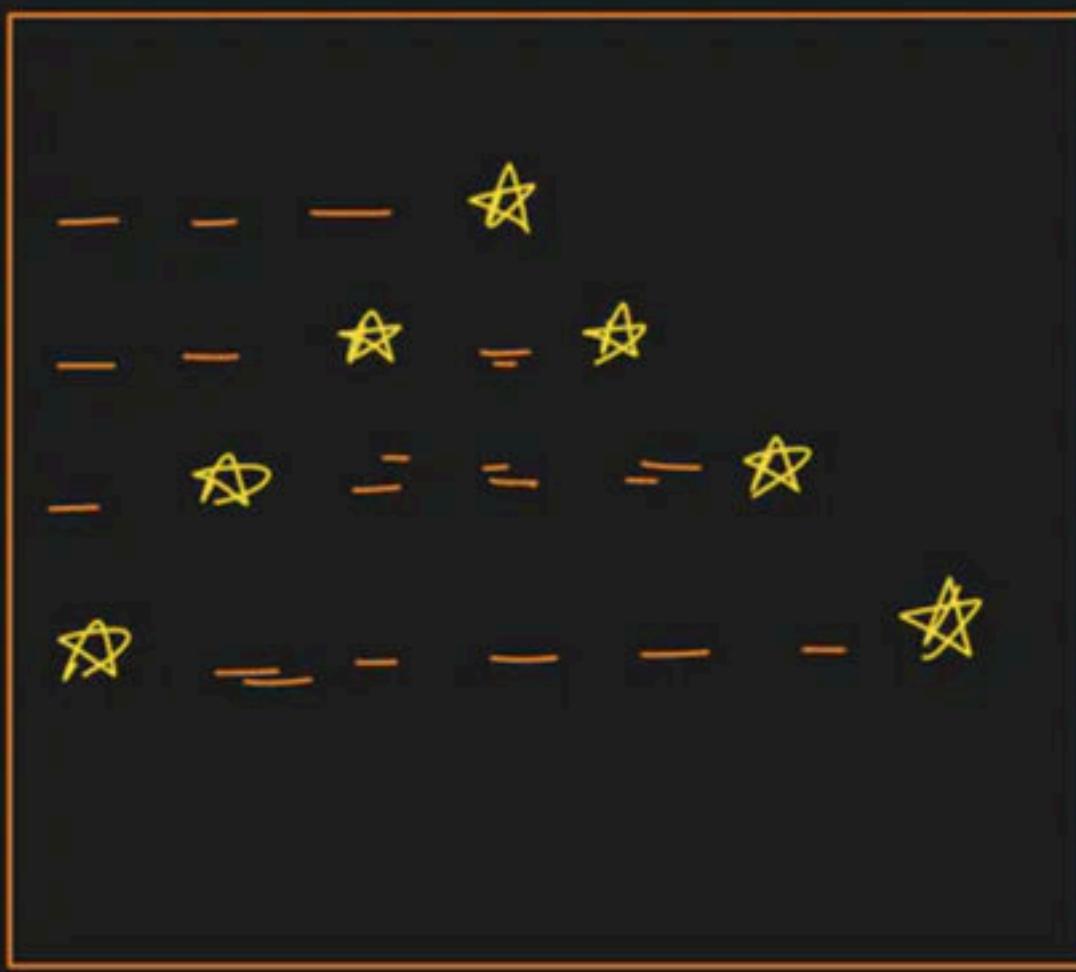
Diam. ~



Hollow
Pyramid

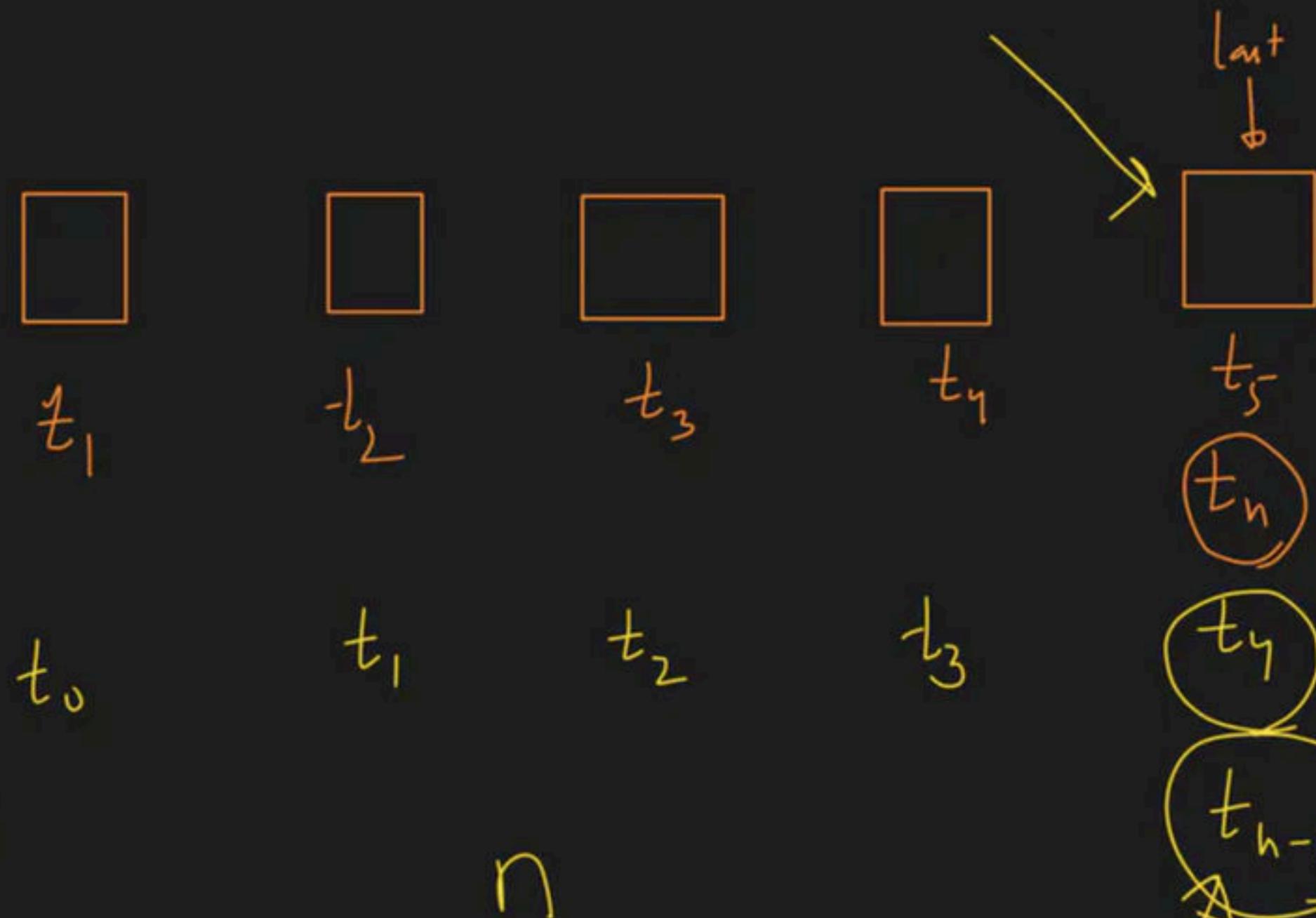


♪



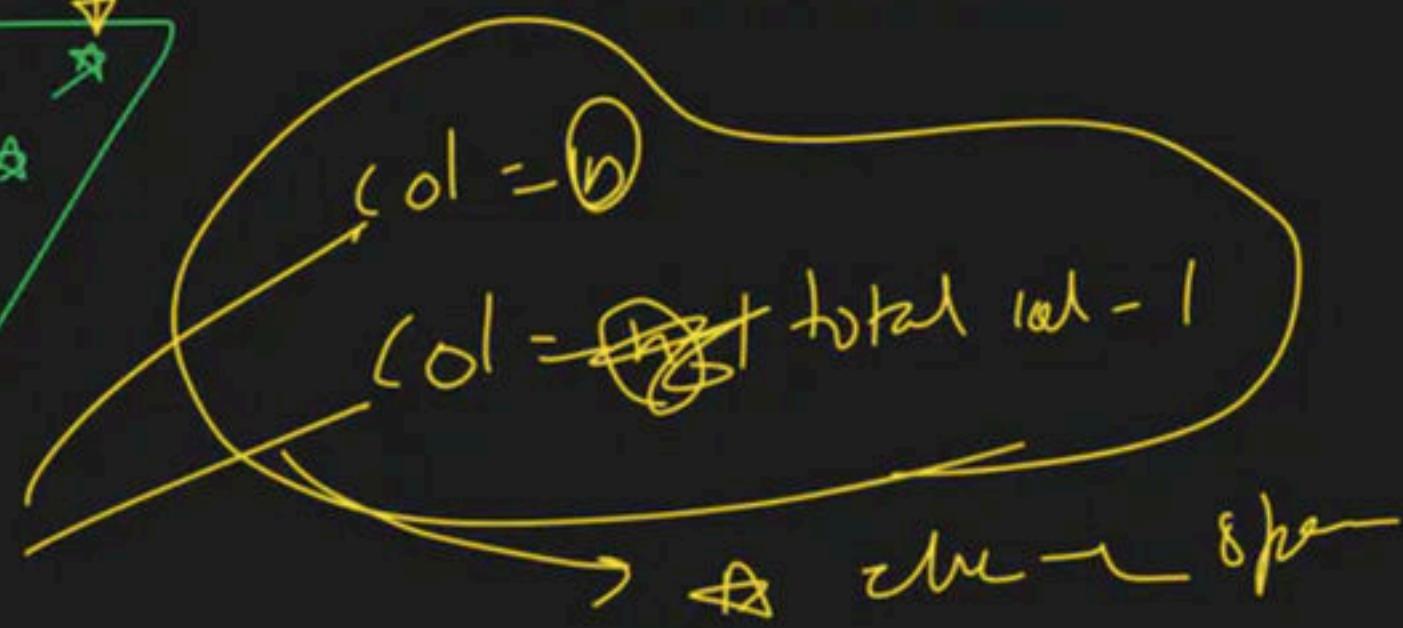
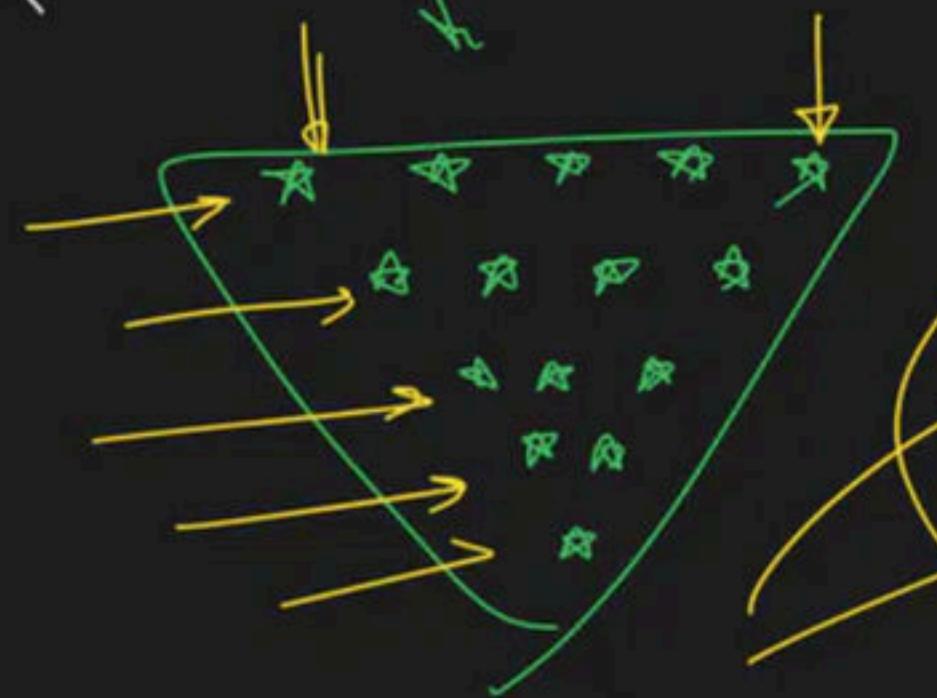
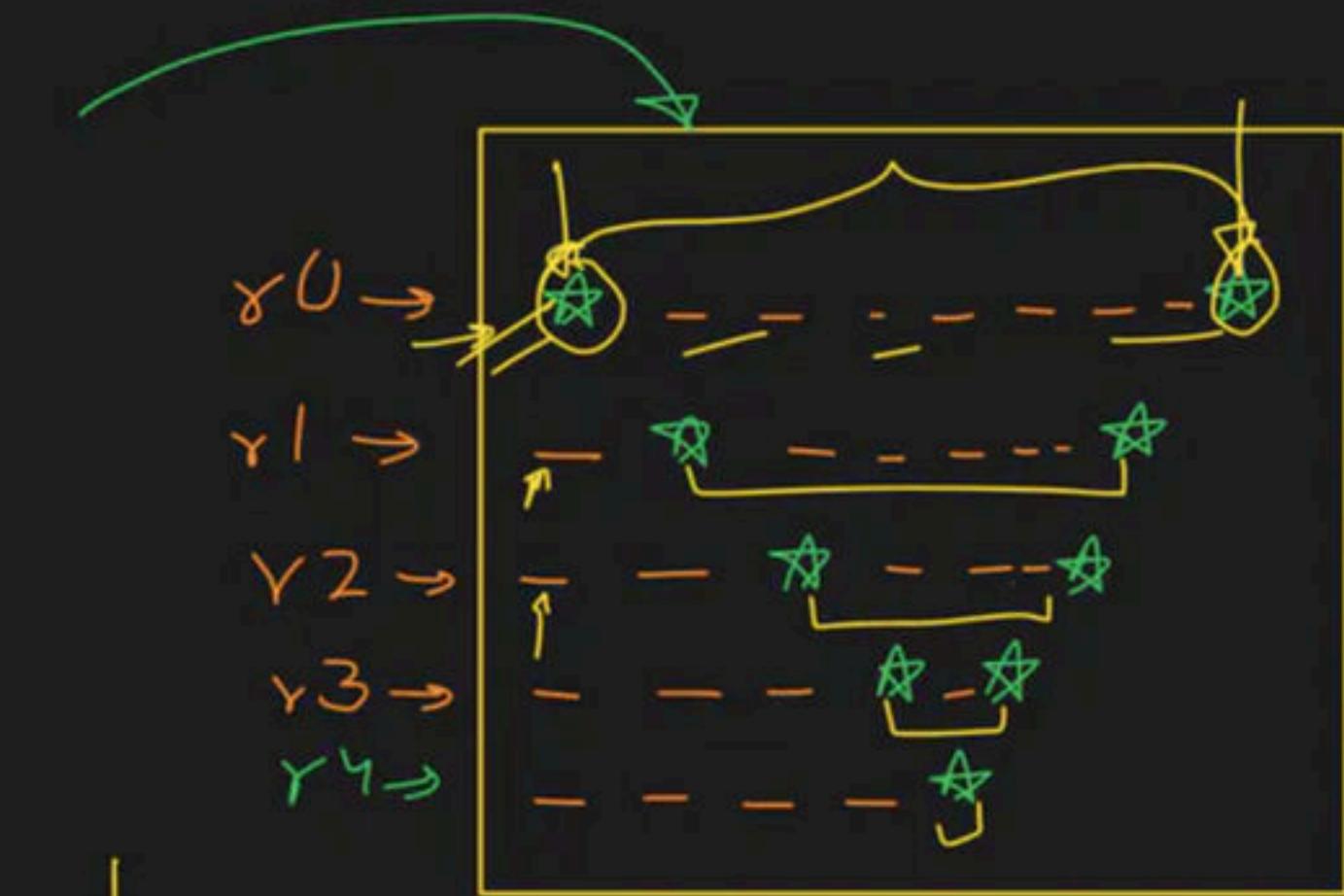
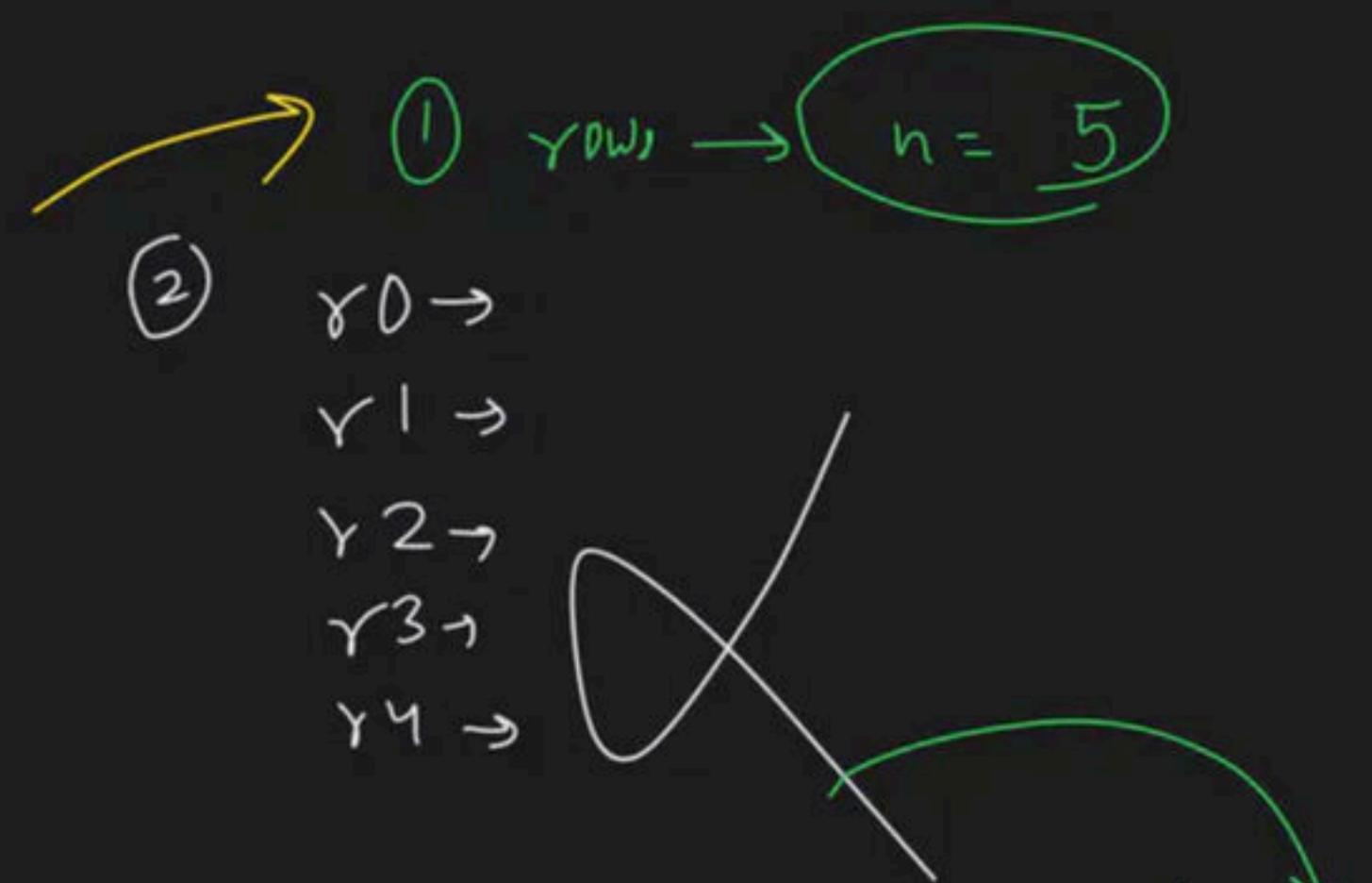
*T-band
numbering*

*D-band
numbering*



S to place

$n=r$



(row + 1)

