

CS & IT ENGINEERING



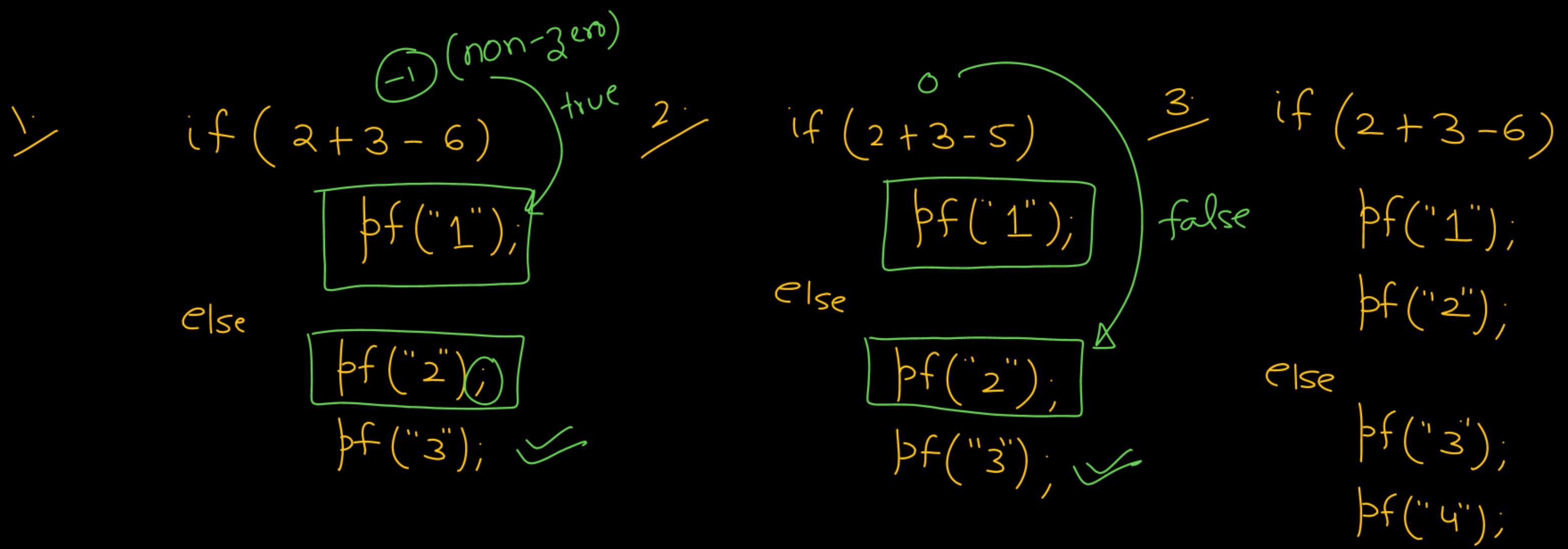
Programming in C
Chapter -2
Control Flow Statements
Lec- 02



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TOPICS TO BE COVERED

Iterative Statement-I



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3 if (2+3-6)

 | pf("1") ;

 | pf("2");

else

 | pf("3");

 | pf("4");



⇒

if (2+3-6)

{

 | pf ("1");

}

 | pf ("2");

else {

 | pf ("3");

}

 | pf ("4");

WAP to read a integer , if the no. is even then print Pankaj & if the no. is odd then print Sharma

if ($n \% 2 == 0$)

 |pf("Pankaj");