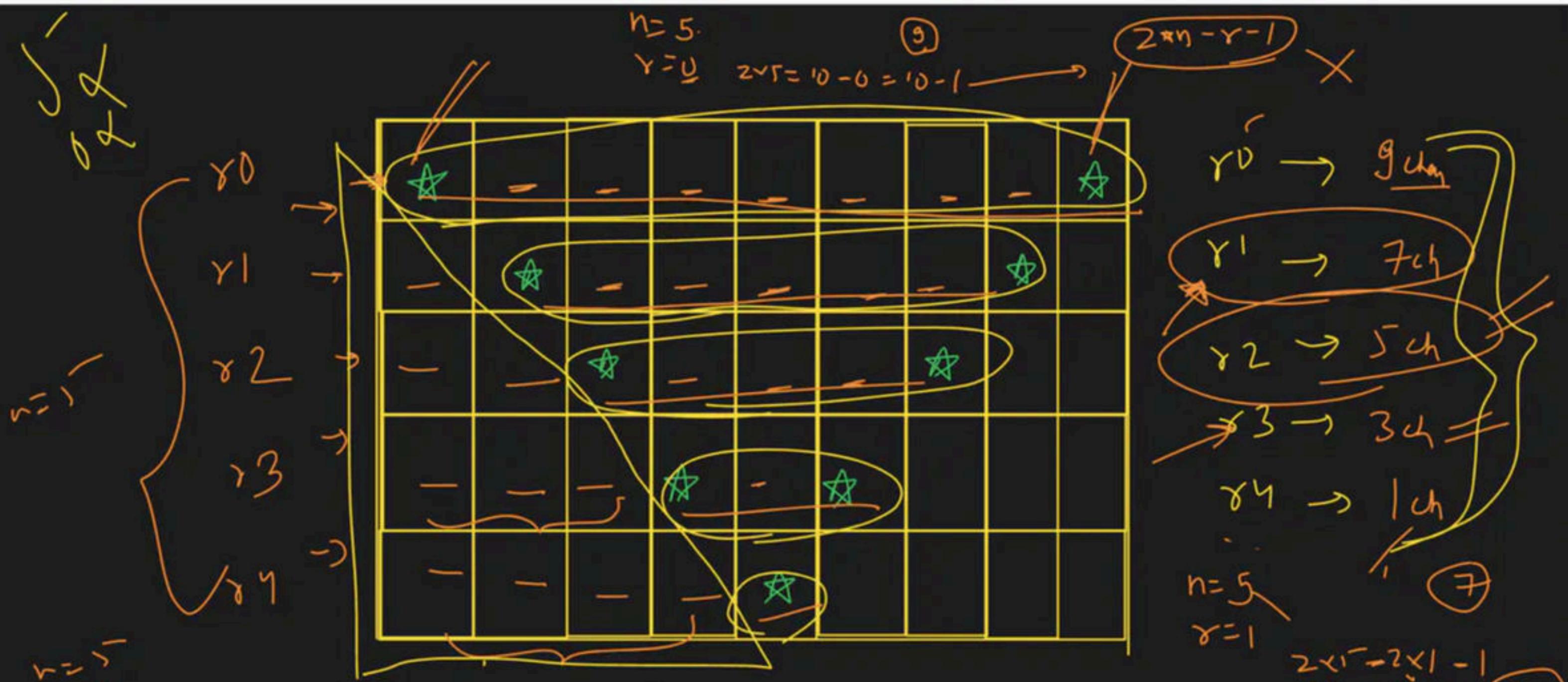
columns

ant



(row + 1) - 1

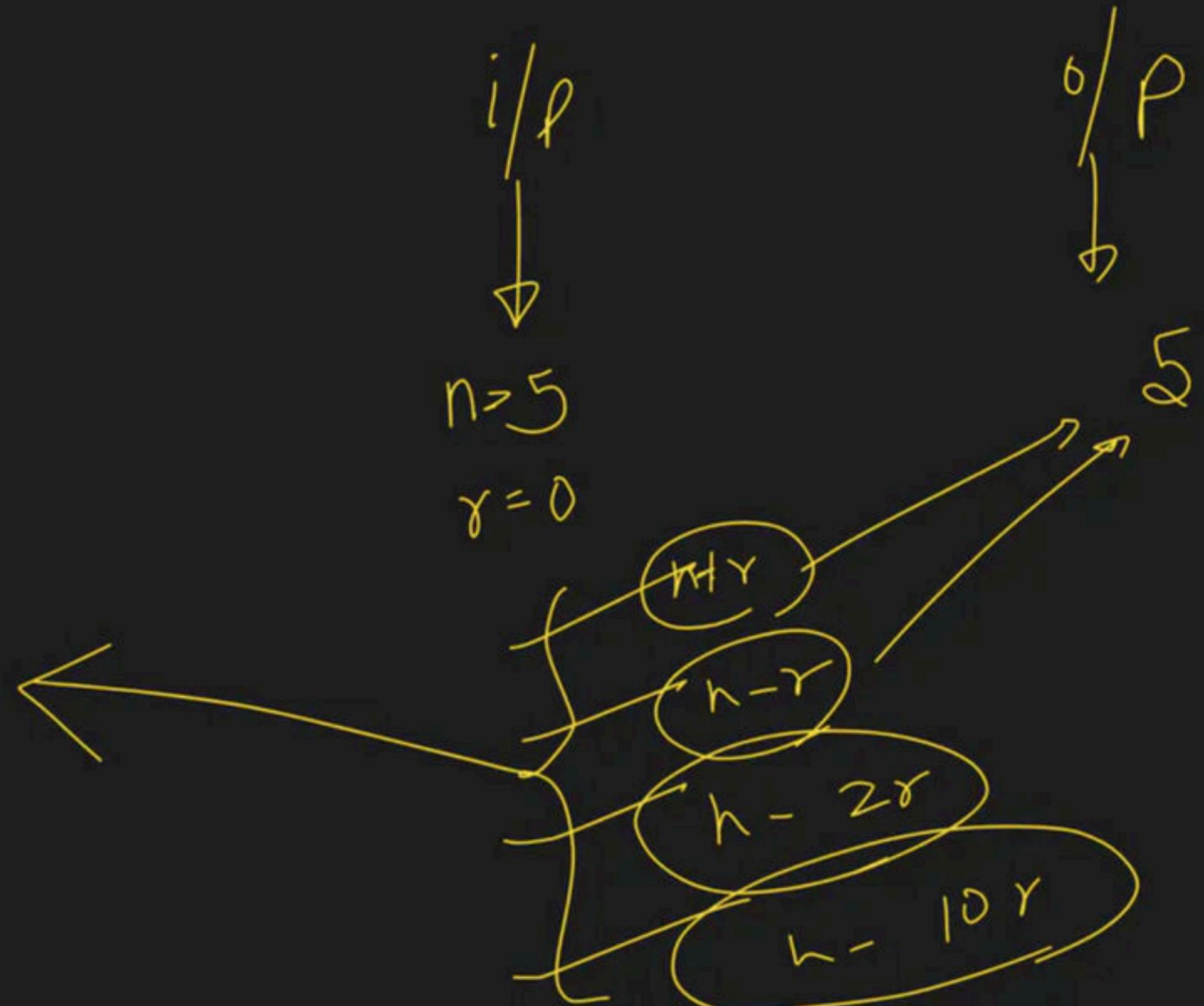
row + 1 - 1
row

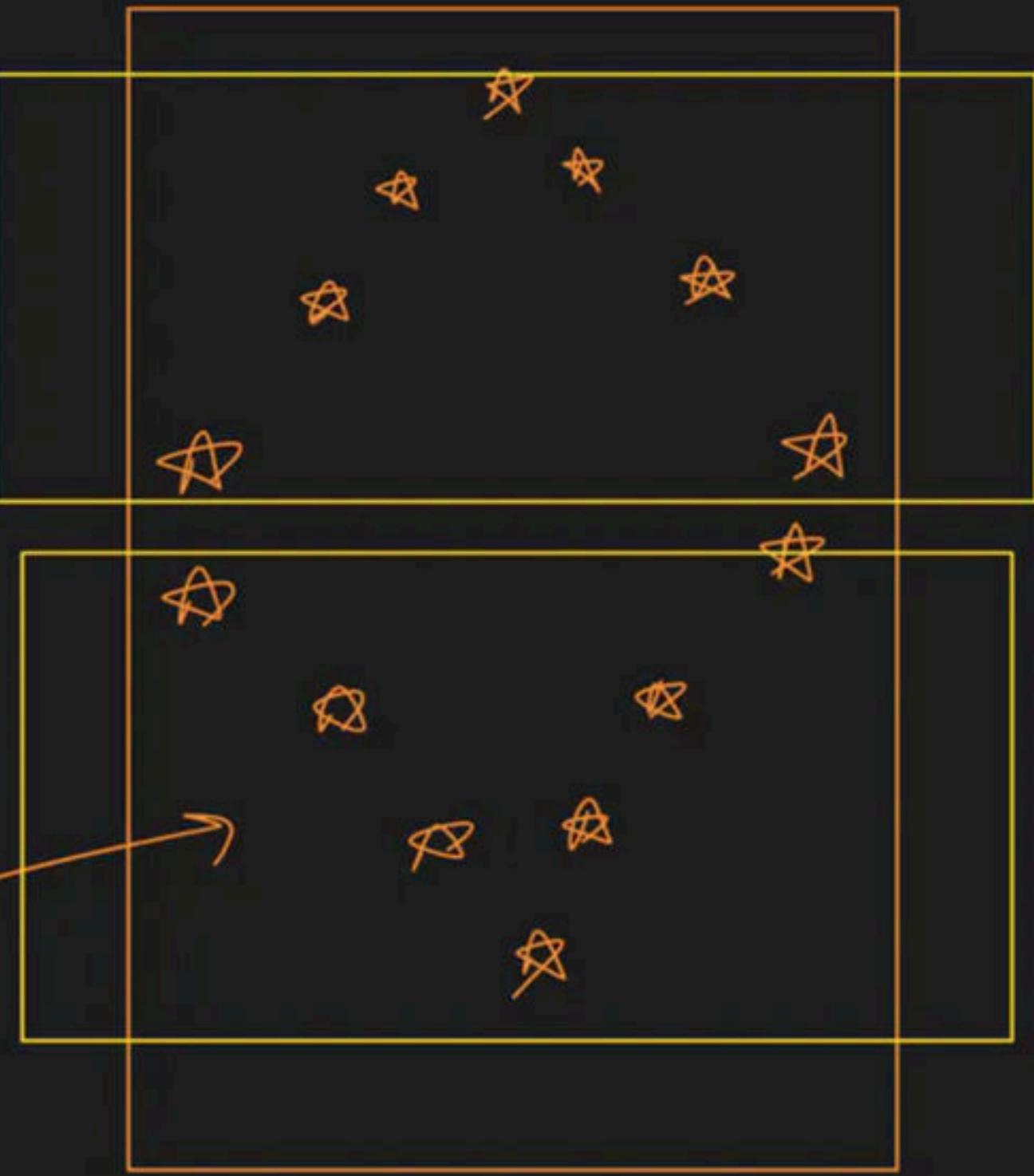
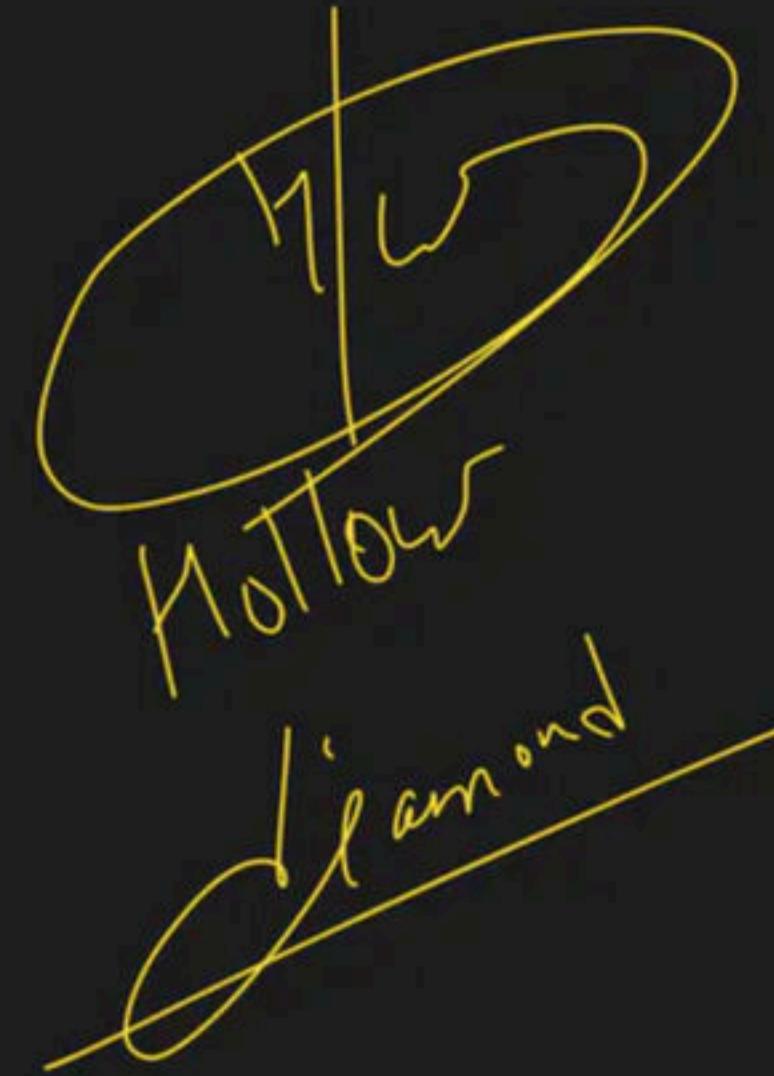


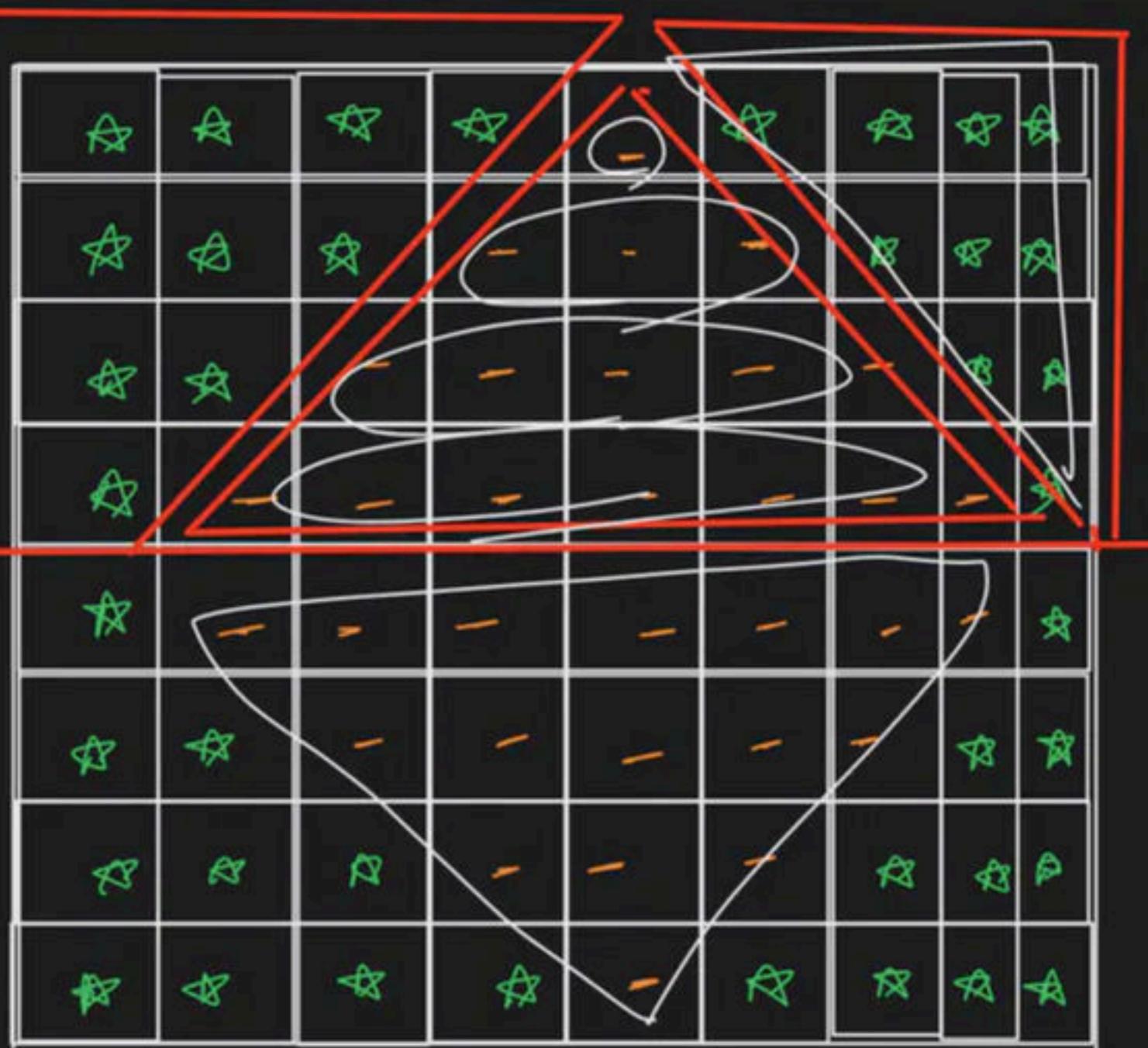
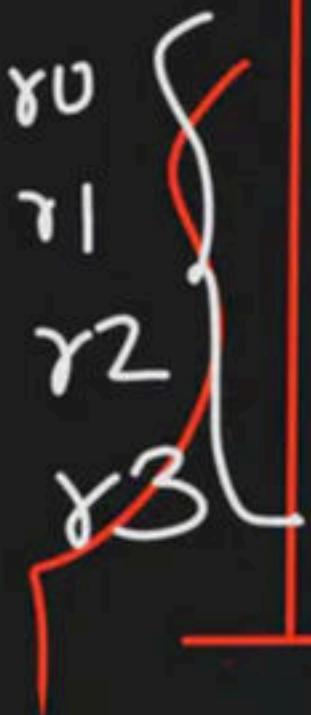
$$\frac{2 \times 5 - 2 \times 3 - 1}{10 - 6 - 1} = 3$$

$n=0$
 $\text{col} < \text{row}$
 $(\text{col} = \text{row} + 1)$
 $<<$

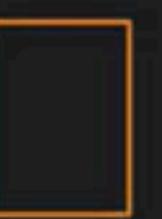
$n=5$
 $\gamma=5$
 $zeta=10-0=10-1$ (circled 9)
 $2\gamma - \gamma - 1$ (circled 10)
 $\gamma_0 \rightarrow 9 \text{ ch}$
 $\gamma_1 \rightarrow 7 \text{ ch}$
 $\gamma_2 \rightarrow 5 \text{ ch}$
 $\gamma_3 \rightarrow 3 \text{ ch}$
 $\gamma_4 \rightarrow 1 \text{ ch}$
 $n=5$
 $\gamma=1$ (circled 7)
 $2 \times 5 - 2 \times 2 - 1$
 $10 - 4 - 1 = 5$
 $2 \times 5 - 2 \times 3 - 1$
 $= 10 - 6 - 1 = 3$
 $n=0$
 $\text{col} < \text{row}$
 $(\text{col} = \text{row} + 1)$
 $<<$







$\Sigma \phi^k x^l$

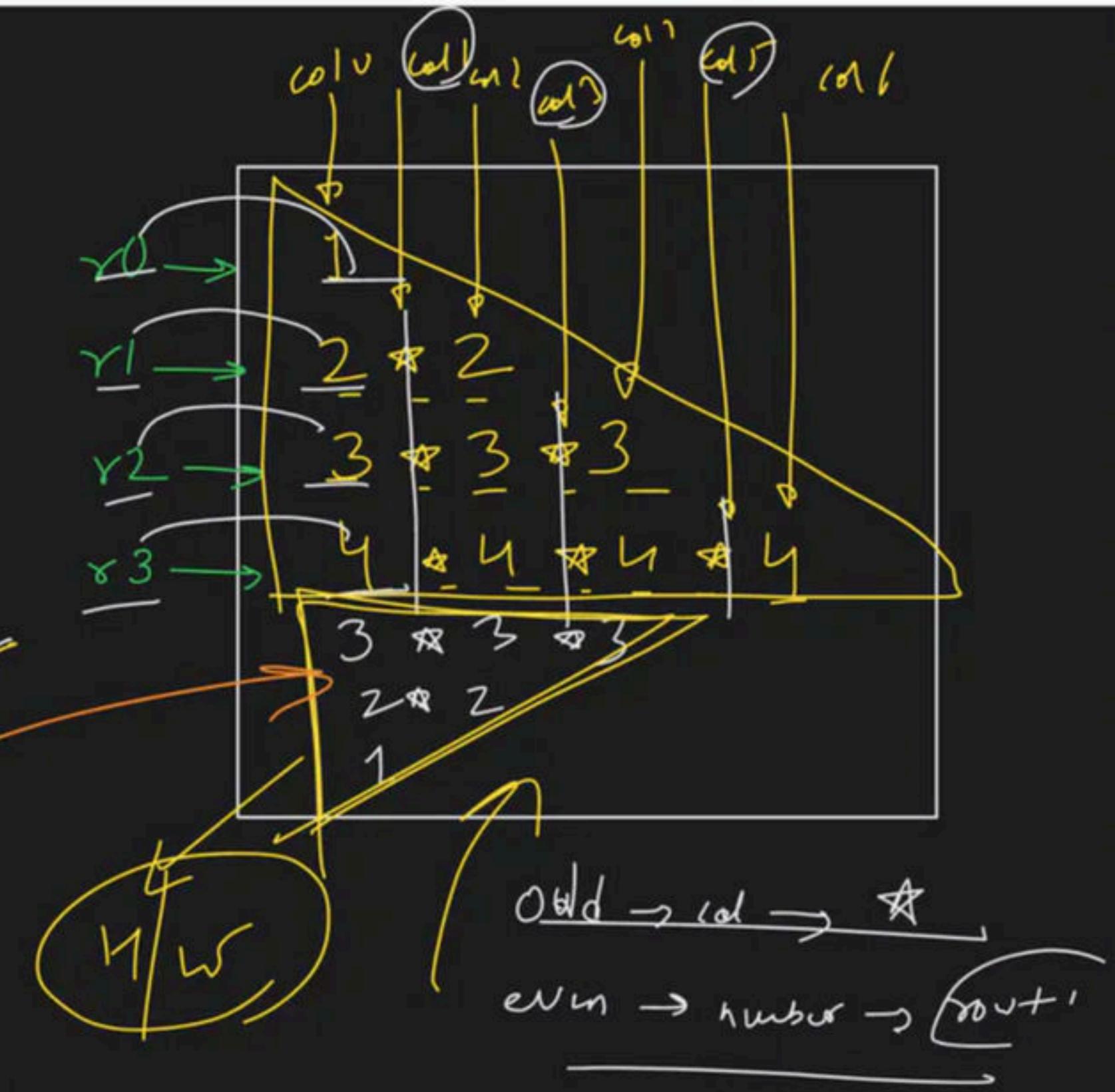
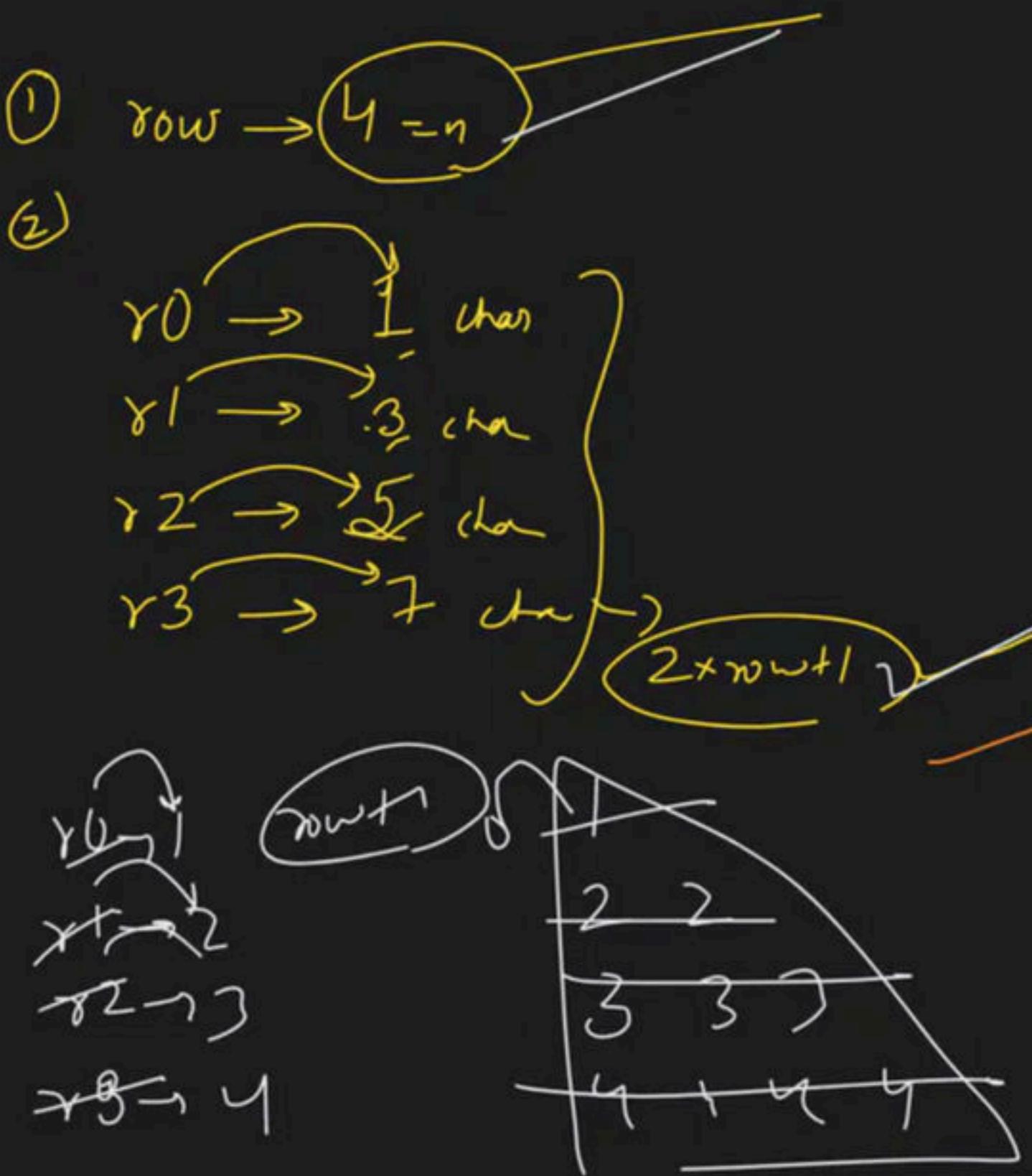