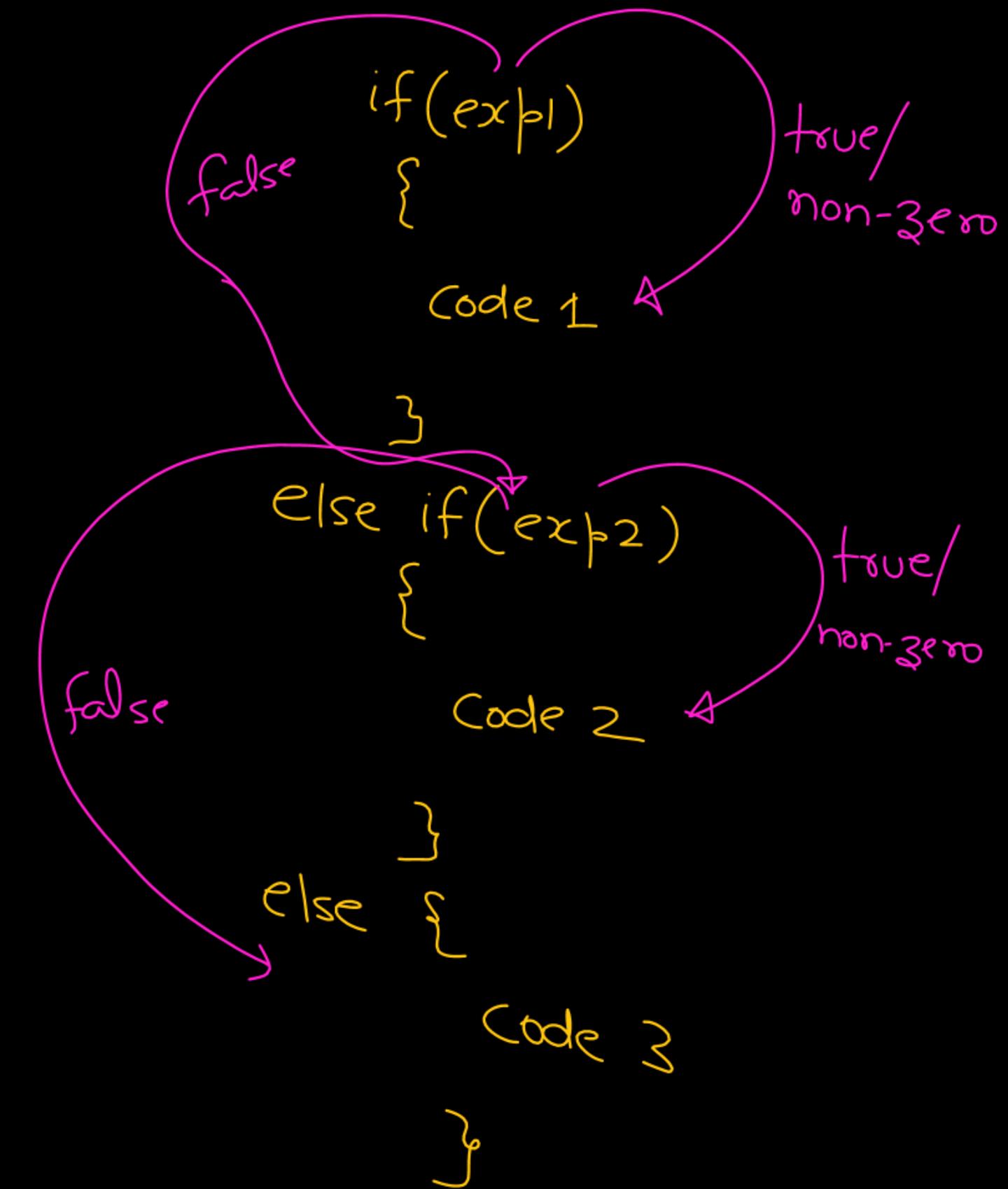
else

 |pf("Sharma");

WAP to read a no. →

- a) greater than 0 ⇒ print positive
- b) less than 0 ⇒ print Negative
- c) Equal to 0 ⇒ print zero

Either code1
or
Code 2
or
Code 3



```
if (!2)
    pf("Hello");
else if (2+3-5)
    pf("Dosto");
else
    pf("Ye Rawan Faculty hai");
```

Ye Rawan Faculty hai

```
if (12)
    pf("Hello"); X
if (2+3-5)
    pf("Dosto"); X
else
    pf("Rawan");
```

Rawan

```
if (2)  
    pf("2"); ✓  
  
if (3)  
    pf("3"); ✓  
  
if (4)  
    pf("4"); ✓
```

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if (^{true} 2)
 pf("2"); ✓

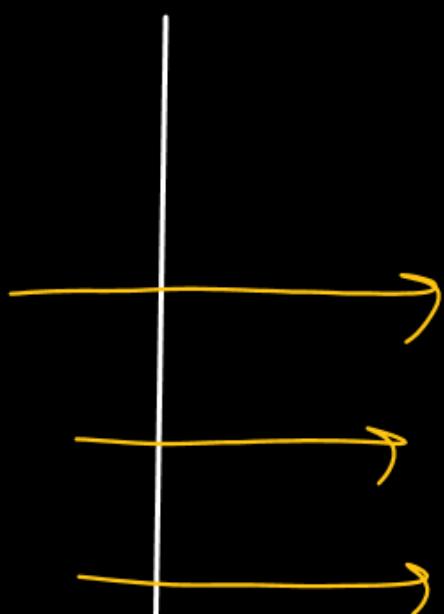
else if (3)
 pf("3"); ✗

else if (4)
 pf("4"); ✗

Objective

Code 1
or
Code 2
or
Code 3

```
int a, b, max ;  
pf("Enter 2 no");  
sf("./d./d", &a, &b);  
  
if(a>b)  
    max = a ;  
else  
    max = b ;  
pf("./d", max);
```



$$\text{max} = a > b ? a : b ;$$

$a, b, c \Rightarrow 3$ distinct no.