doubts

TA's

doubt ~~pm~~



```

    for (int row = 0; row < n; row = row + 1)
    {
        for (int col = 0; col < 2 * row + 1; col = col + 1)
        {
            if ((col + 1) % 2 == 1)
                cout << "X";
            else
                cout << row + 1;
        }
        cout << endl;
    }

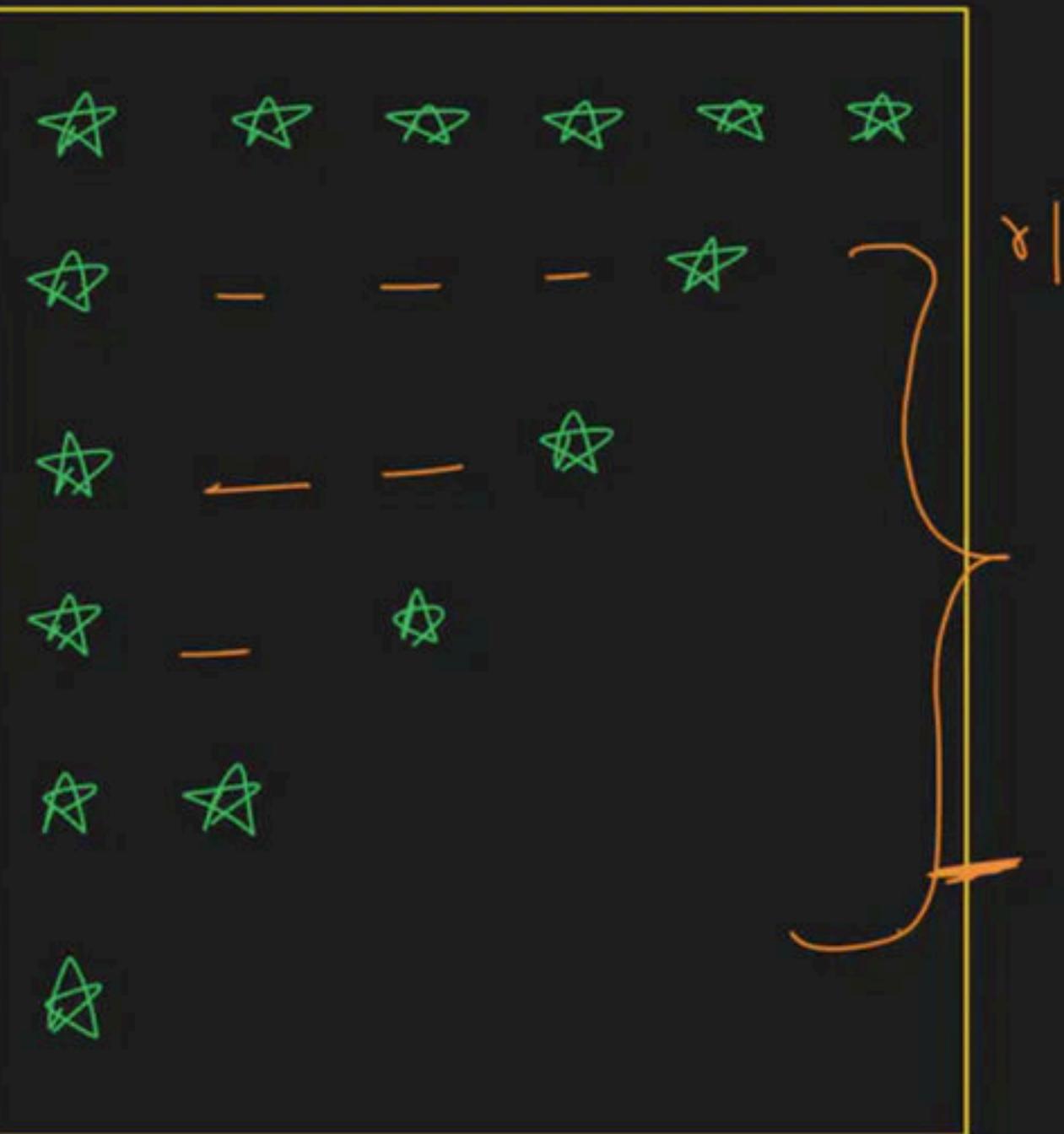
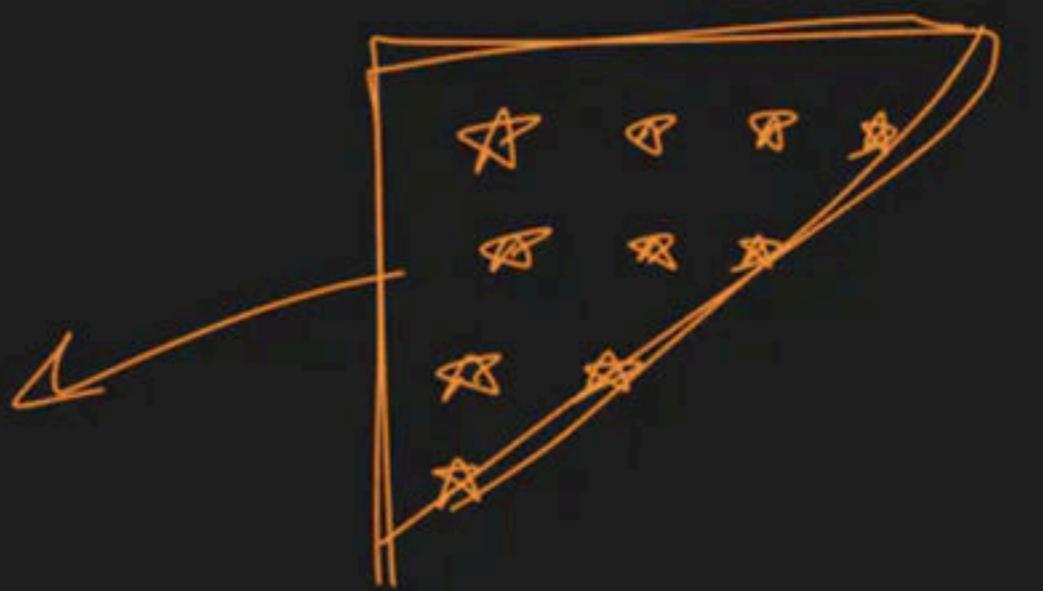
```

Diagram illustrating the execution flow:

- Row 1:** $n = 3$. The condition $row < n$ is true. The inner loop starts with $col = 0$.
- Iteration 1:** $col = 0$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "X".
- Iteration 2:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "1".
- Iteration 3:** $col = 2$. The condition $col < 2 \cdot row + 1$ is false. The inner loop body prints "2".
- Row 2:** The condition $row < n$ is true. The inner loop starts with $col = 0$.
- Iteration 1:** $col = 0$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "X".
- Iteration 2:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "2".
- Iteration 3:** $col = 2$. The condition $col < 2 \cdot row + 1$ is false. The inner loop body prints "3".
- Row 3:** The condition $row < n$ is false. The outer loop exits.

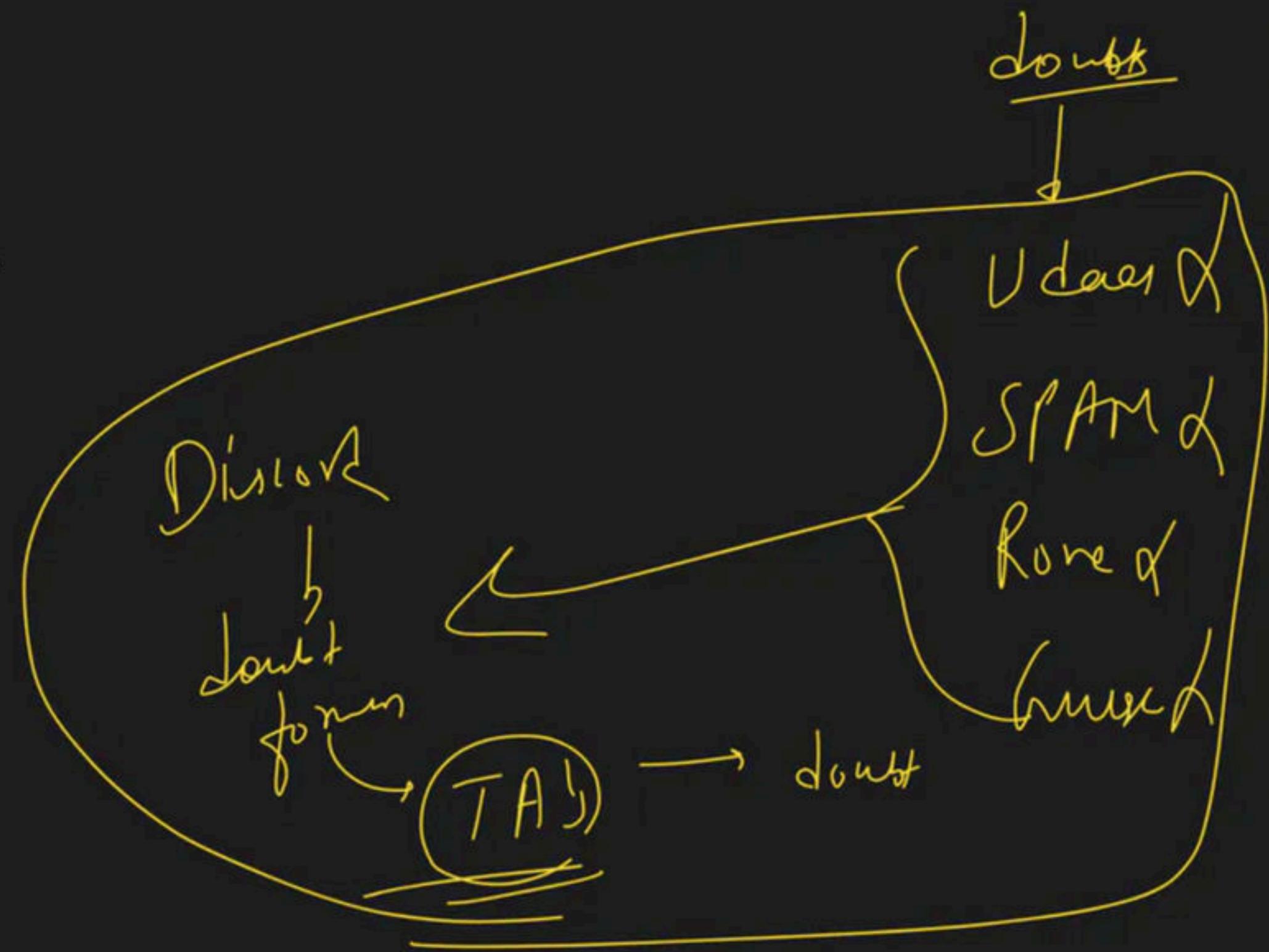
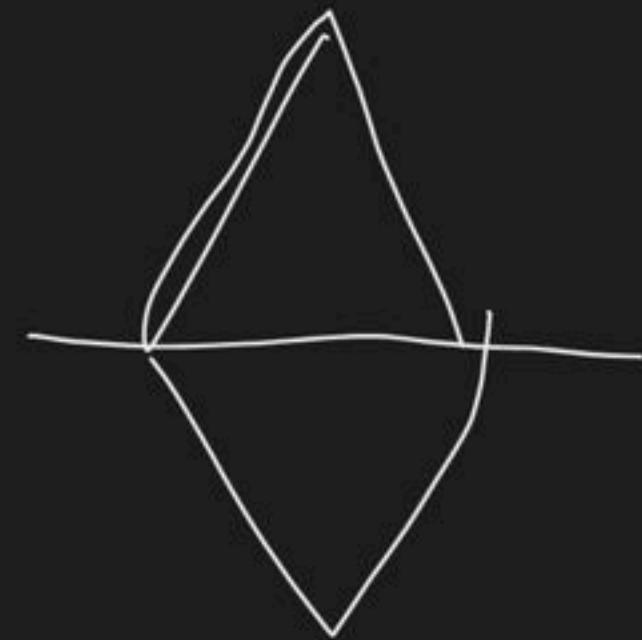
Diagram illustrating the execution flow:

- Row 1:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "1".
- Iteration 2:** $col = 2$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "2".
- Iteration 3:** $col = 3$. The condition $col < 2 \cdot row + 1$ is false. The inner loop body prints "3".
- Row 2:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "1".
- Iteration 3:** $col = 2$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "2".
- Row 3:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "1".
- Iteration 4:** $col = 2$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "2".
- Iteration 5:** $col = 3$. The condition $col < 2 \cdot row + 1$ is false. The inner loop body prints "3".
- Row 4:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "1".
- Iteration 6:** $col = 2$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "2".
- Iteration 7:** $col = 3$. The condition $col < 2 \cdot row + 1$ is false. The inner loop body prints "3".
- Row 5:** $col = 1$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "1".
- Iteration 8:** $col = 2$. The condition $col < 2 \cdot row + 1$ is true. The inner loop body prints "2".
- Iteration 9:** $col = 3$. The condition $col < 2 \cdot row + 1$ is false. The inner loop body prints "3".



$\gamma^0 \rightarrow$							
γ^1		-	-	-	-		
γ^2		-	-				
γ^3		-					
γ^4							
γ^5^-							

$\gamma^0 // \gamma^5^-$
 no 1 par
 link above



11/05

20 min

✓✓✓✓

1 - 2
1 - - 3
1 - - - 4
1 2 3 4 5

$y \mapsto c$

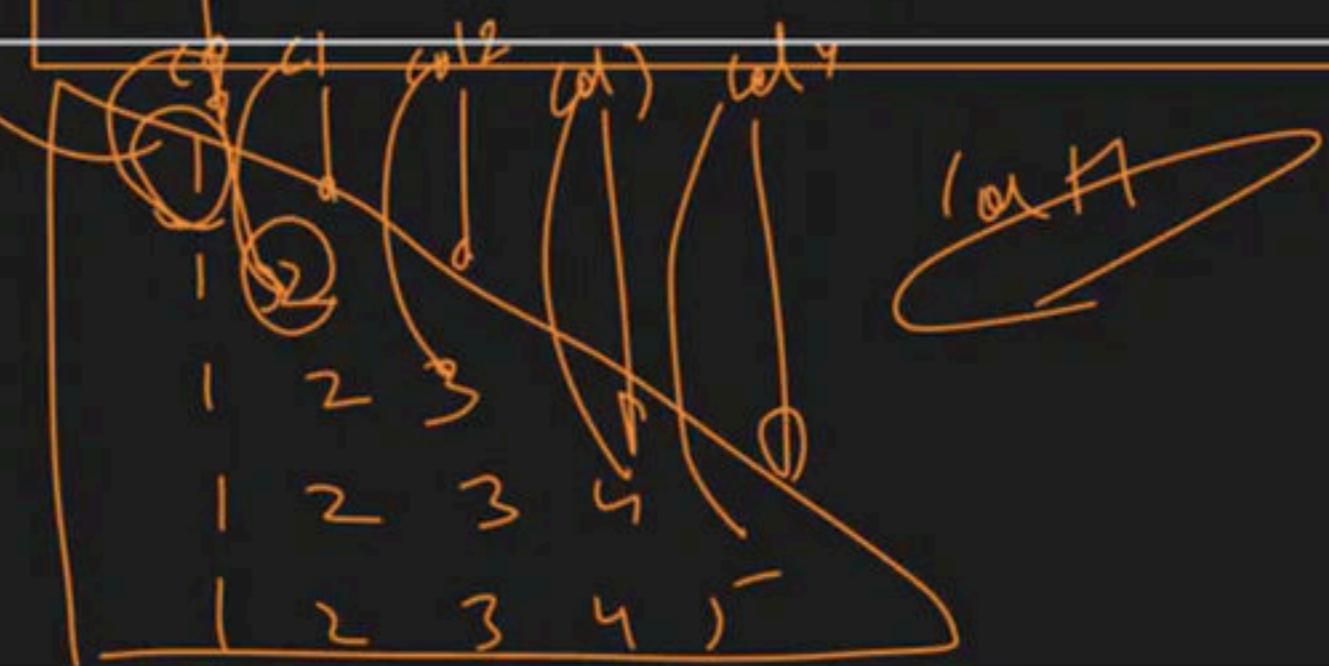
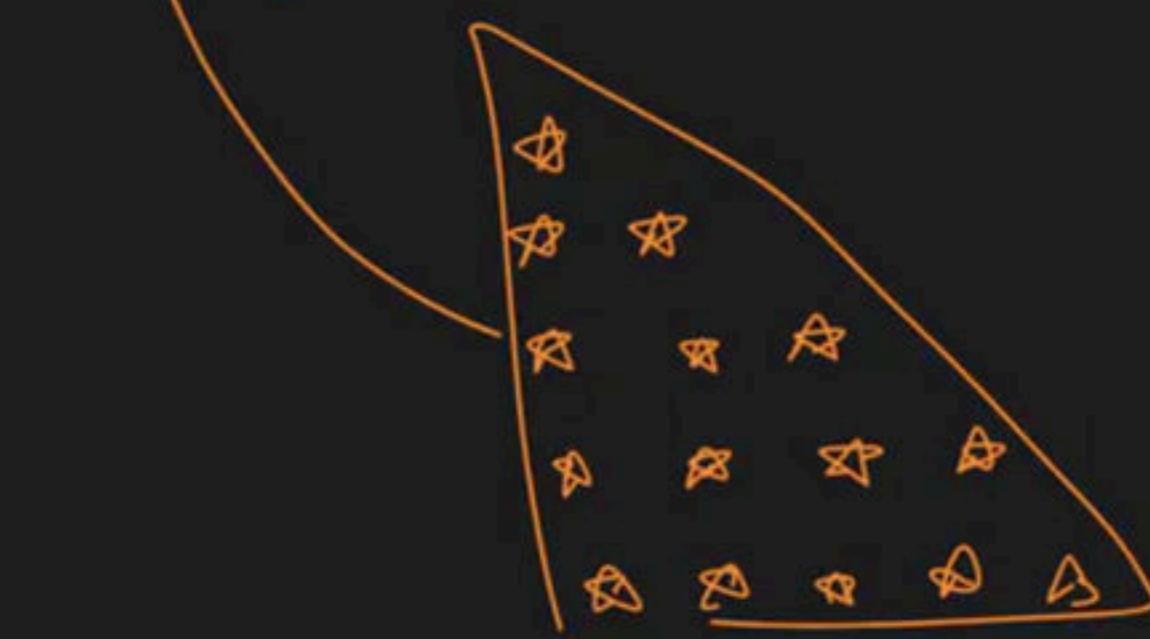
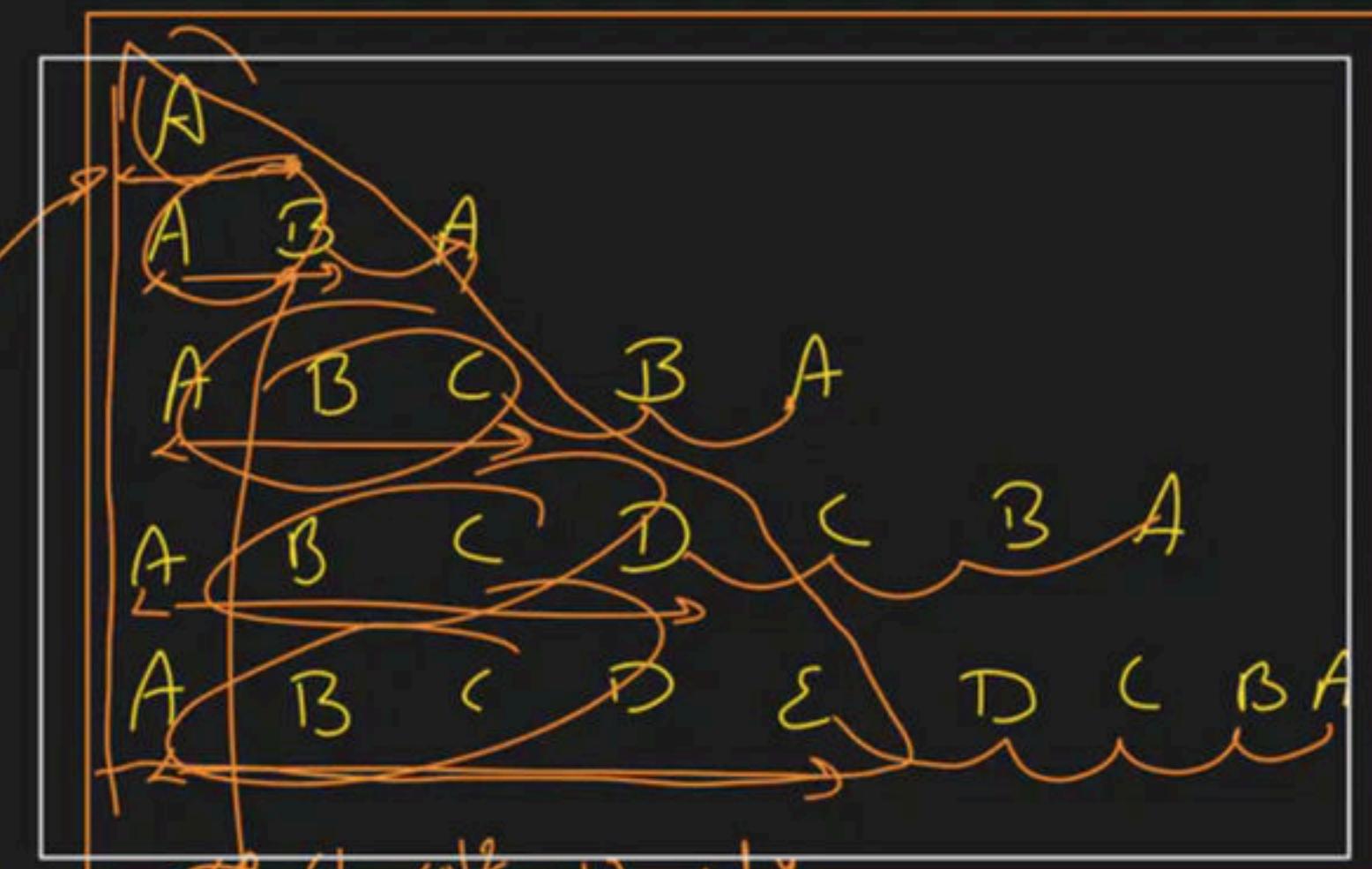
18 → 17