Largest

if ($\checkmark a > b \& \& a > c$)

$\text{pf}("d \text{ is largest"}, a); \checkmark$

if ($\underbrace{b > a \& \& b > c}$)

$\text{pf}("d \text{ is largest"}, b);$

if ($\underbrace{c > a \& \& c > b}$)

$\text{pf}("d \text{ is largest"}, c);$

$a = 30, b = 20, c = 10$

```
if(a>b && a>c )  
    pf(" /d is largest",a);  
else {  
    a is not largest  
    Either b  
    or  
    c  
    can be  
    largest  
}  
    if( b>c )  
        pf(" /d is largest", b);  
    else  
        pf(" /d is largest",c);  
}
```

3 distinct. $a, b, c \Rightarrow$ largest
false

max = $(a > b \&& a > c) ? a :$

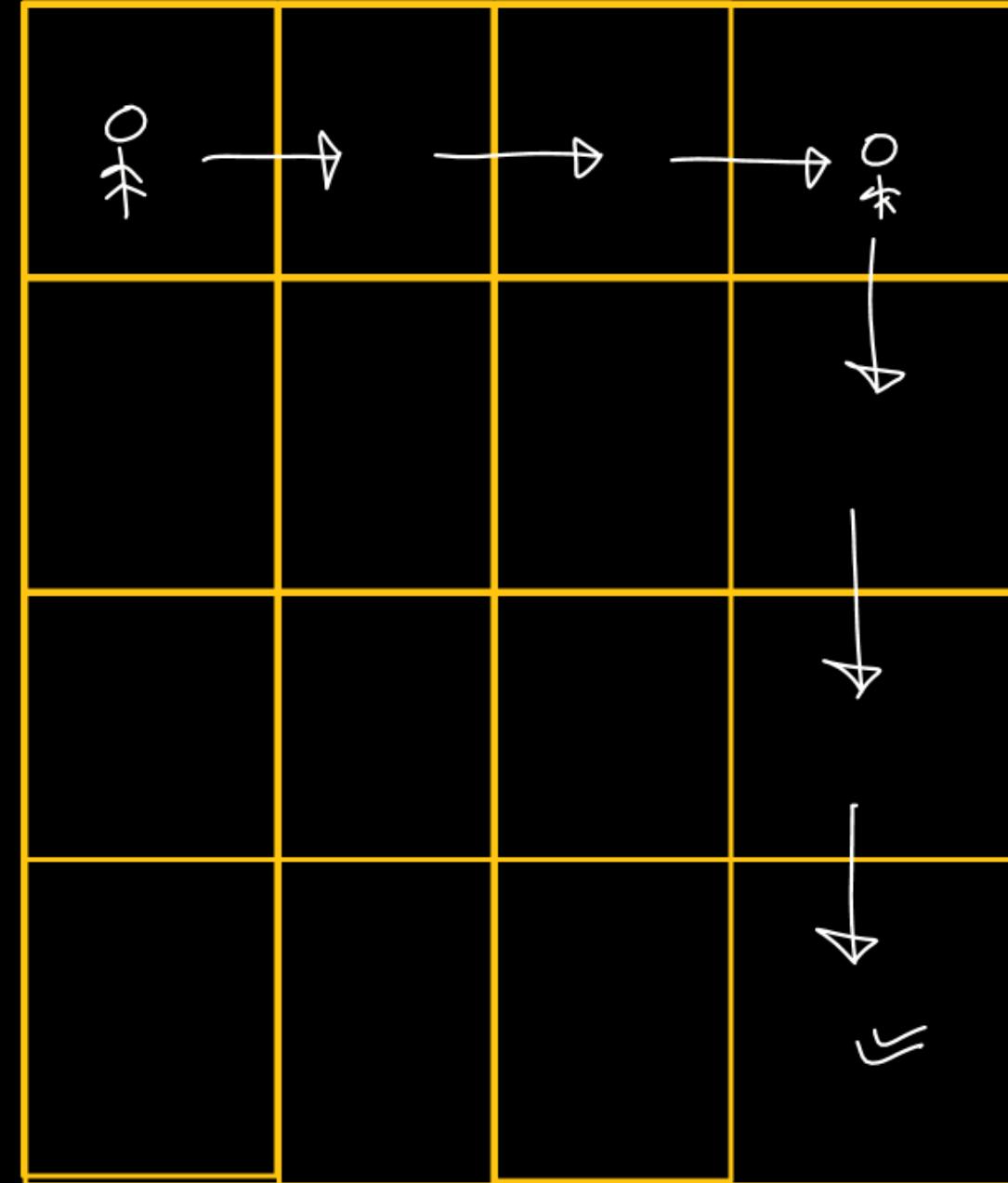