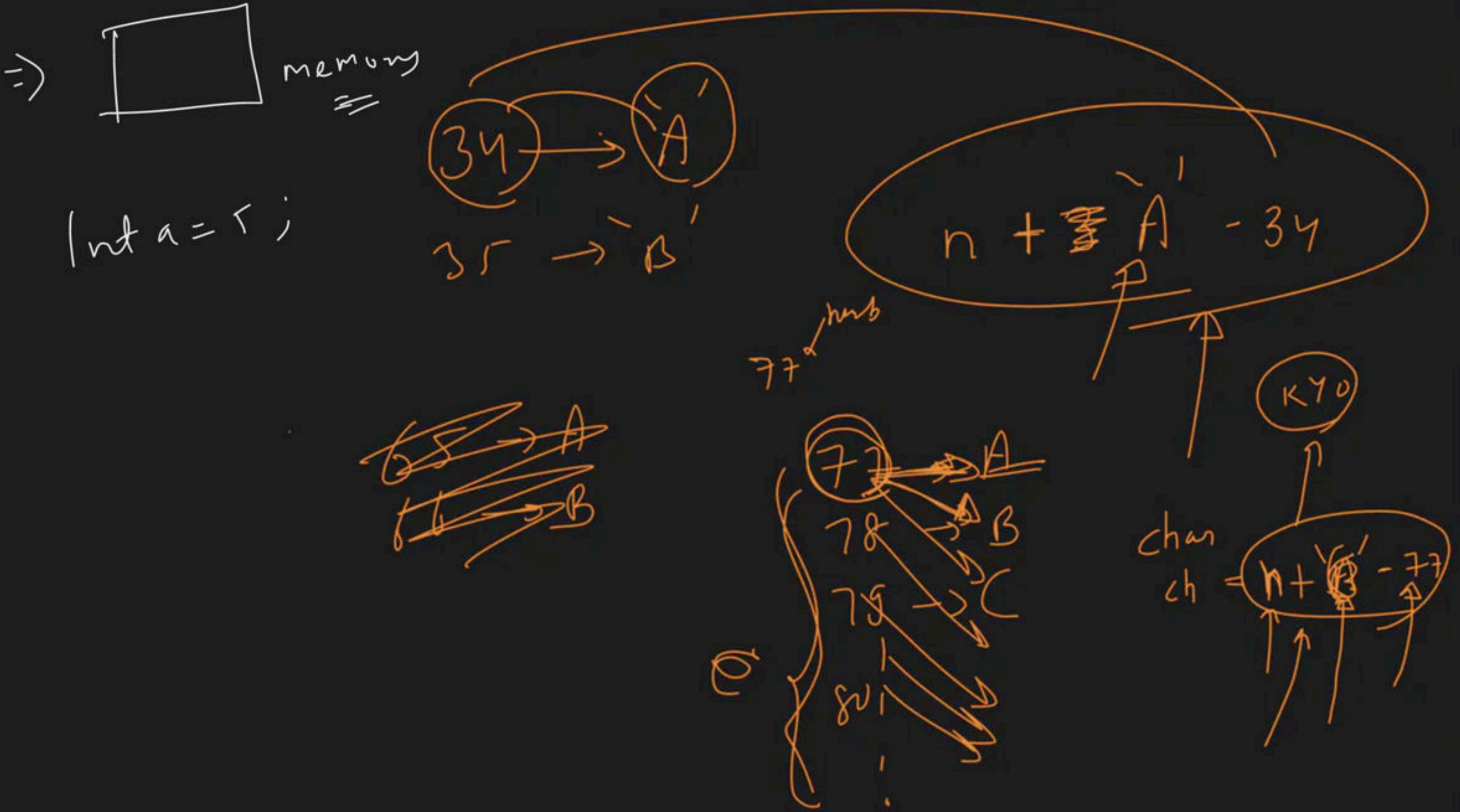
L → R

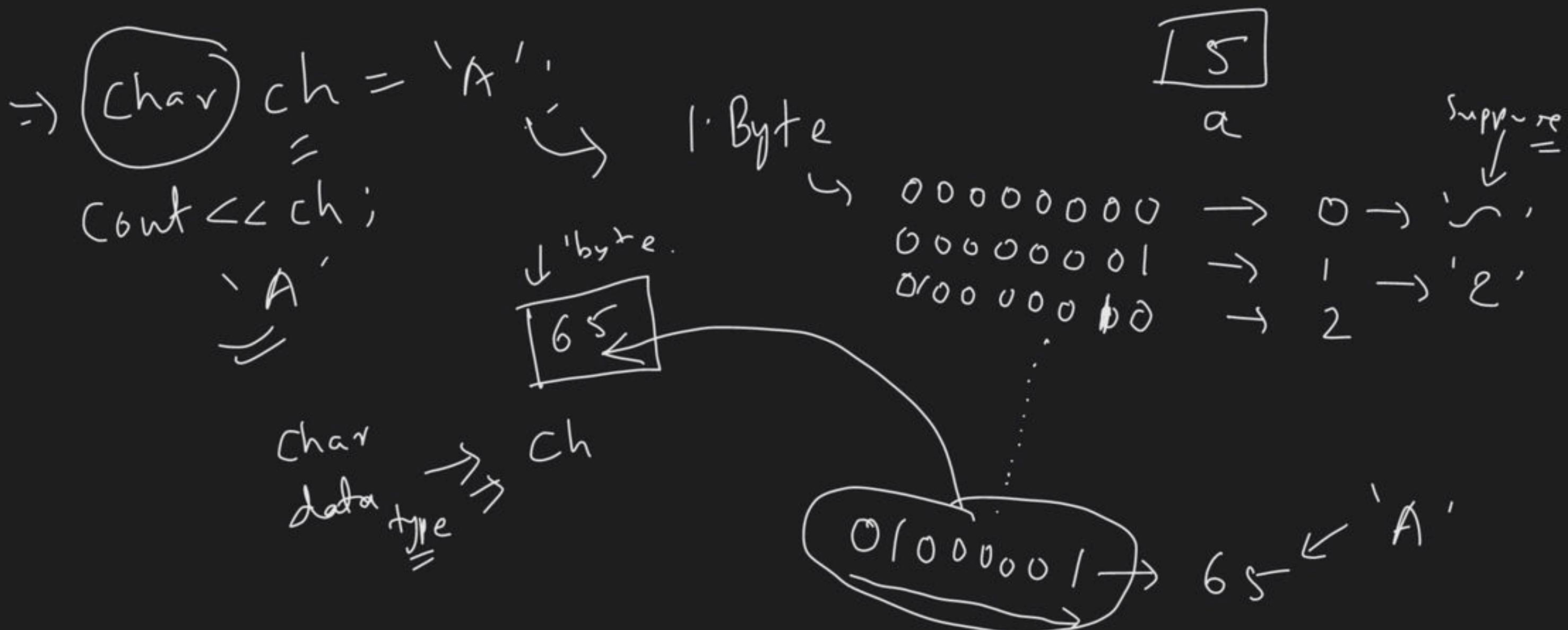
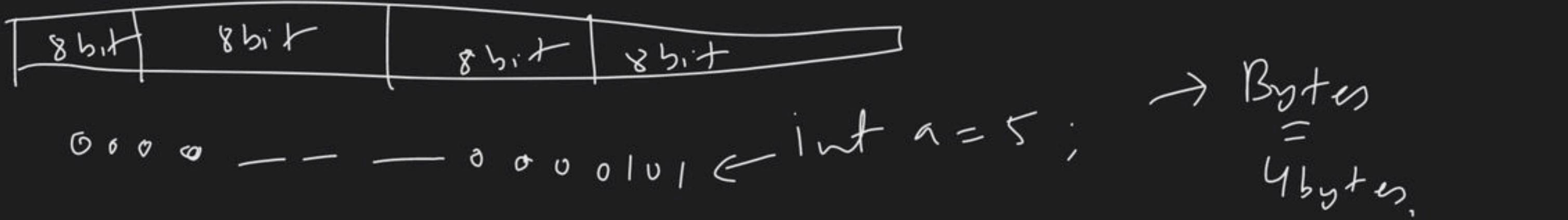
4

14

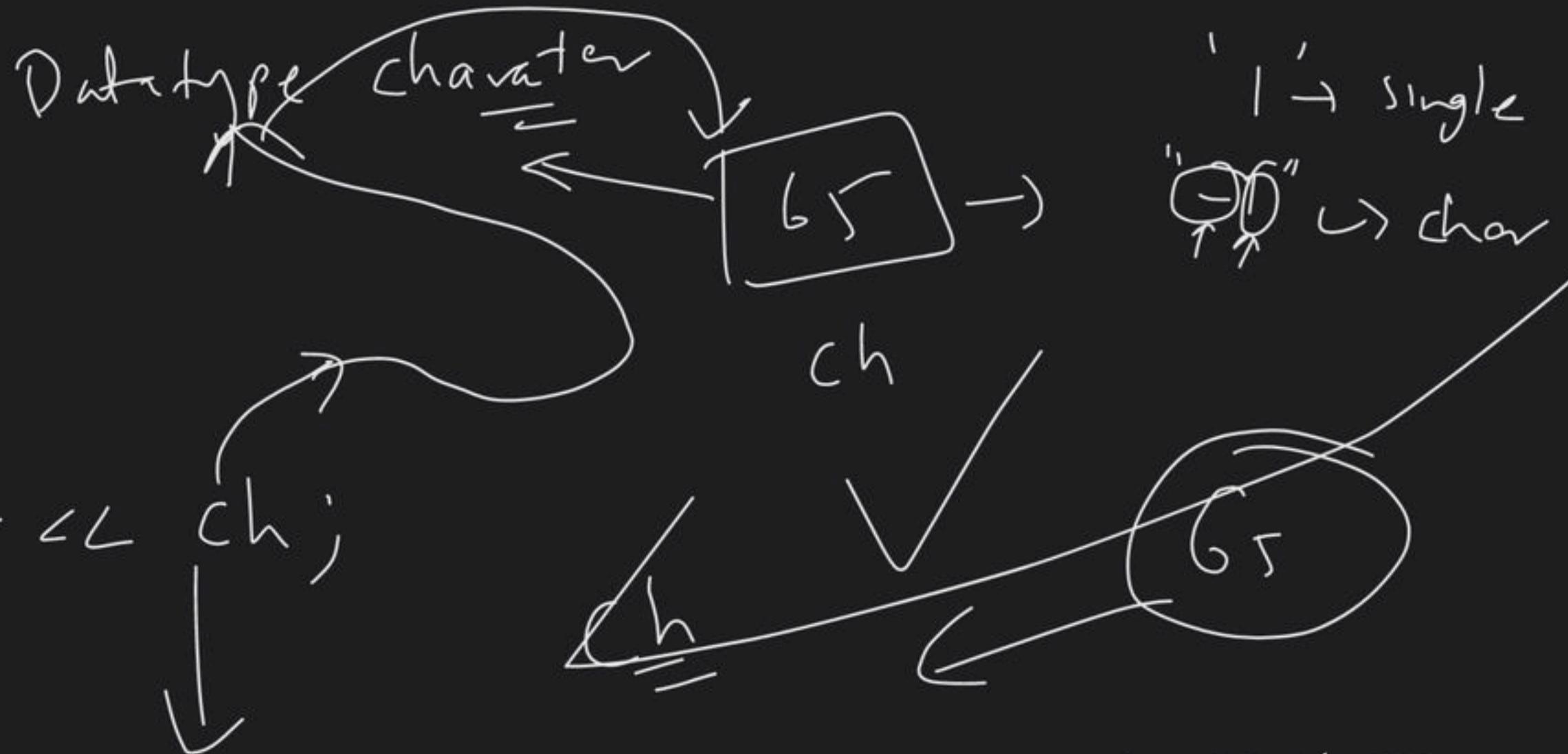
$$f_5 \rightarrow \bar{A}^L$$





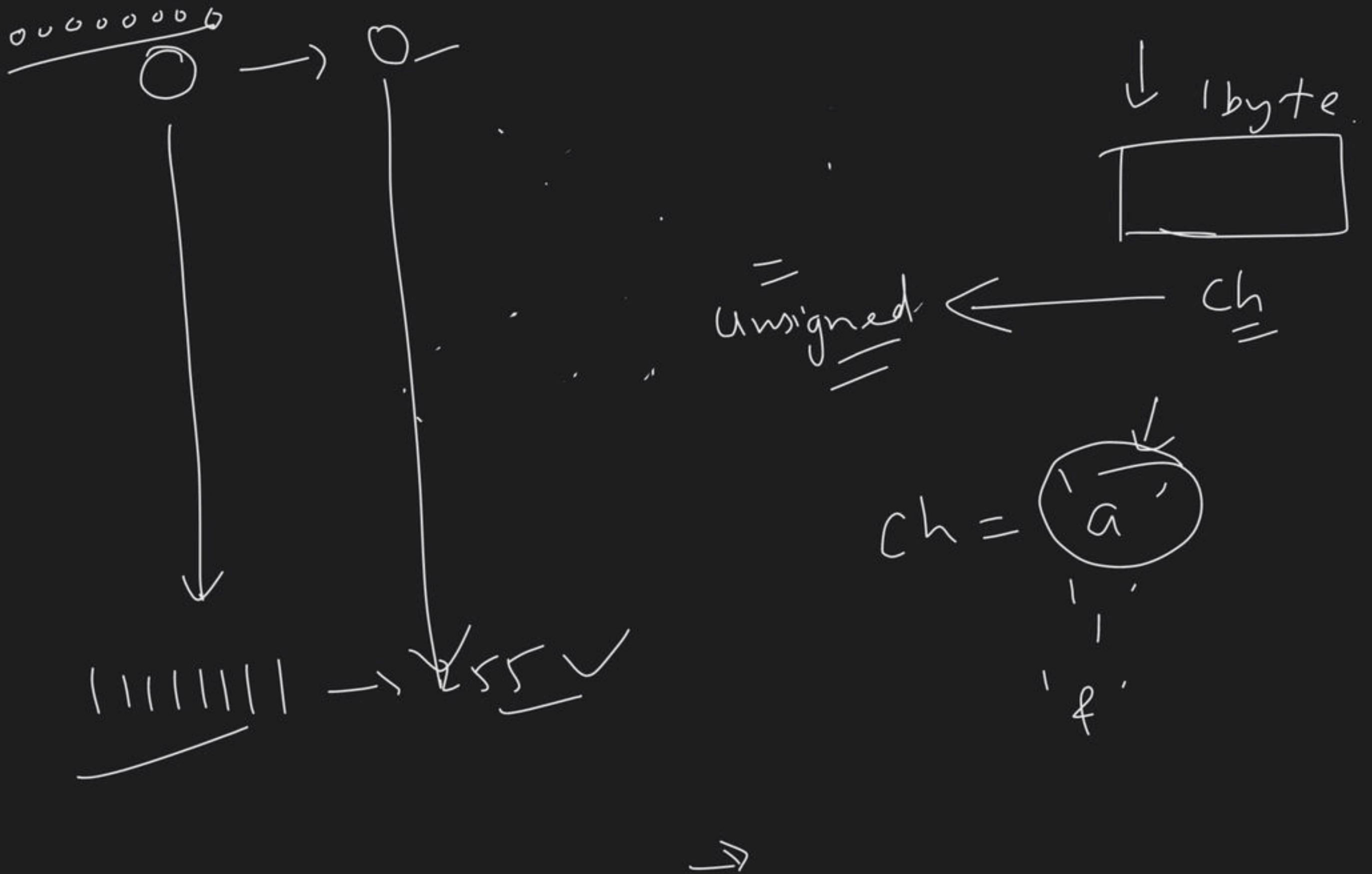


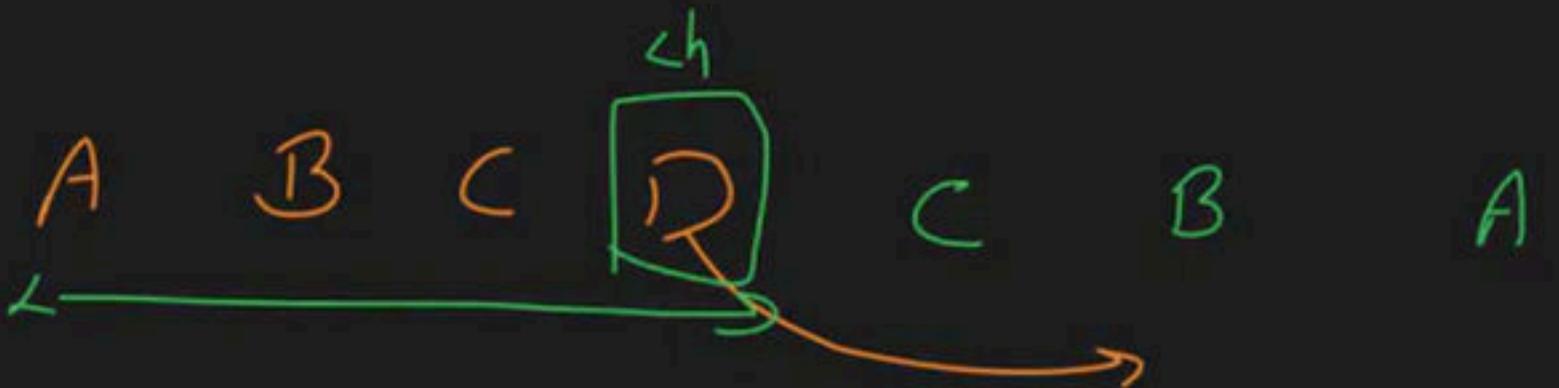
-1
int



'A' → A
int a;
= →







$ch = 'R'$

$\text{--} \bar{D}' - 1$

$\text{--} \bar{E}$

$\text{--} \bar{F}$

$B - 1$

$A = \text{--} \bar{G}$

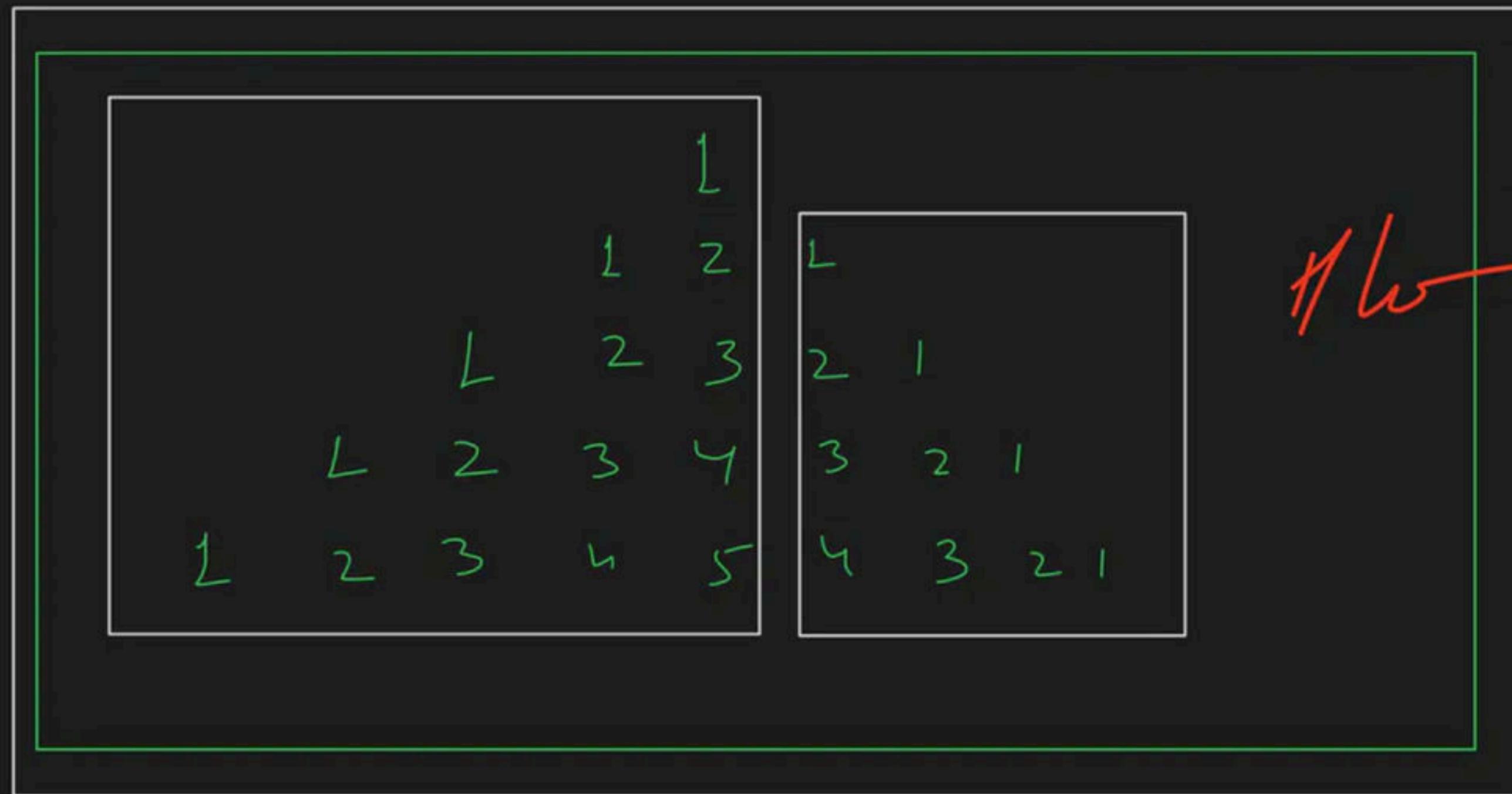
1	2	3	4	5
2	-	-	5	
3	-	5		
4	5			
5				

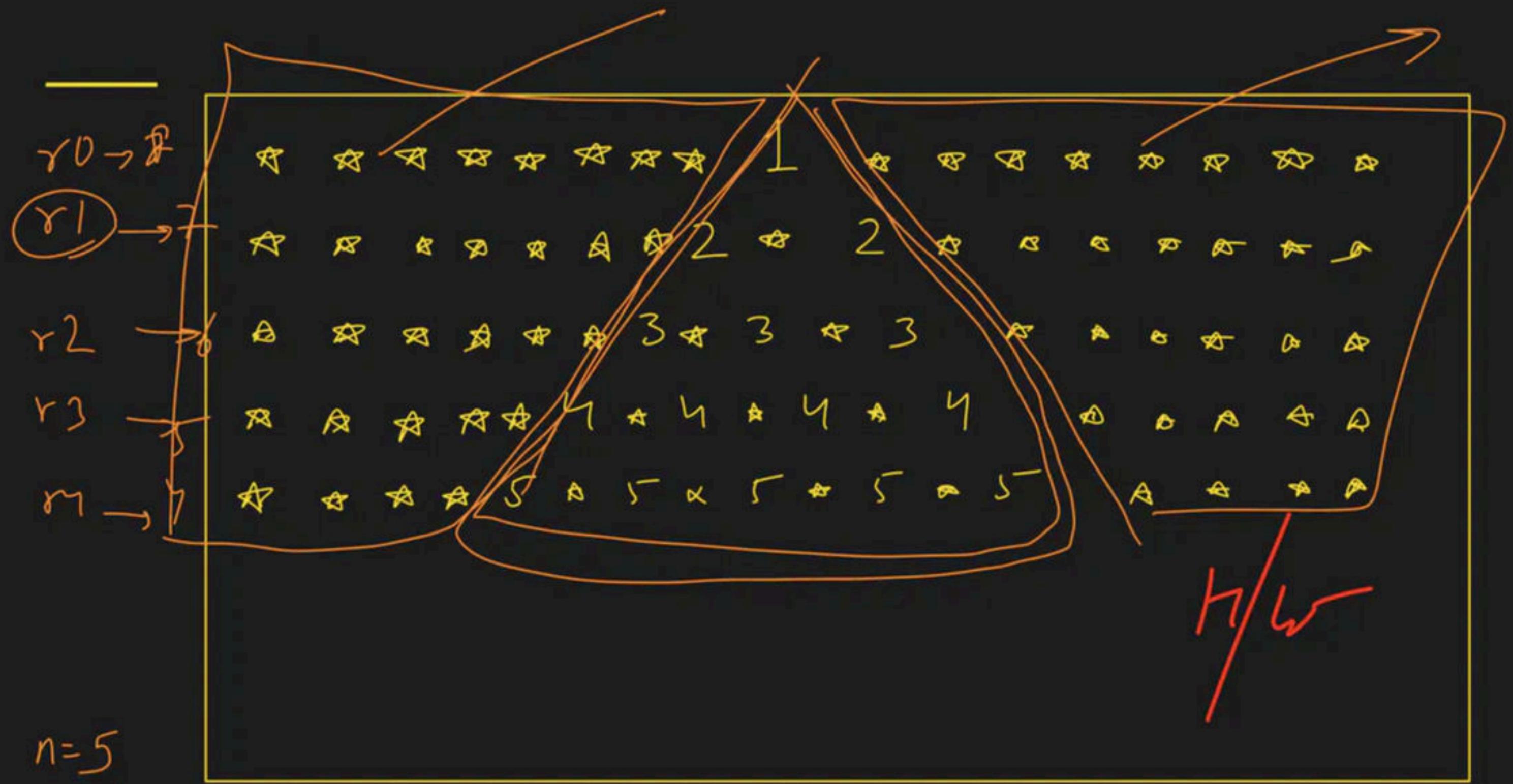
Numric hollow

inverted half Pyramid



Numeric Palindrome Equilateral Pyramid

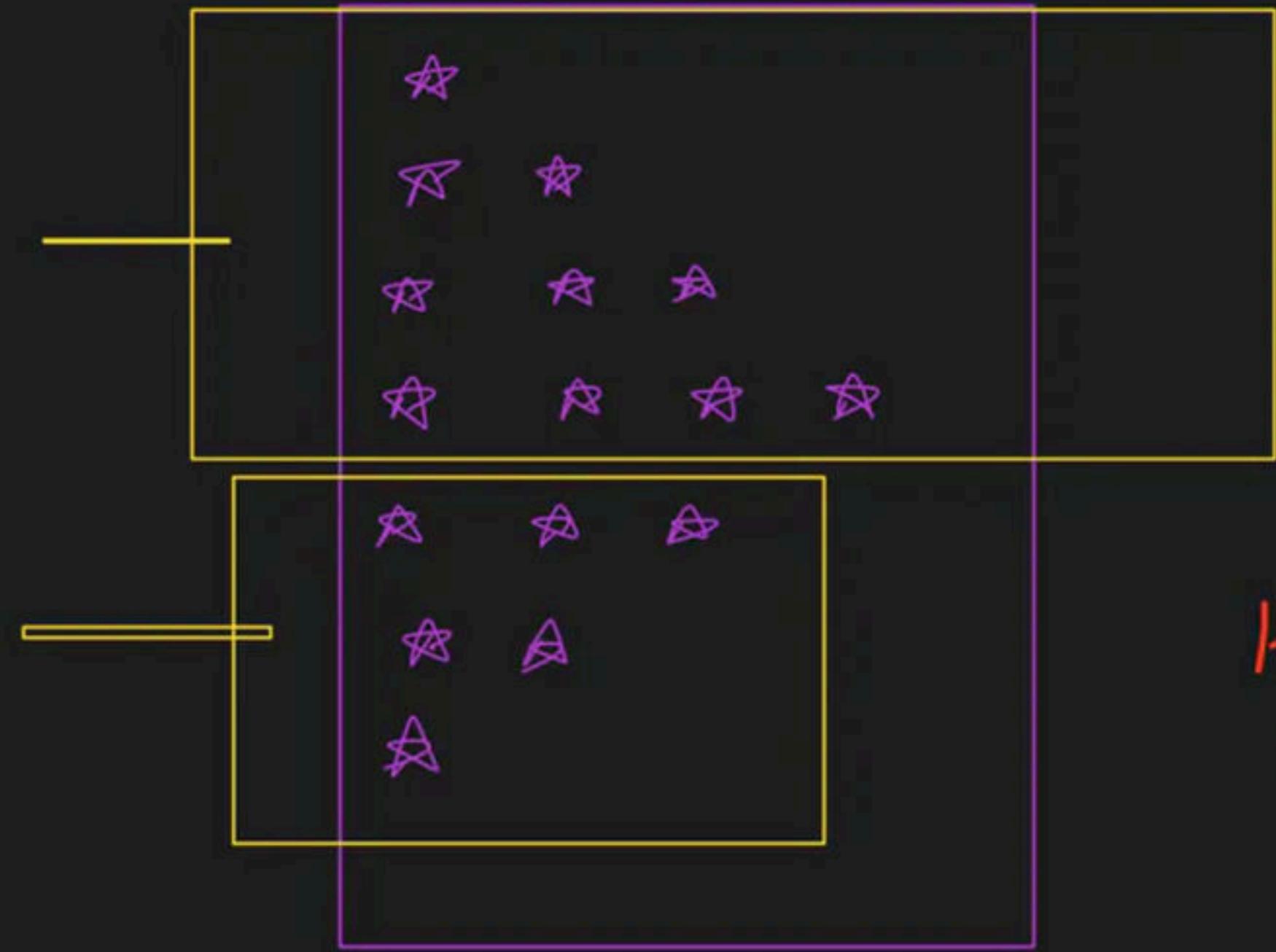




$$2 \times 5 - 1 - 2$$

$$2 \times 5 - 6 - 2$$

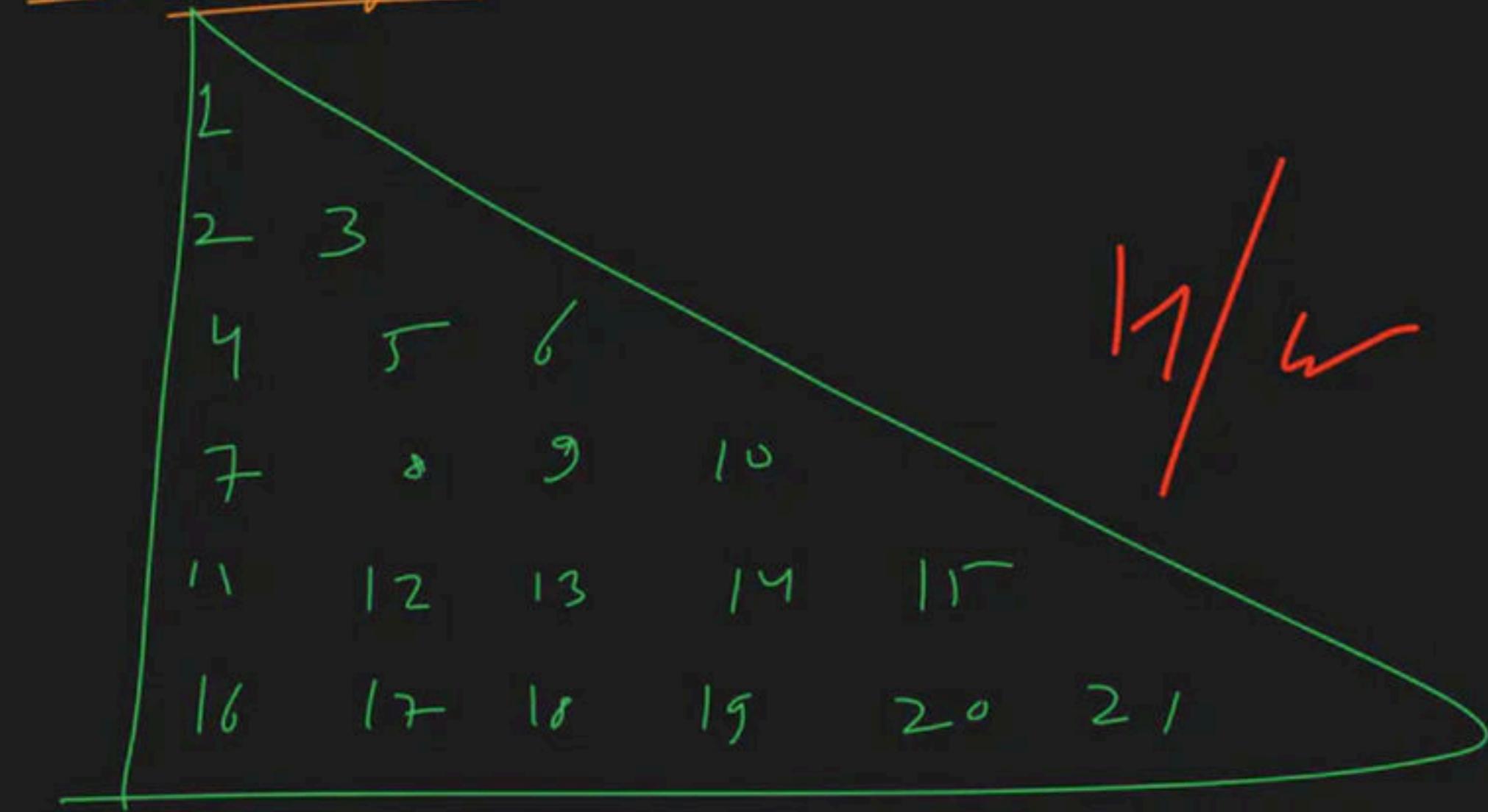
Solid
Half Diamond



H/w

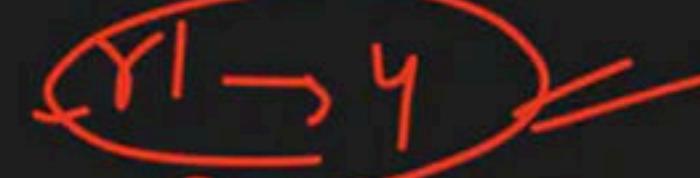


floyd
triangle



Butterfly

$$\gamma_0 \rightarrow 1 \quad 2^{n-2}-2$$

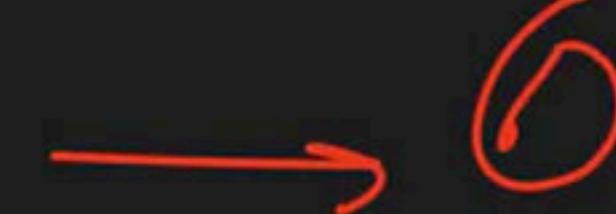


γ

$$\gamma_2 \rightarrow 2 \quad 2^{n-4}-2$$

$$\gamma_3 \rightarrow 0 \quad 2^{n-6}-2$$

$n=4$



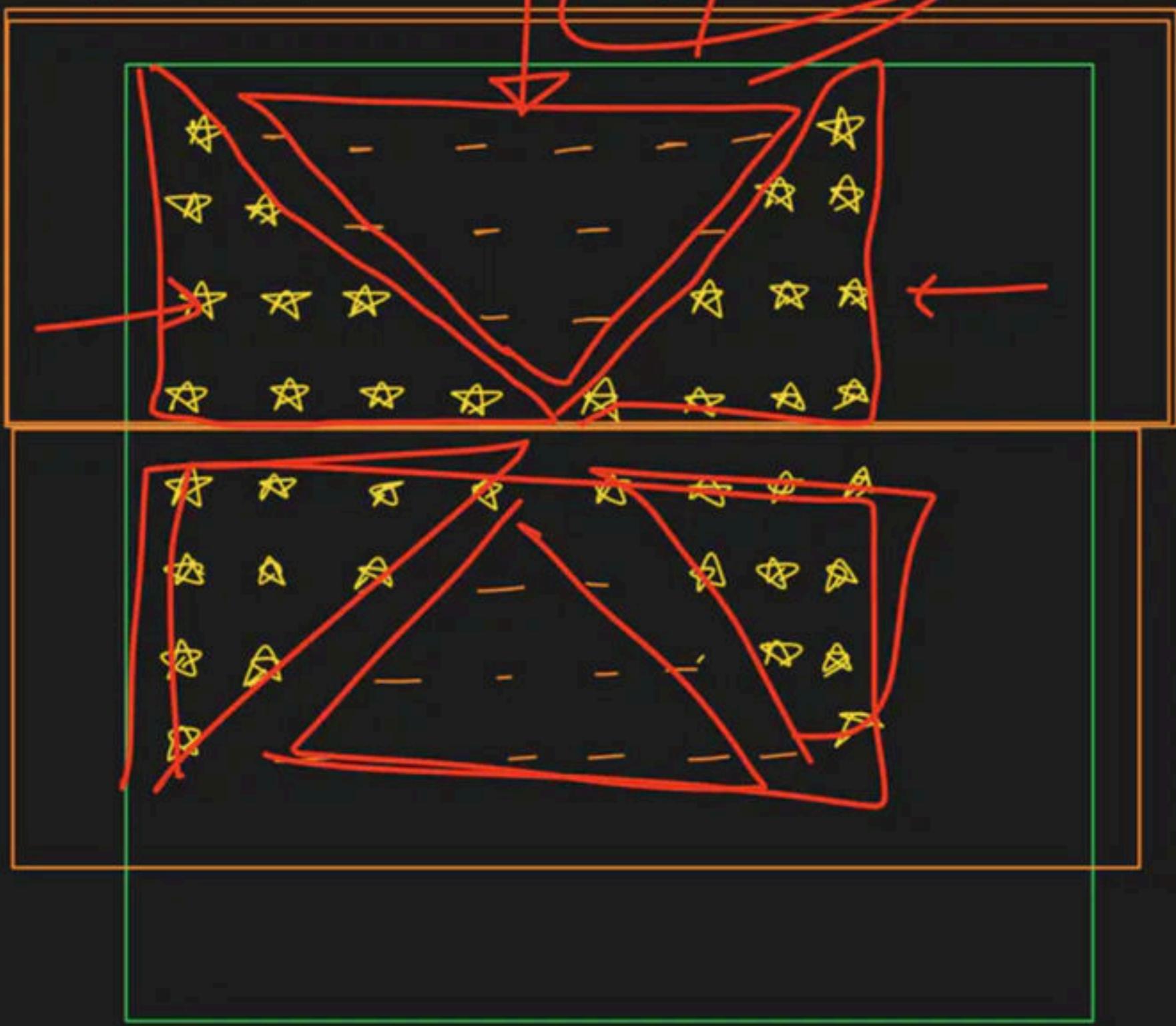
$\gamma=0$

$$2^{n-2\gamma}-2$$

$$8-0-2=6$$

Pattern

CMU



~~Opubits~~

~~doubts~~

~~Din's lot~~

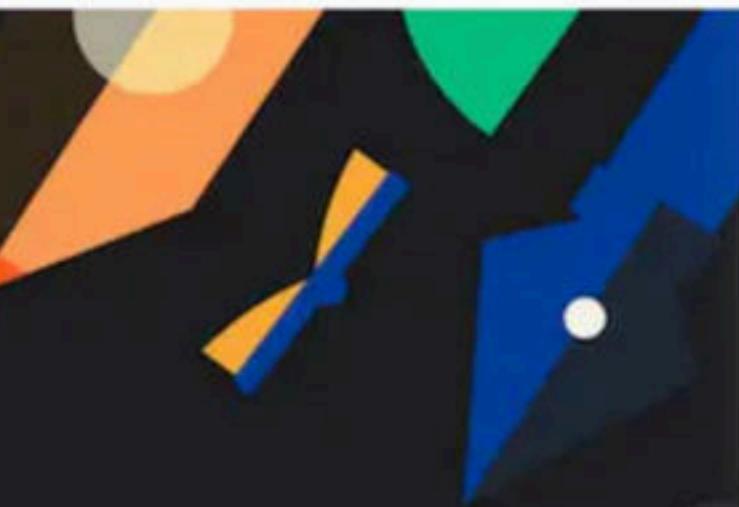
~~TA's car~~

Possibly

~~Friday~~

~~Sat Sun~~

~~1-3 pm~~

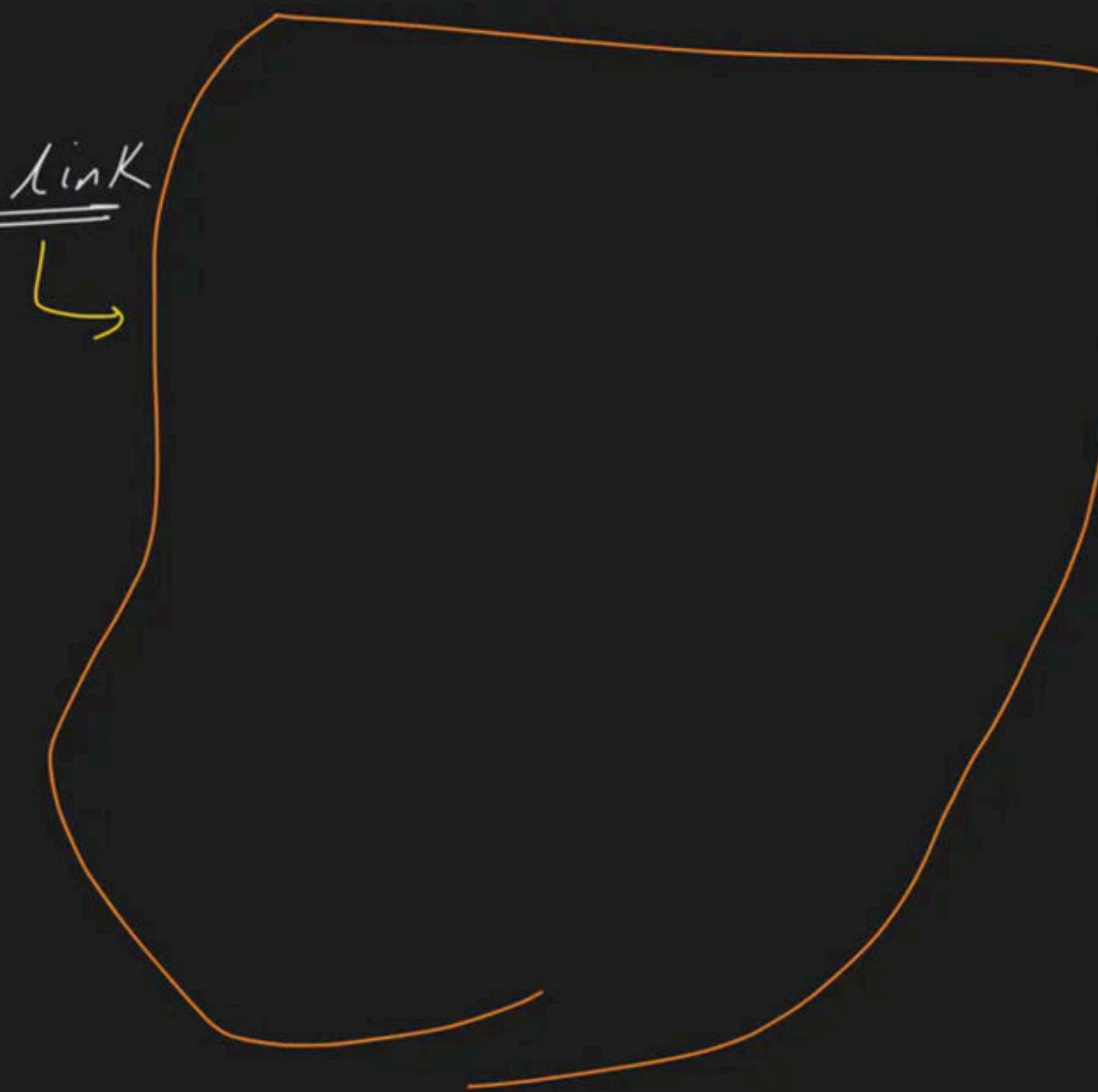


Bitwise Operators & Loops

Special class

Love Babbar • Sept 3, 2023

\rightarrow Record Link



→ Bitwise \Rightarrow (bit level)

truth table

&

a	b	o/p
0	0	0 \rightarrow 0
0	1	0 \rightarrow 0
1	0	0 \rightarrow 0
1	1	1 \rightarrow 1

AND $\rightarrow \wedge$ \Rightarrow
 OR $\rightarrow \vee$
 NOT $\rightarrow \neg$
 XOR $\rightarrow \oplus$

i/p

\wedge

" " "

a	b	o/p
0	0	0 \rightarrow 0
0	1	0 \rightarrow 1
1	0	0 \rightarrow 1
1	1	1 \rightarrow 1

2 + 3
 operand
 operator

AND $\rightarrow \wedge$
 OR $\rightarrow \vee$
 NOT $\rightarrow \neg$
 " " "

Not

" " "

a	o/p
0	1
1	0

64 bit \rightarrow 8 byte

\Rightarrow ~~long~~ int \rightarrow sizeof(int) \rightarrow 4
~~long~~ \rightarrow . \rightarrow 4 ↑

long long \rightarrow 8 ✓

A truth table for the XOR operation is shown below. The table has three columns: 'a' (input 1), 'b' (input 2), and 'o/p' (output). The output is labeled 'i/o' at the top. The table shows the following results:

 - Row 1: a=0, b=0, o/p=0

 - Row 2: a=0, b=1, o/p=1

 - Row 3: a=1, b=0, o/p=1

 - Row 4: a=1, b=1, o/p=0

A circled 'XOR' symbol with a checkmark is next to the table. A red checkmark is also present near the table.

To the right of the table, handwritten notes explain the output:

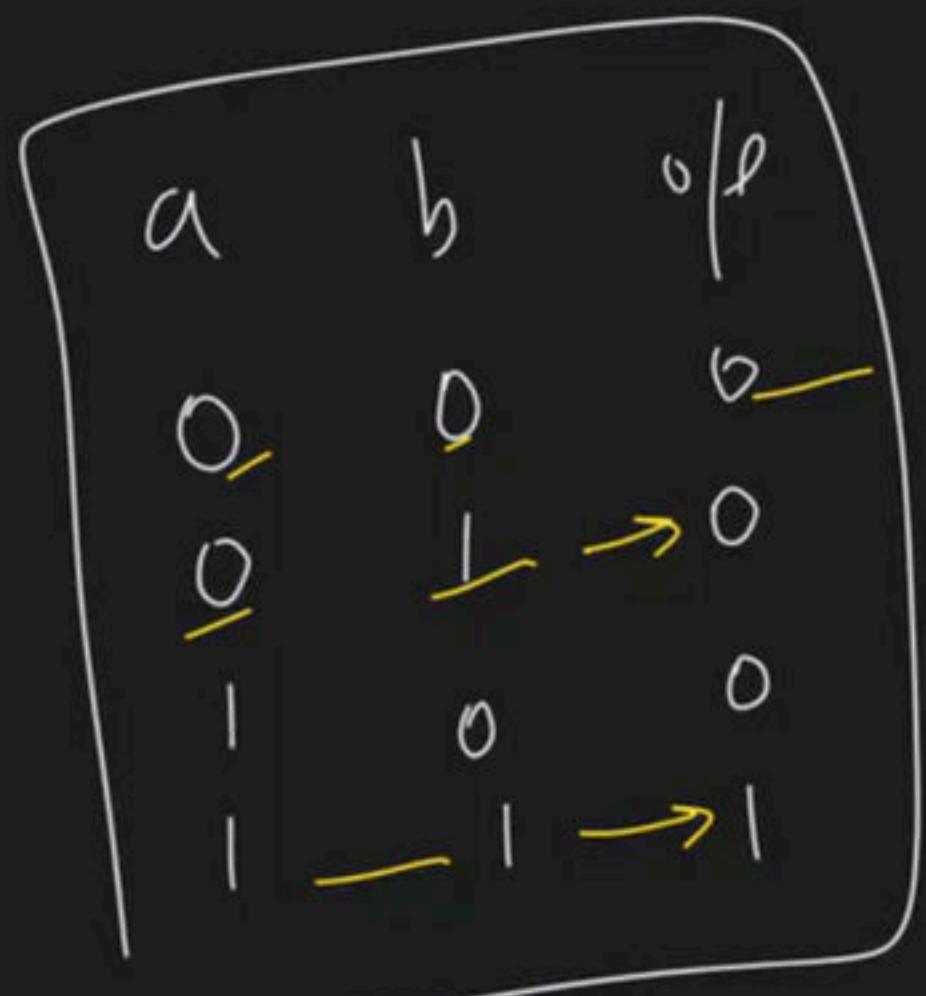
 - 'same → 0'

 - 'diff → 1'

Below the table, a sequence of binary digits is shown: $101 \wedge 110 \wedge 011 \wedge 101 \wedge 110 \wedge 011 \wedge 101$. Above this sequence, a circled 'S' is followed by a circled '5' with a checkmark, and a circled 'Q' with a checkmark.

At the bottom left, there is a yellow arrow pointing right, followed by the text '→ i/p'.