$b > c ? b : c ;$

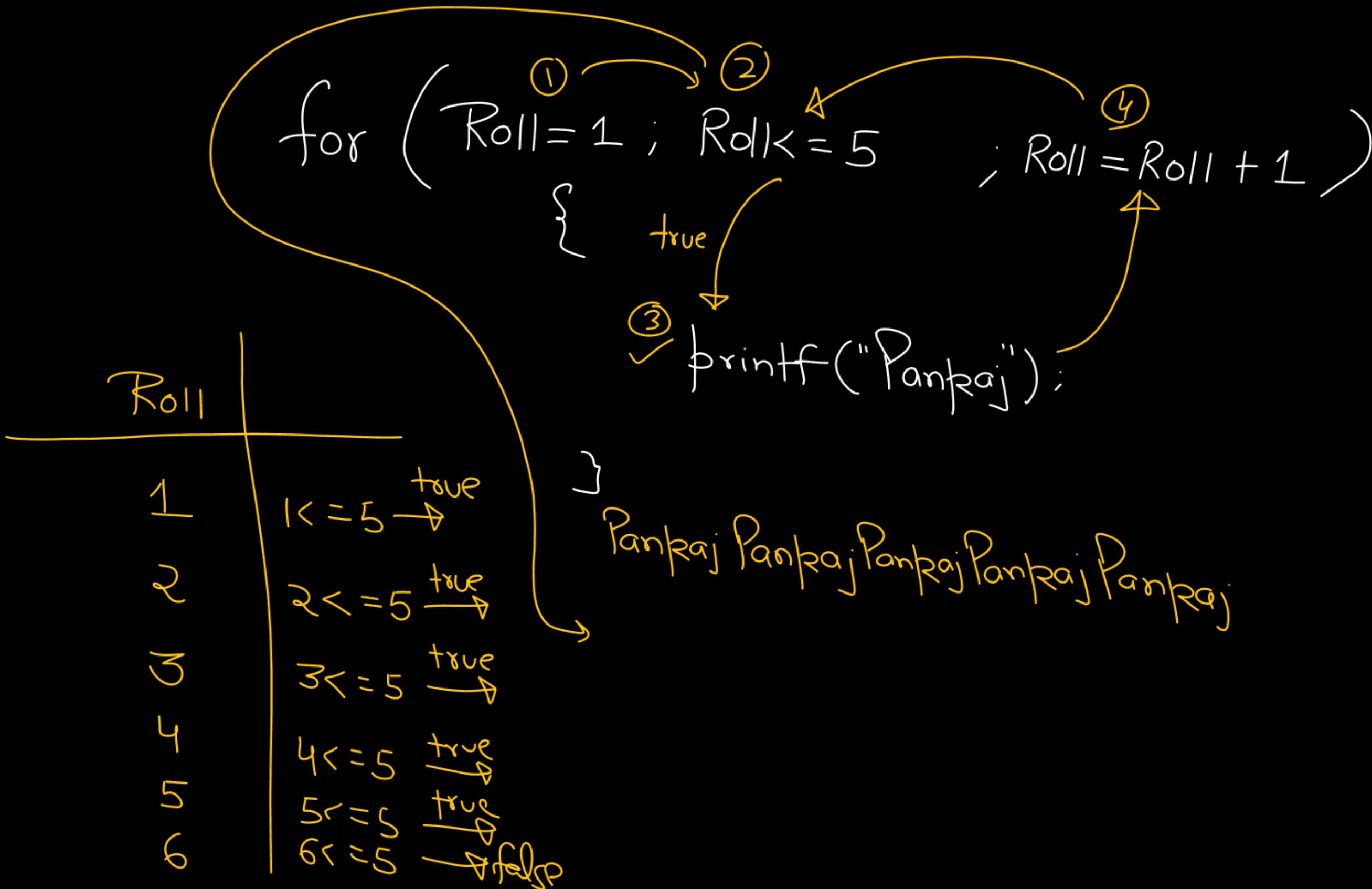
Iterative statement → using loops

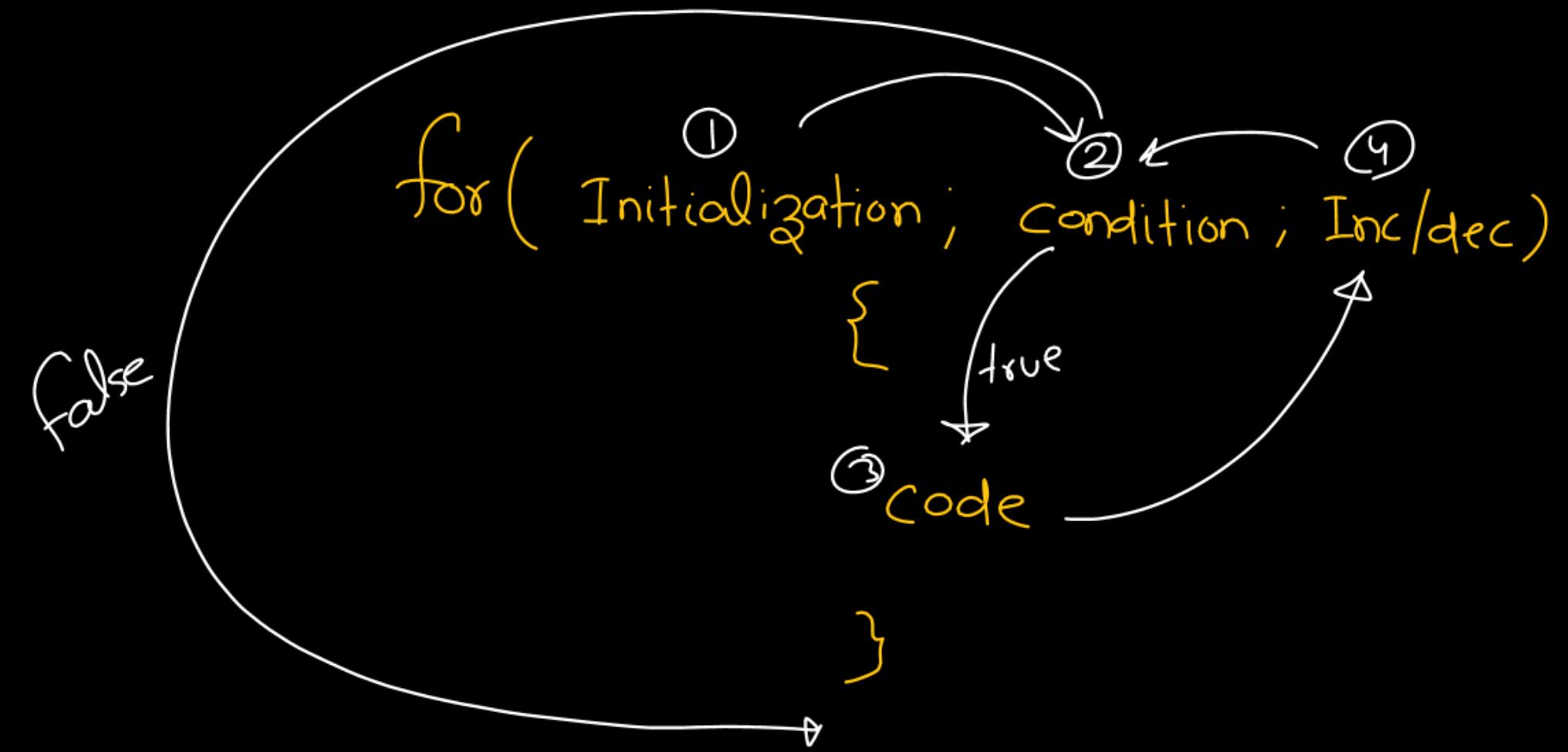
Go Right }
Go Right }
Go Right }

Go down }
Go down }
Go down }

right
down
Go Right 3 times
Go down 3 times







```
for (Roll = 1; Roll <= 5; Roll++)  
{  
    pf("Pankaj");  
}
```