2 & 3



$$2 \rightarrow 000000110$$

$$3 \rightarrow 000000111$$

2 & 3 \rightarrow 2

5 & 10

5 | 10

5 → 000000_101

10 → 000001_010

0000 1111

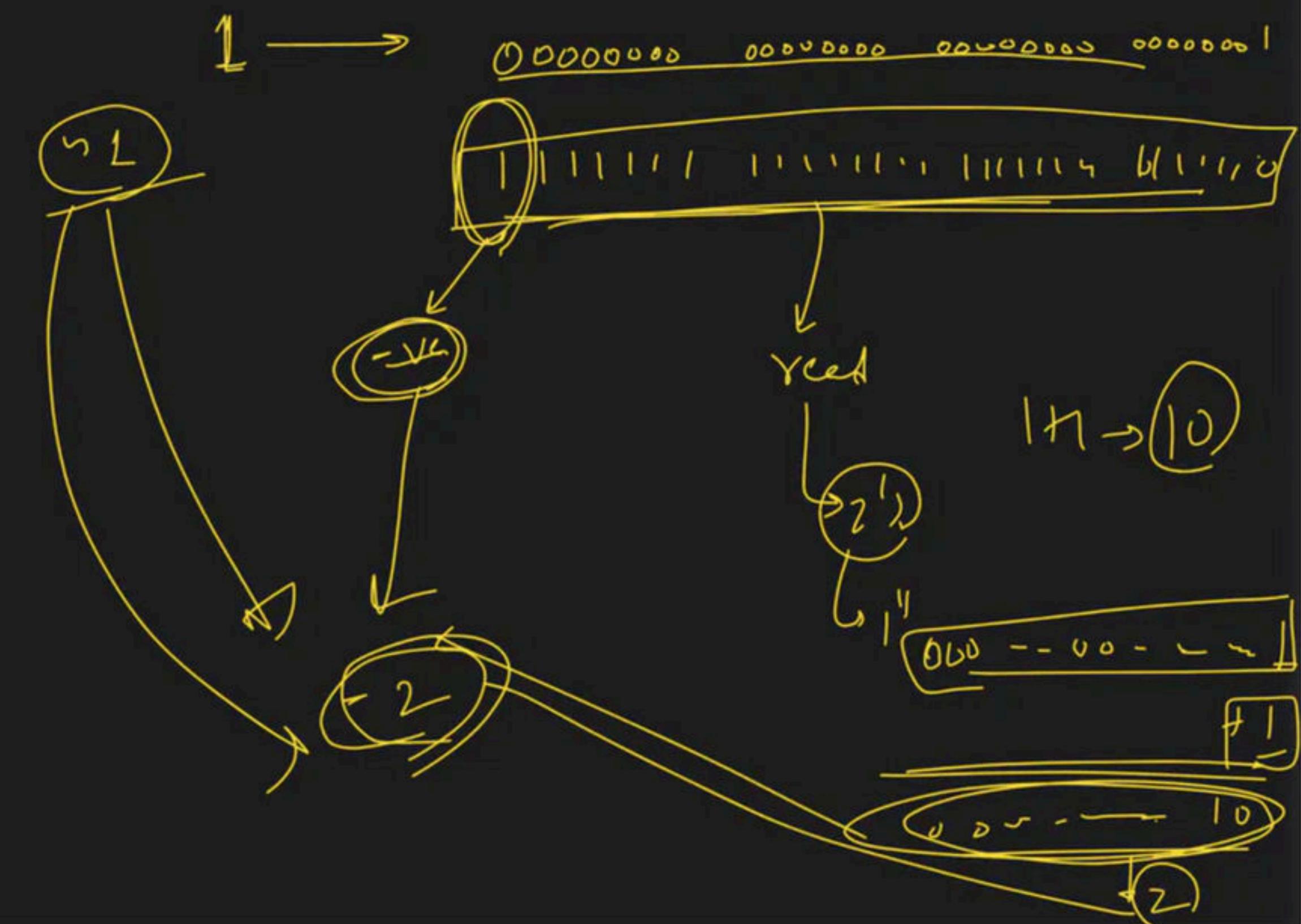
15

5 → 000000_101

10 → 000001_010

00000000

5 & 10



⑥

$$5 \rightarrow 0\ 000\ 0\underline{1}01$$

$$5 \rightarrow 0\ 000\ 01\underline{0}1$$

00000000

$\bar{s}^A s^- \rightarrow 0$

~~$s^A s^-$~~

$5^{\wedge}10 \rightarrow$

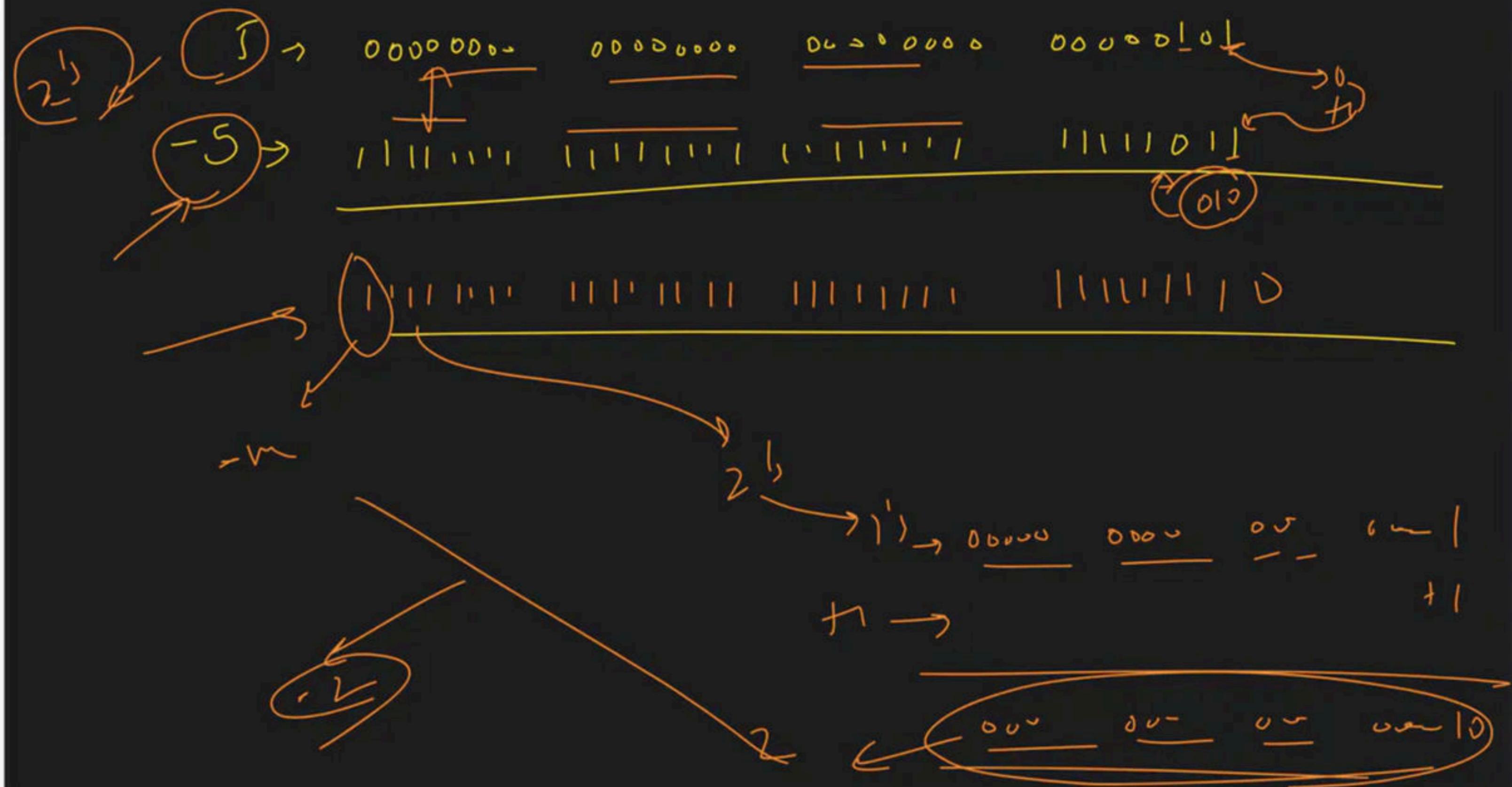
$5 \rightarrow 0000001010$

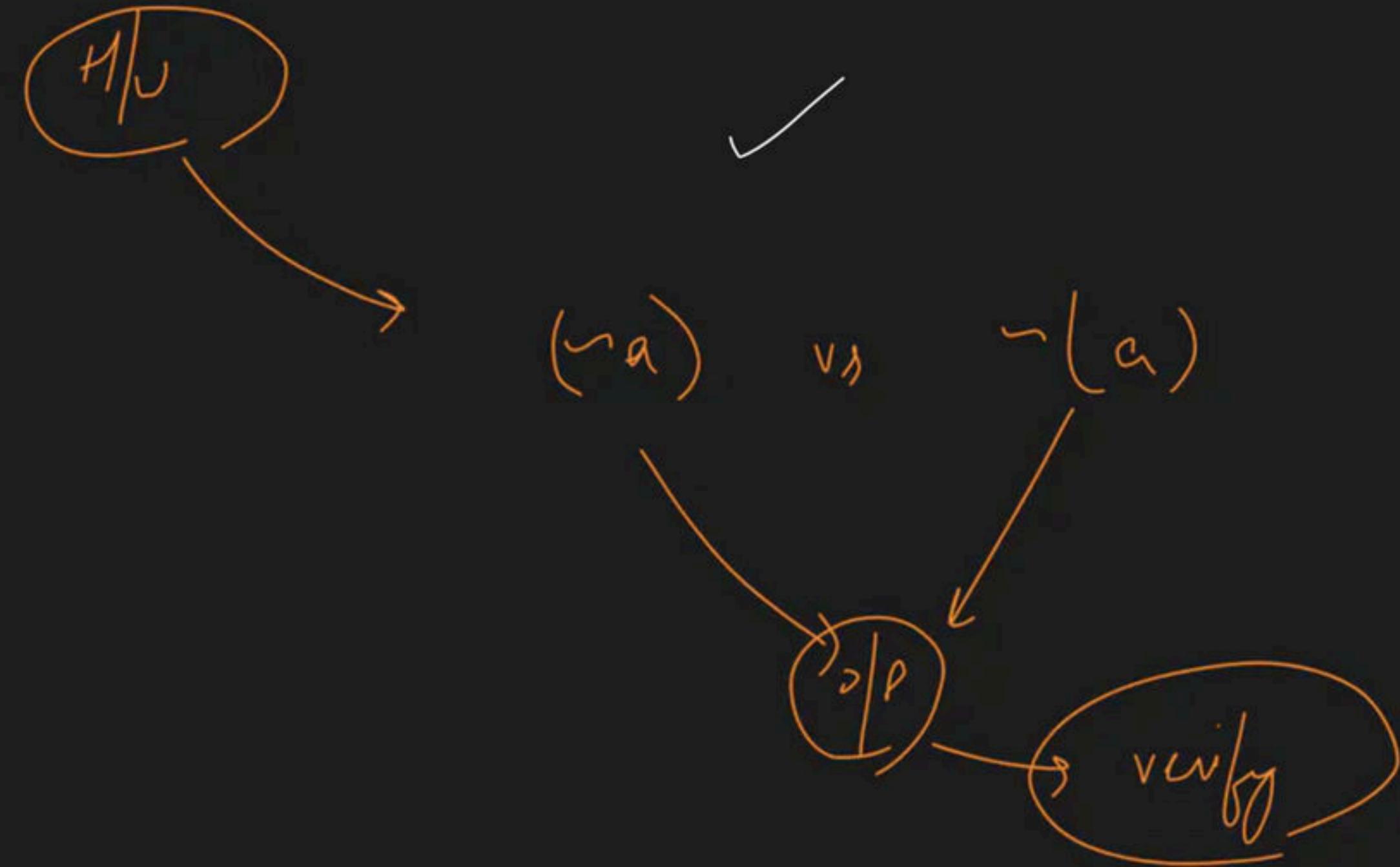
$10 \rightarrow 000001010$

0000011111

$5^{\wedge}10 \rightarrow 11$

$\cancel{5-10=10}$





\rightarrow Left & Right Shift Operators (21)

"<<"

">>"

int a = 2

0000 - - - 000010 → 2
a << 1 → a & left shift by 1 bit

0000 - - - 0000100 → 4

0 | 0 | 0 | 0 | - - - | 0 | 1 | 1 | 1

7

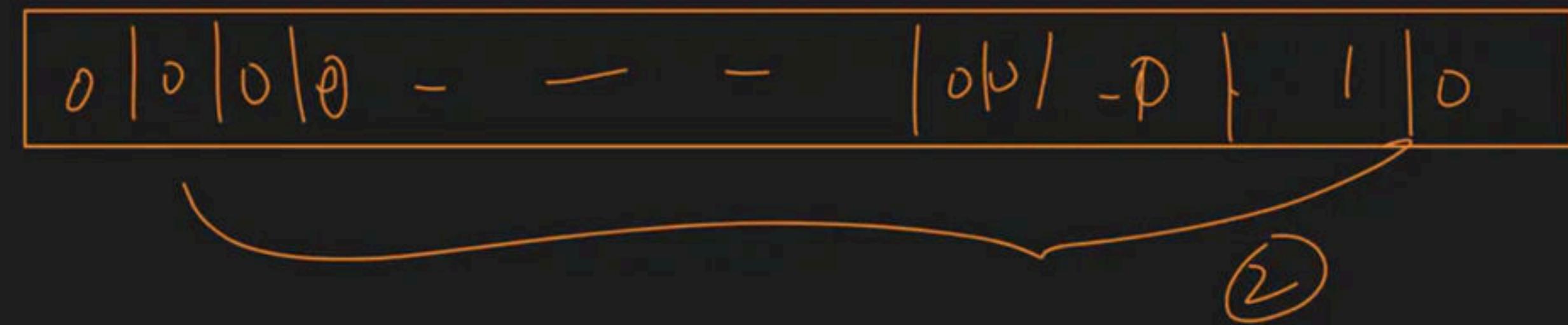
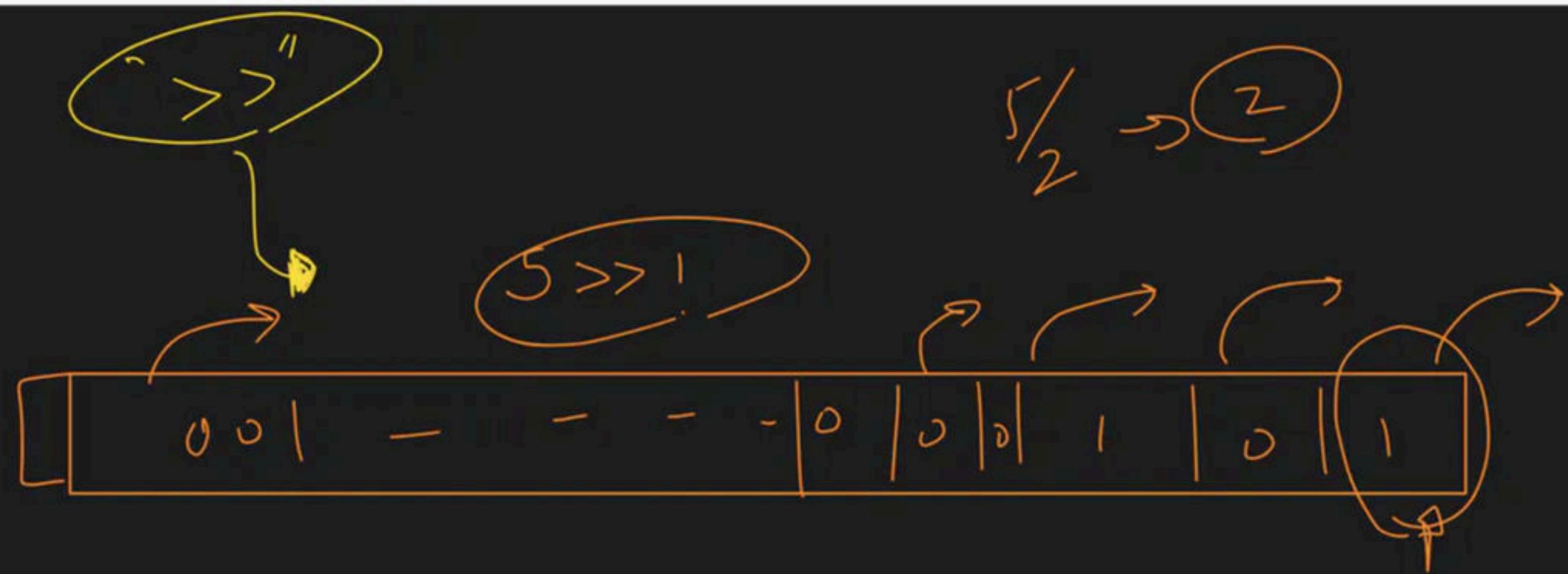
<<1

0 | 0 | 0 | - - - | 0 | 1 | 1 | 1 | 0

14

<<1

0 0 0 - - 1 1 1 0 0 → 28



-5

1

The large no'

-ve R S F T \Rightarrow

-10 $>> 1 \Rightarrow$ 

0 0 0 0 - - - - | 010

| | | | | | | | 10101

+ 1

 1, 1, 1, 1, 1, 1, 1, 1011



 arithmetic Right shift

preserve the signed Bit
~~flag~~ =

~~wsgned int n = -10~~

||||| / o | o |

11

Signed

Ultra low

winged.
—

Positive large
no.

ix

2 Minuten

char a = 65

char a = 'A'

char a = 1;

char a = '1';

Pre / Post

Inc / decrement operator

phle increment Karo
for increment

phle inc Karo
for increment

phle decrement Karo
for increment

post - decrement

phle un Karo
for decrement

pre - decrement

a - /

++ a

a ++

-- a

(A) Maggi Kalo

(B) Park h Kalo

Quiz

12 x 1

11 x 12

a ~~4~~ 10

1

→ 132

$$\downarrow \quad "x" \quad \text{int } a = 10$$

$$\text{int } a = 10, \quad 11$$

11x12

V5(4) 1

A hand-drawn diagram illustrating a particle interaction. On the left, the text "Count <<" is written above two overlapping circles. The top circle contains the text "++α" and the bottom circle contains "α++". A small asterisk (*) is placed between the two circles. To the right of the circles is a large oval containing a minus sign (-). Below the oval, there are several arrows pointing towards it, representing outgoing particles.

7/10

Count <

A hand-drawn diagram showing two circles representing alpha particles (α). The left circle contains the text "++ α " and the right circle contains " α ++". A small asterisk (*) is placed between them, indicating a collision or interaction.

A hand-drawn diagram of a head-like shape. Inside the head, the number '32' is written. The number '12' is written above the top left of the head. The number '10' is written below the bottom left of the head. The number '11' is written above the top right of the head. There are also some other small marks and lines around the head.

a $T_{10}^{x_{12}}$

$$(1 \times 10^{-3}) \text{ lux} \equiv$$

121

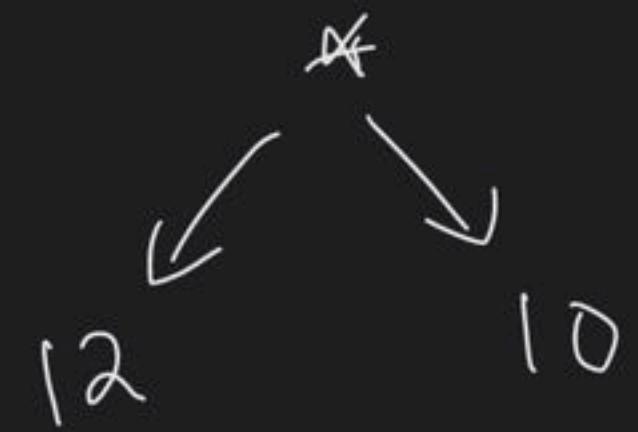
$$\rightarrow \boxed{4 \times 3 + 8 - 5} / 2$$

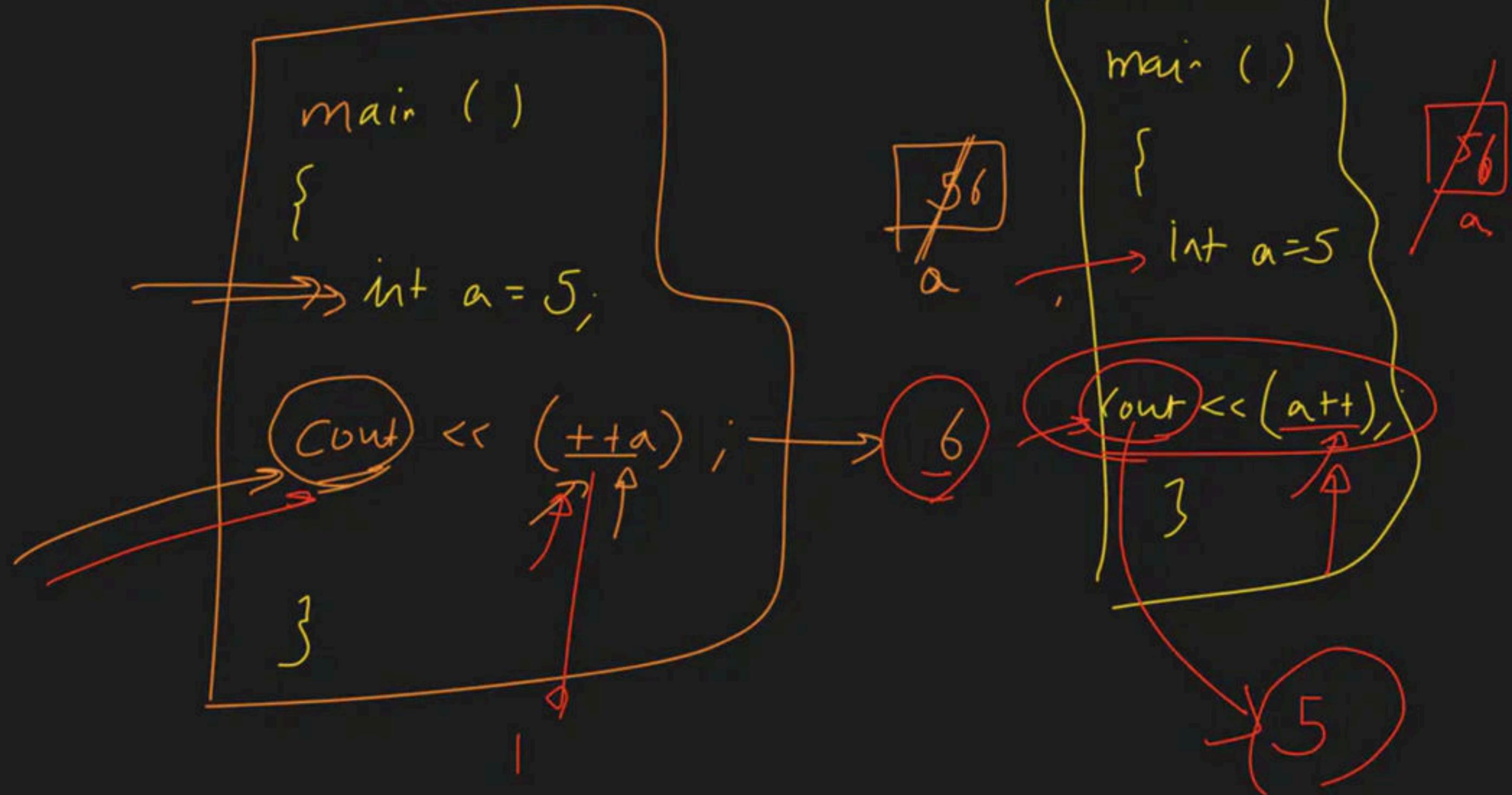
Const \Rightarrow $++a \neq a++$

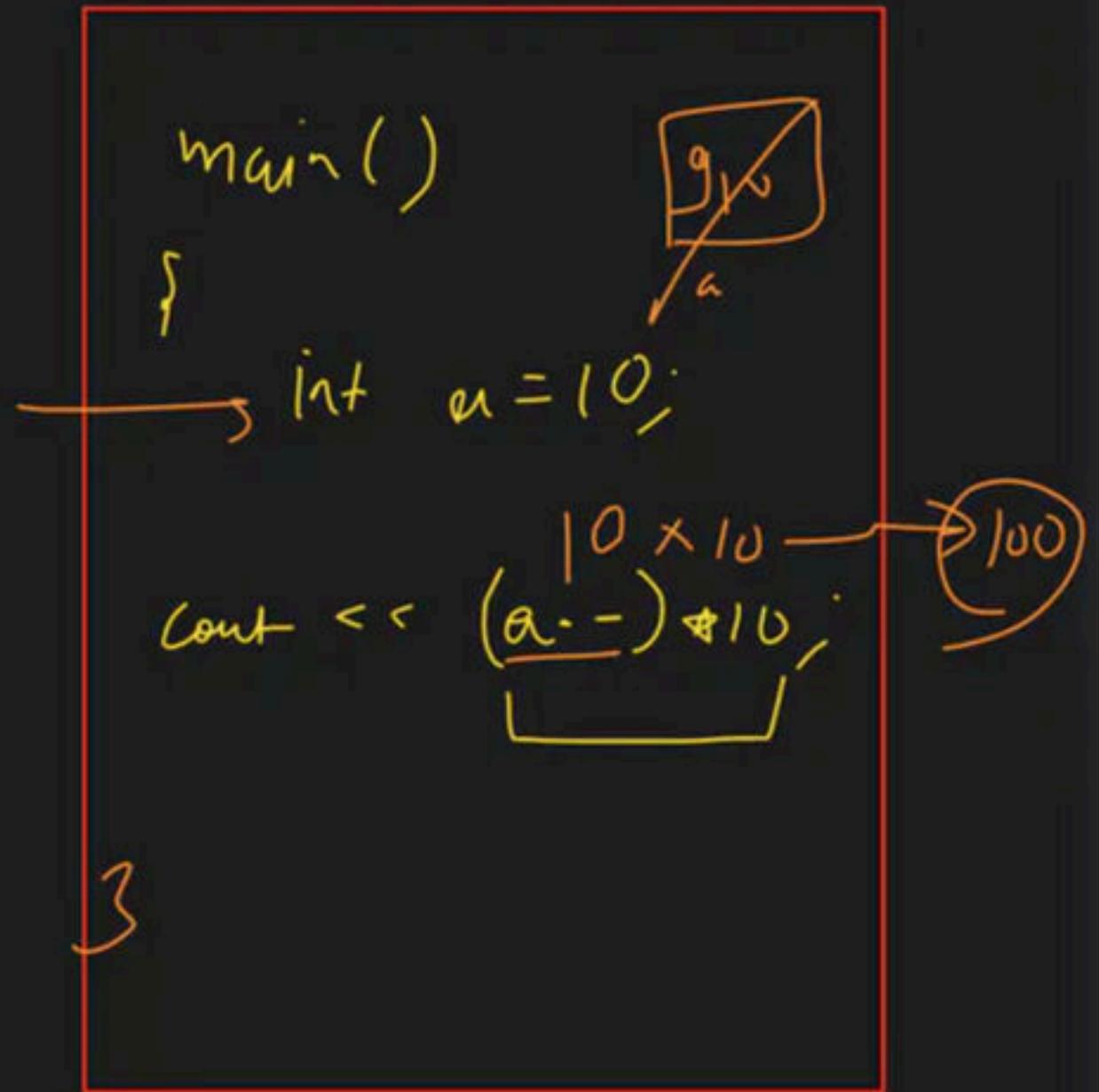
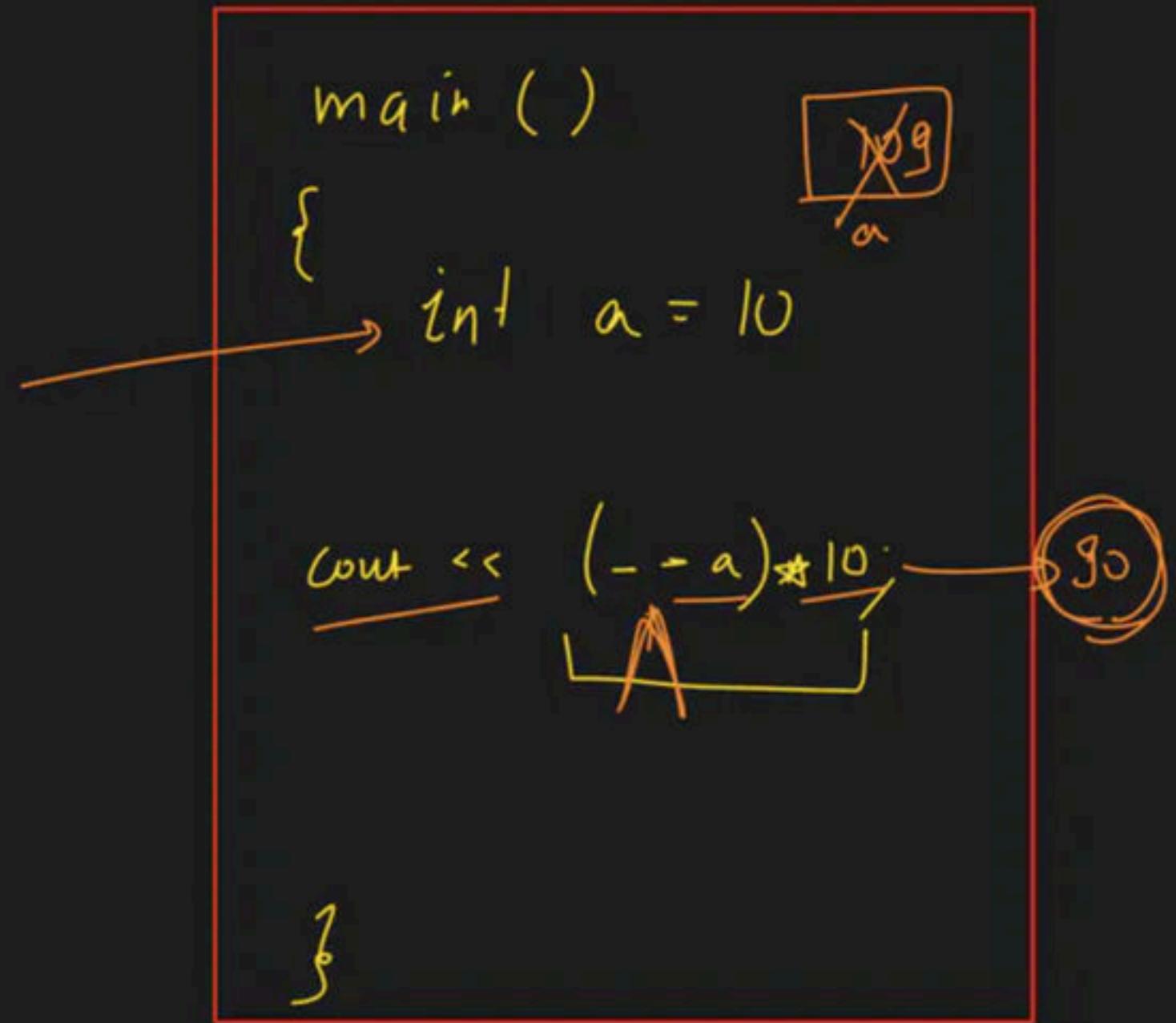
a

$\rightarrow 120$

$a \top \text{ || } \circ$







```
for (int i = 0, j = n; i < j; i++, j++)
```

A
B \pm C

```
main ()
```

```
{
```

```
int a = 21;
```

22 print

```
(cout << a++)
```

(A) inc
(B) unc

L2 print

```
(cout << a++)
```

(A) unc
(B) inc

L2 print

```
(cout << a)
```

23

```
}
```



```
main()
```

```
{
```

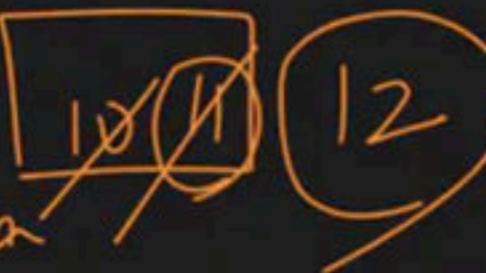
```
int a = 10;
```

(1)
 (out << (a++)) + 10;

(2)
 (out << (a++) * 10);

(3)
 (out << a);

```
}
```



main()

{

int a = 10;

$(++a) * (a++) \rightarrow 121 / 132$

$(a++) * (++a) \rightarrow 120$

out << $(++a) * (a++)$;

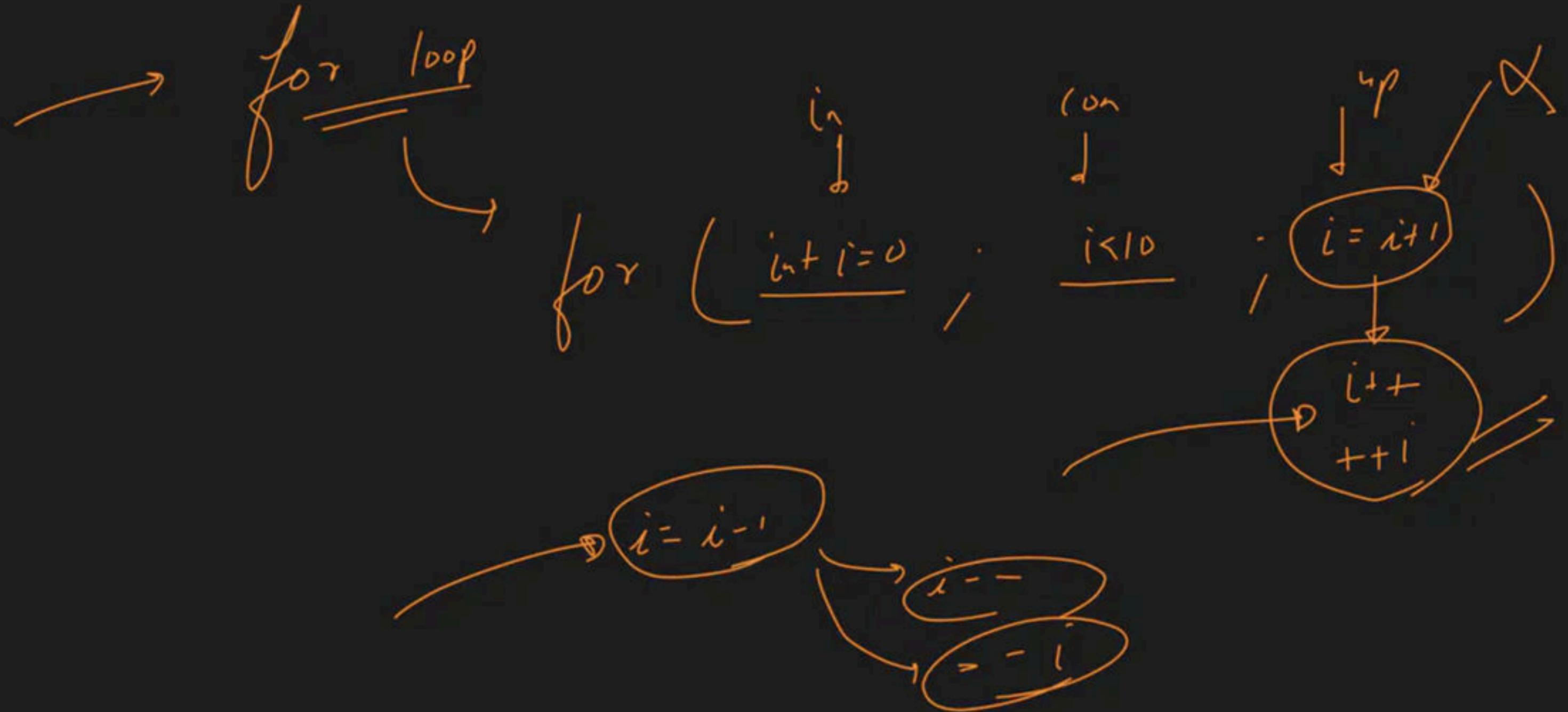
}

why
talk hay bazar

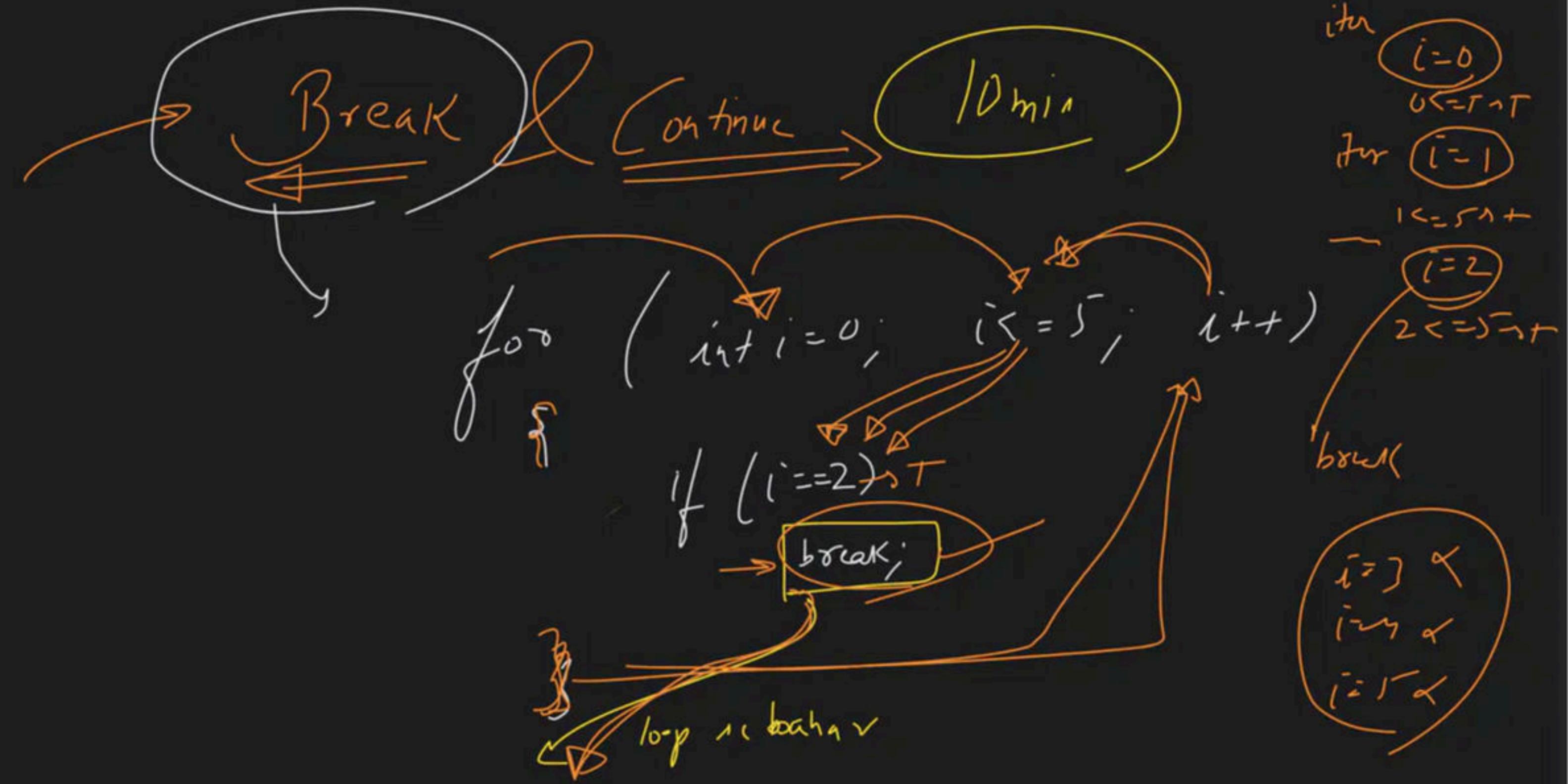
110
121
144
120
90
111
132

121

132



2 min Break



"0" "1" "2" "3" "4" "5"

Continue

target

iteration
skip

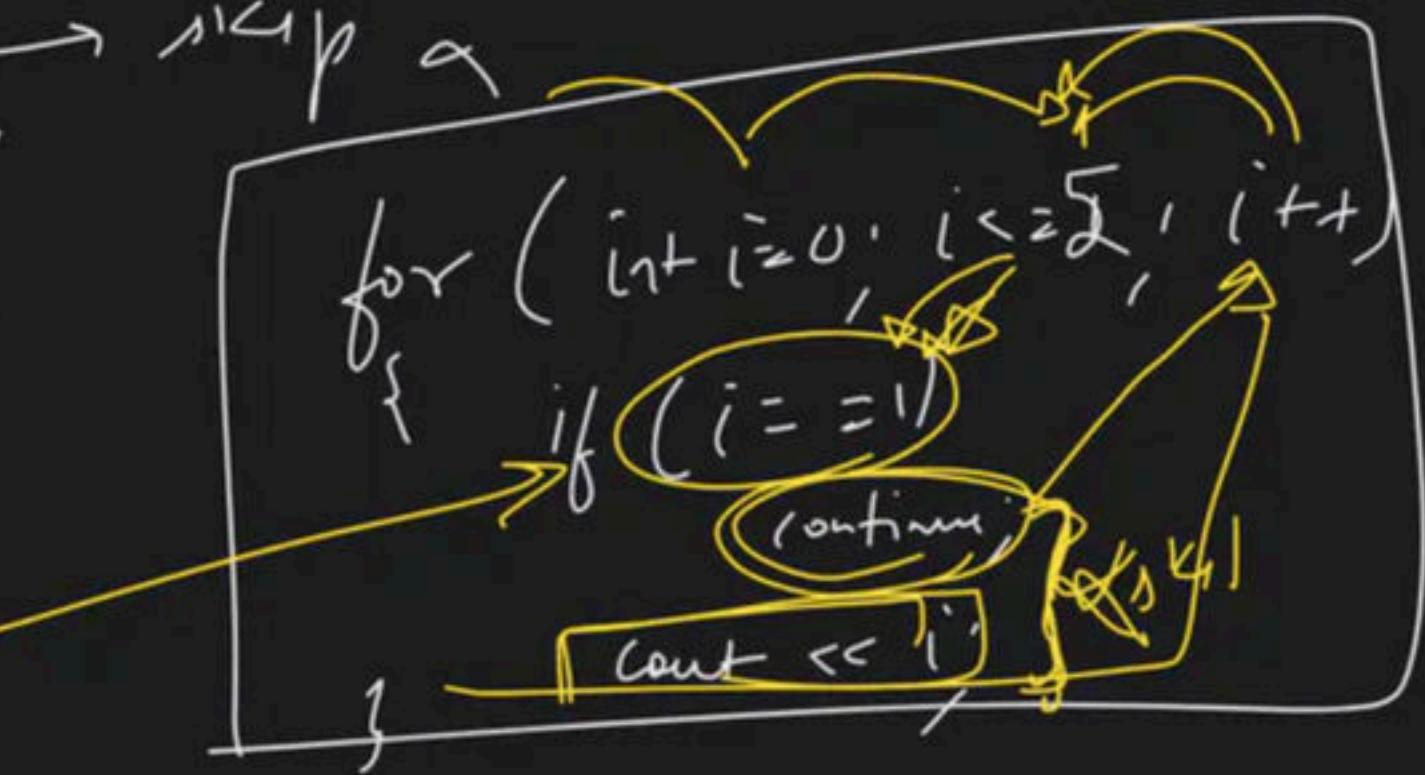
i = 0

i = 1 → skip

i = 2 → skip

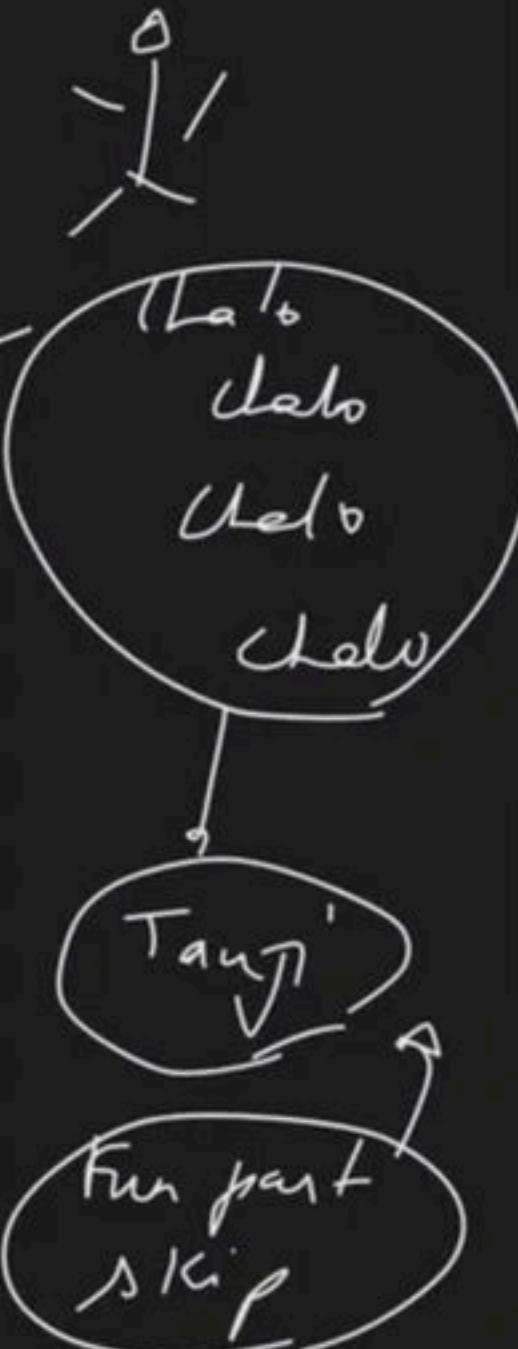
i = 3

i = 4



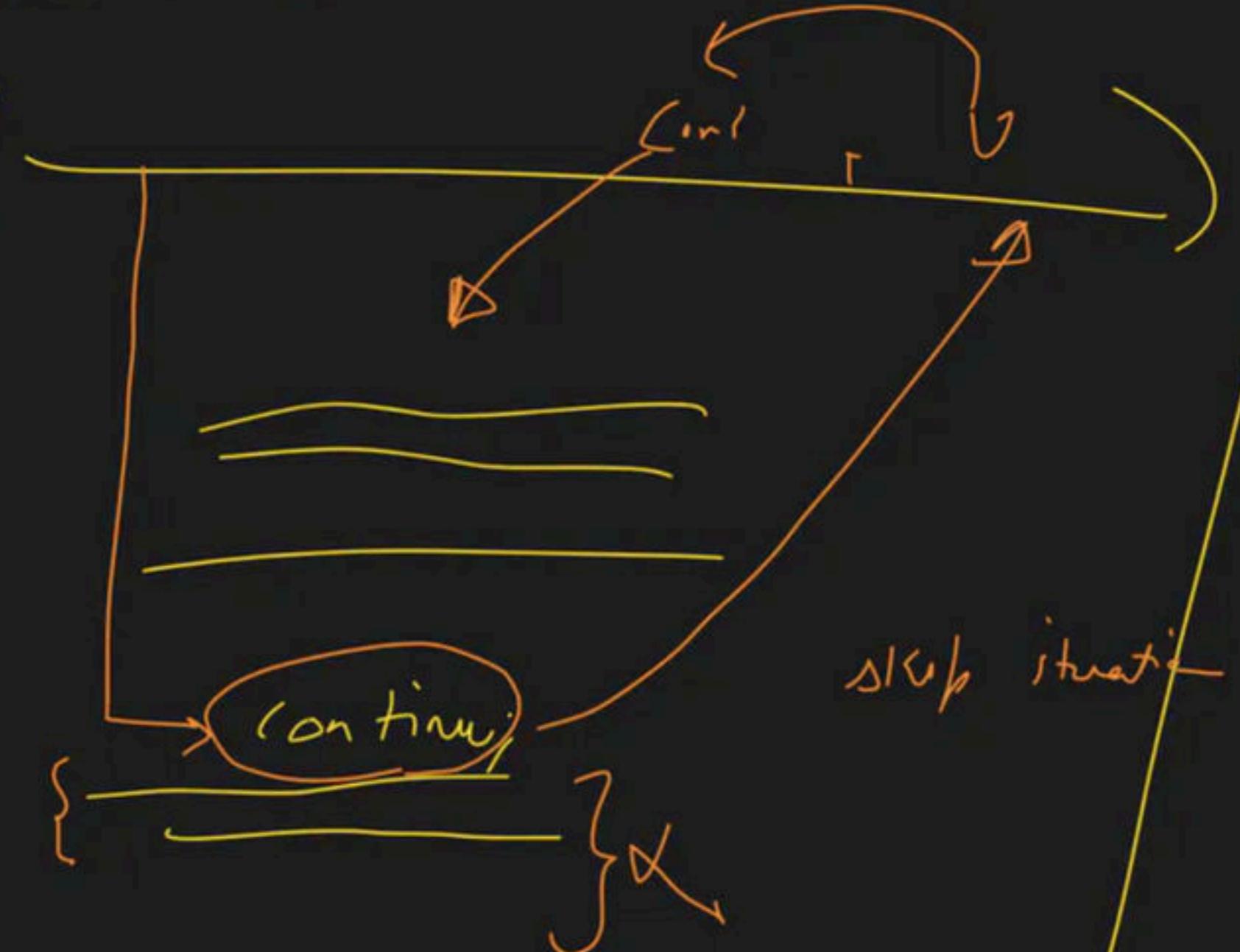
i = 0
i = 1 → skip

i = 2
r = 3

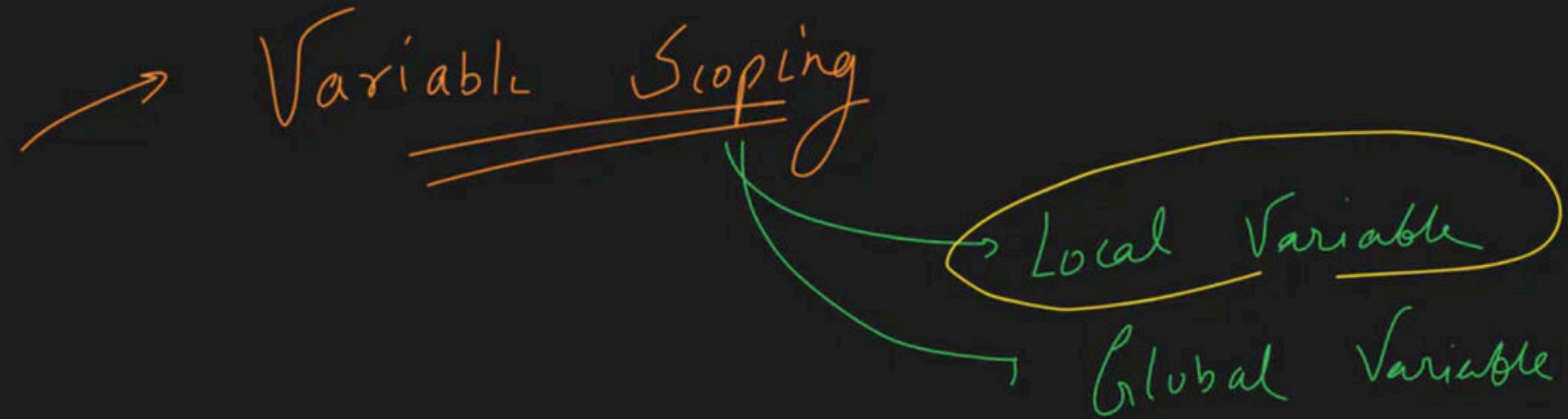


for (

{



}



main ()

{

for
{
int i = 0; i < 5; i++)

cout << i;

3

cout << i;

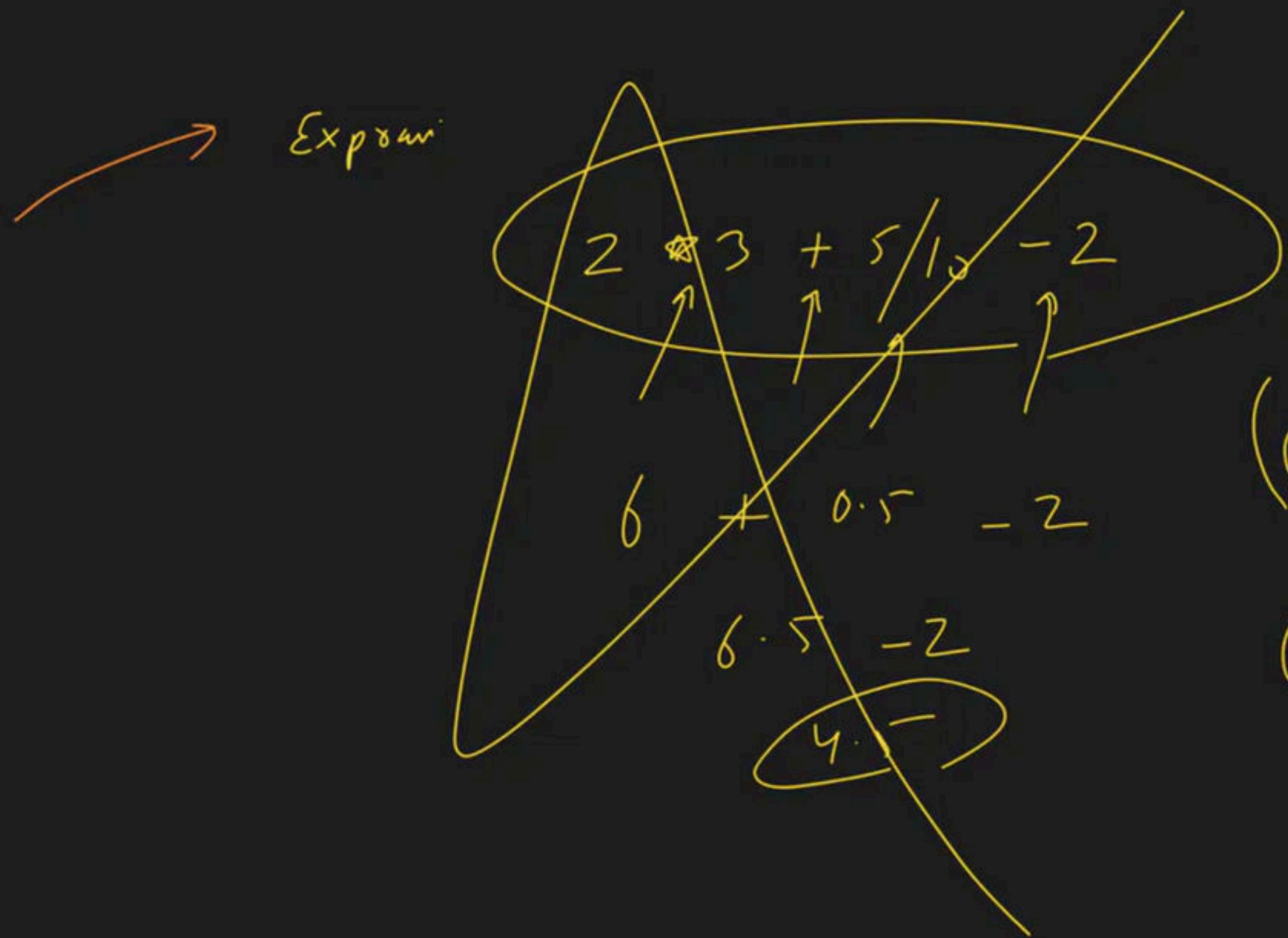


| min

goto



Expansion



15
m¹

$$\left(\frac{(2 * 3) + (5 / 10)}{6} \right) - 2$$
$$\left(\frac{6 + 0.5}{6} \right) - 2$$
$$6.5 - 2$$

4.5



Operator

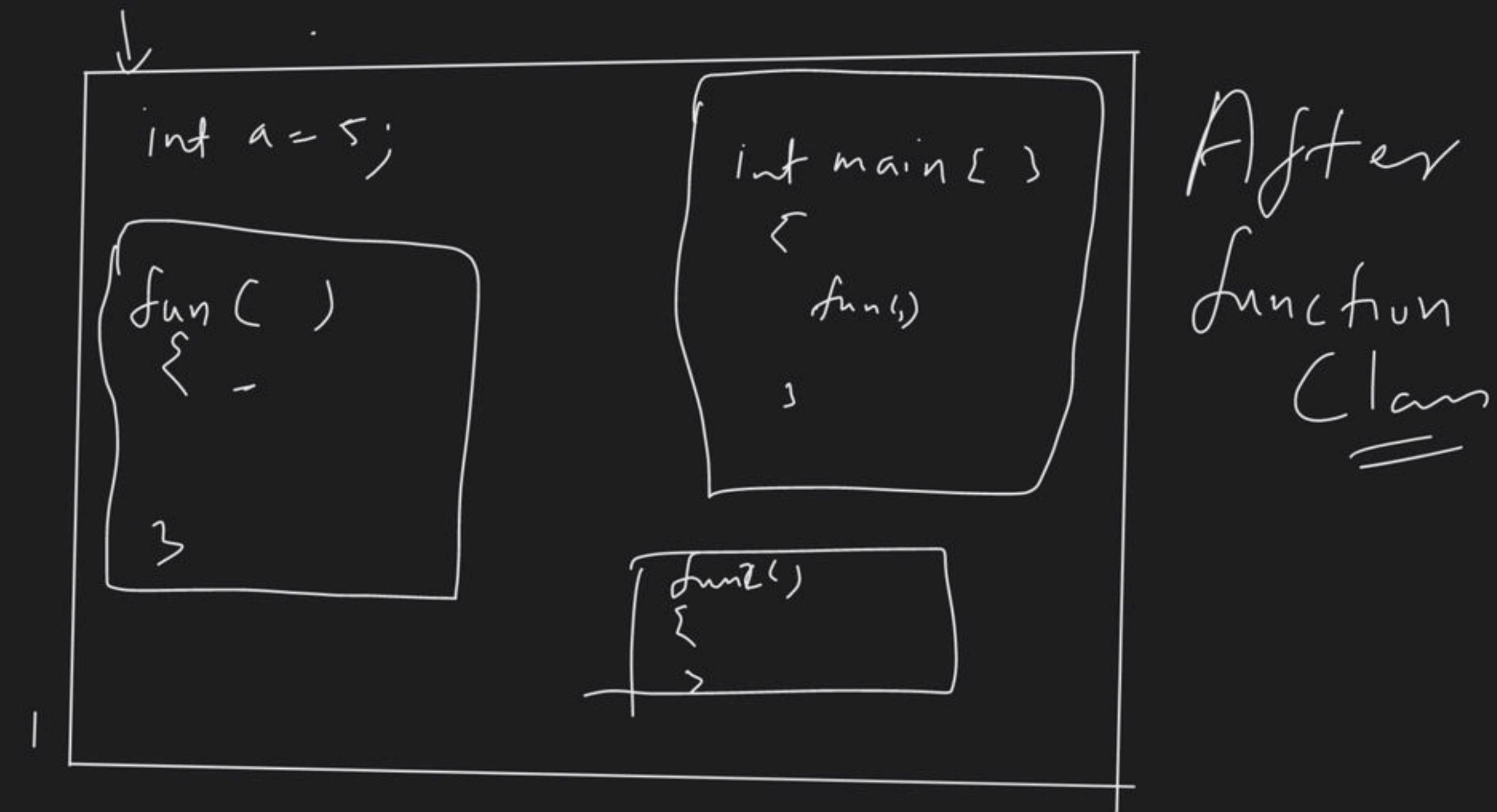
Precedence table

Use

Brackets



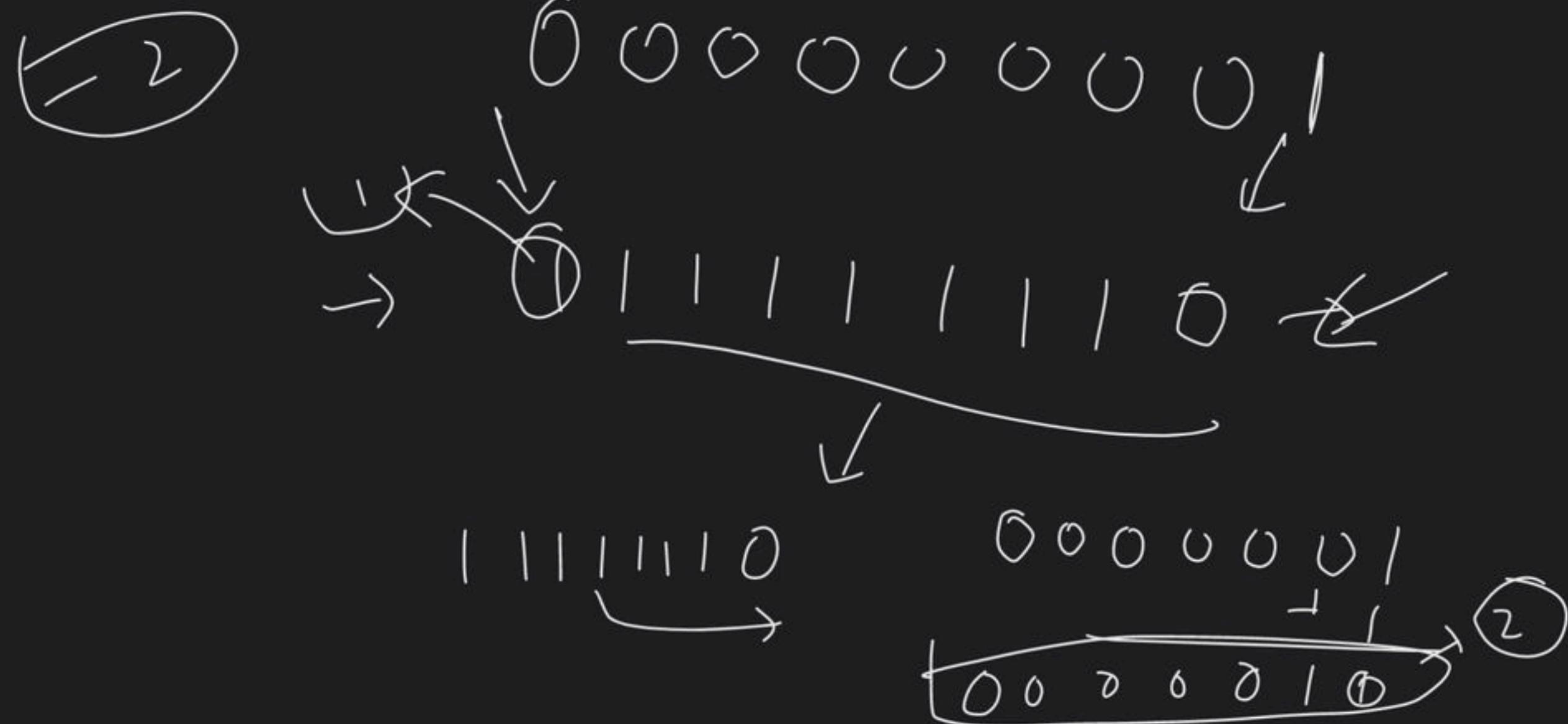
Global variable Why Bad?



OM

$b_{60}| \rightarrow 0/|$

$b_{50}| \Rightarrow \alpha = |$



1.cpp

2.cpp

3.cpp

1.0

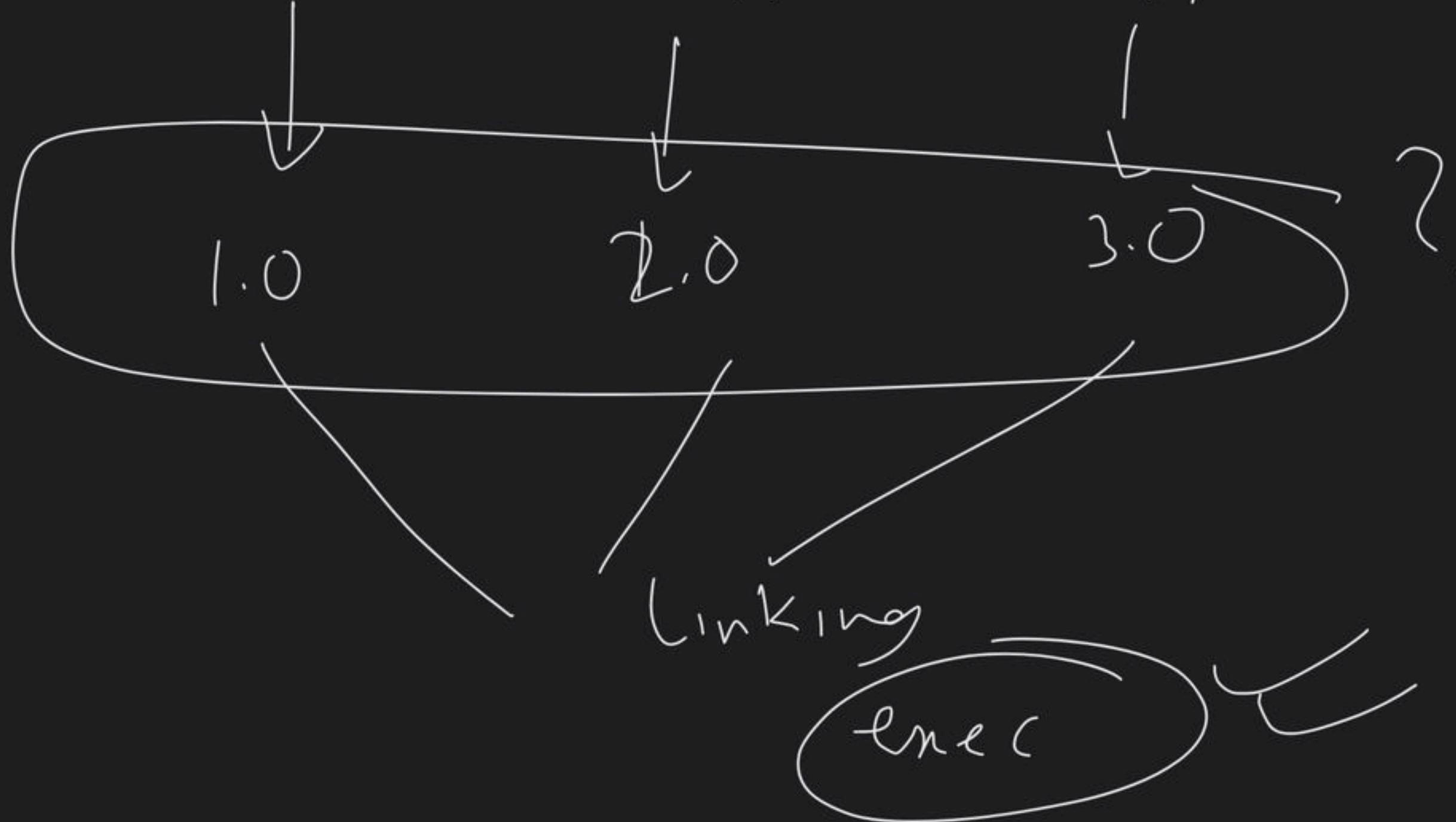
2.0

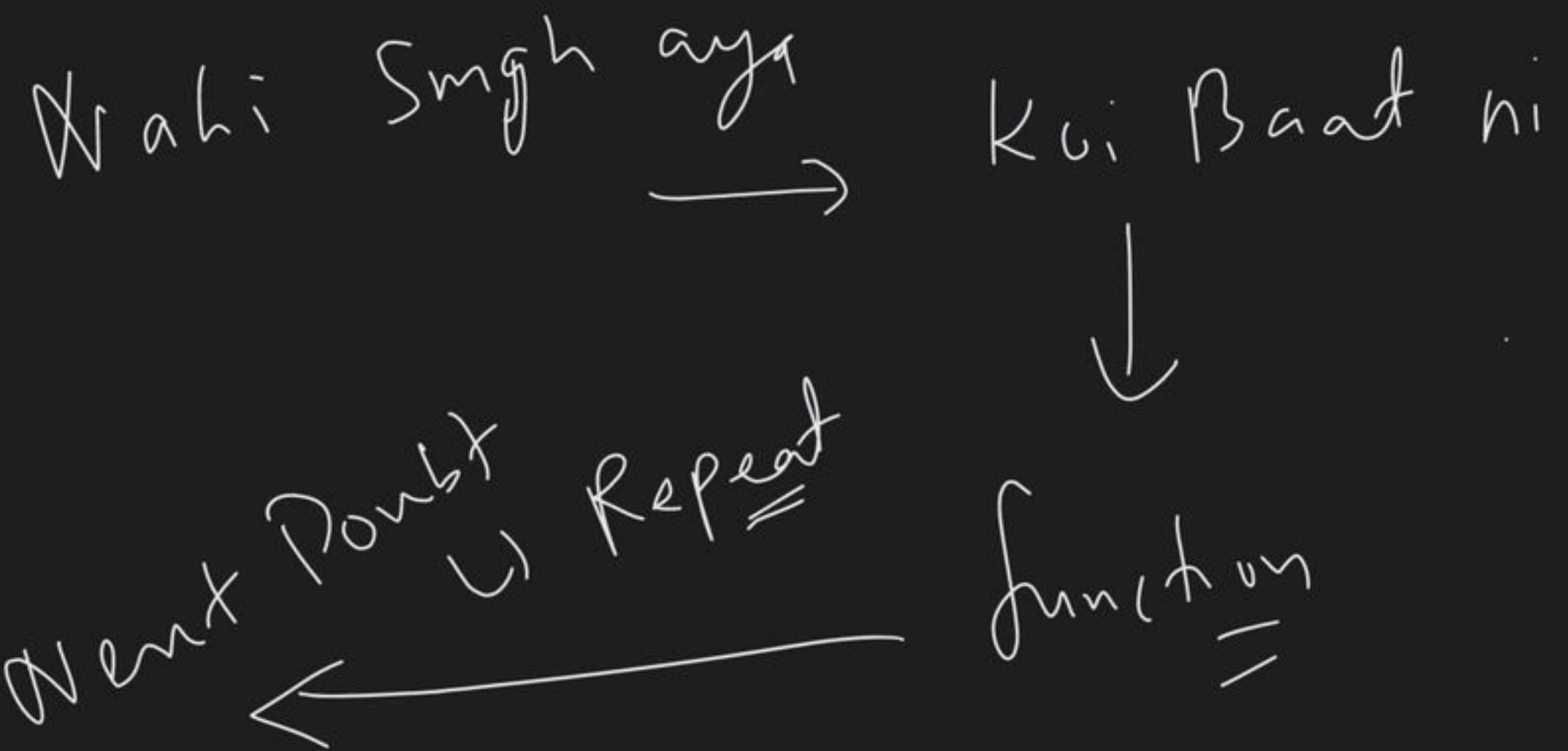
3.0

?

Linking

exec





\Rightarrow

1 1 1
1 0 1 0
1 0 0 1

$$\begin{array}{c} | \ a \ | \ | \\ b \ 0 \ 1 \ c \\ \hline \end{array} = \begin{array}{c} | \ \bar{a} \ | \ | \\ | \ \bar{b} \ \bar{c} \ 0 \ 1 \ \bar{c} \ 0 \\ \hline \end{array}$$

1 1 0 1

1 0 0 1

$$\begin{aligned} a &= 1 \\ b &= \emptyset 1 \\ c &= 0 \\ d &= \emptyset 1 \end{aligned}$$

1 1 1
1 0 1 0

0 0 0 1
1 0 0 1 X

a b c d
1 1 0 0