$\text{Roll} = \underbrace{1, 2, 3, 4, 5}$

$\text{Roll} = 1 \quad 1 \leq 5 \quad \checkmark$

$\text{Roll} = 2 \quad 2 \leq 5 \quad \checkmark$

$\text{Roll} = 3 \quad 3 \leq 5 \quad \checkmark$

$\text{Roll} = 4 \quad 4 \leq 5 \quad \checkmark$

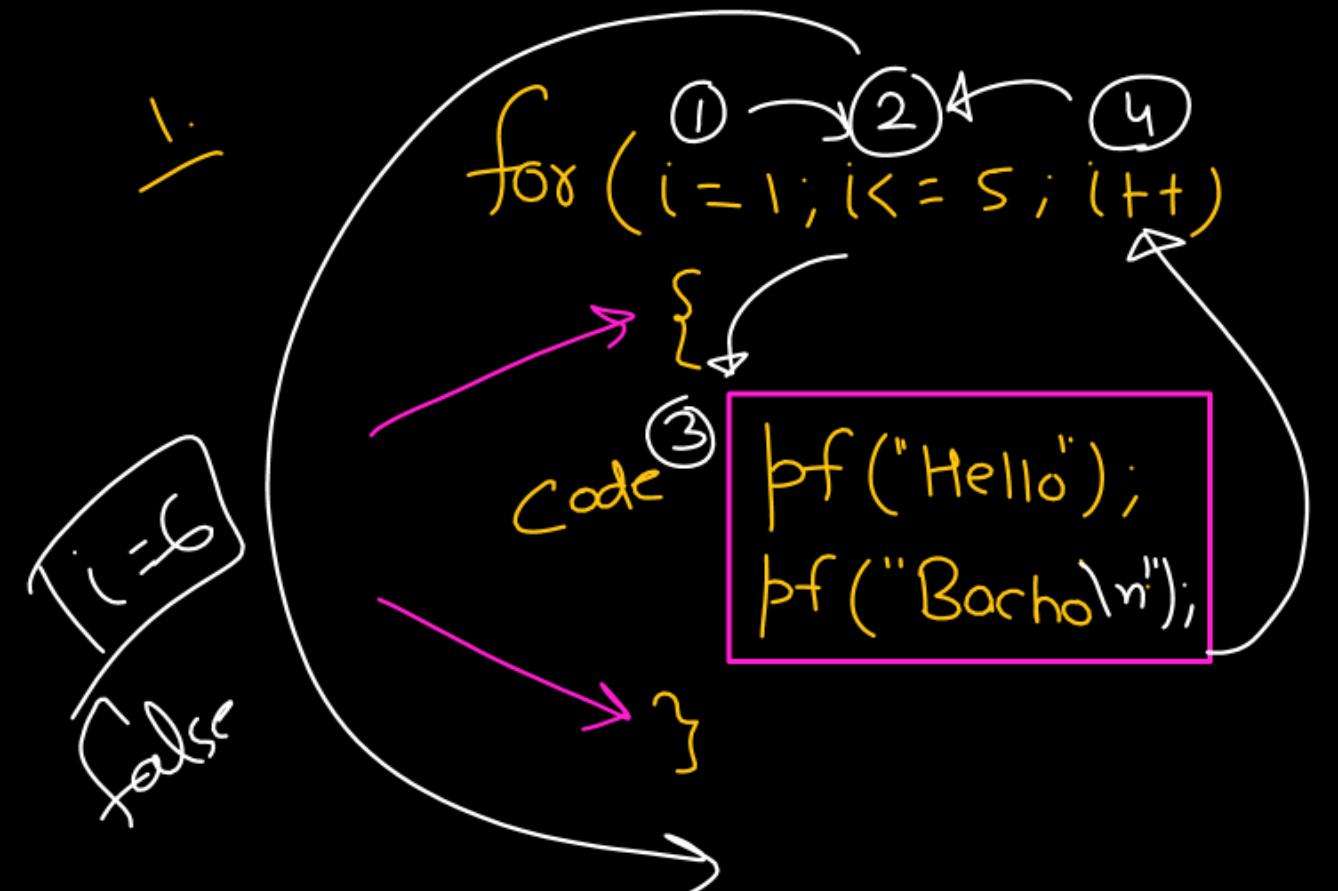
$\text{Roll} = 5 \quad 5 \leq 5 \quad \checkmark$

$\text{Roll} = 6 \quad 6 \leq 5 \quad \times$

1 for (Roll = 1 ; Roll <= 5 ; Roll++)
{
 printf("Pankaj");
}

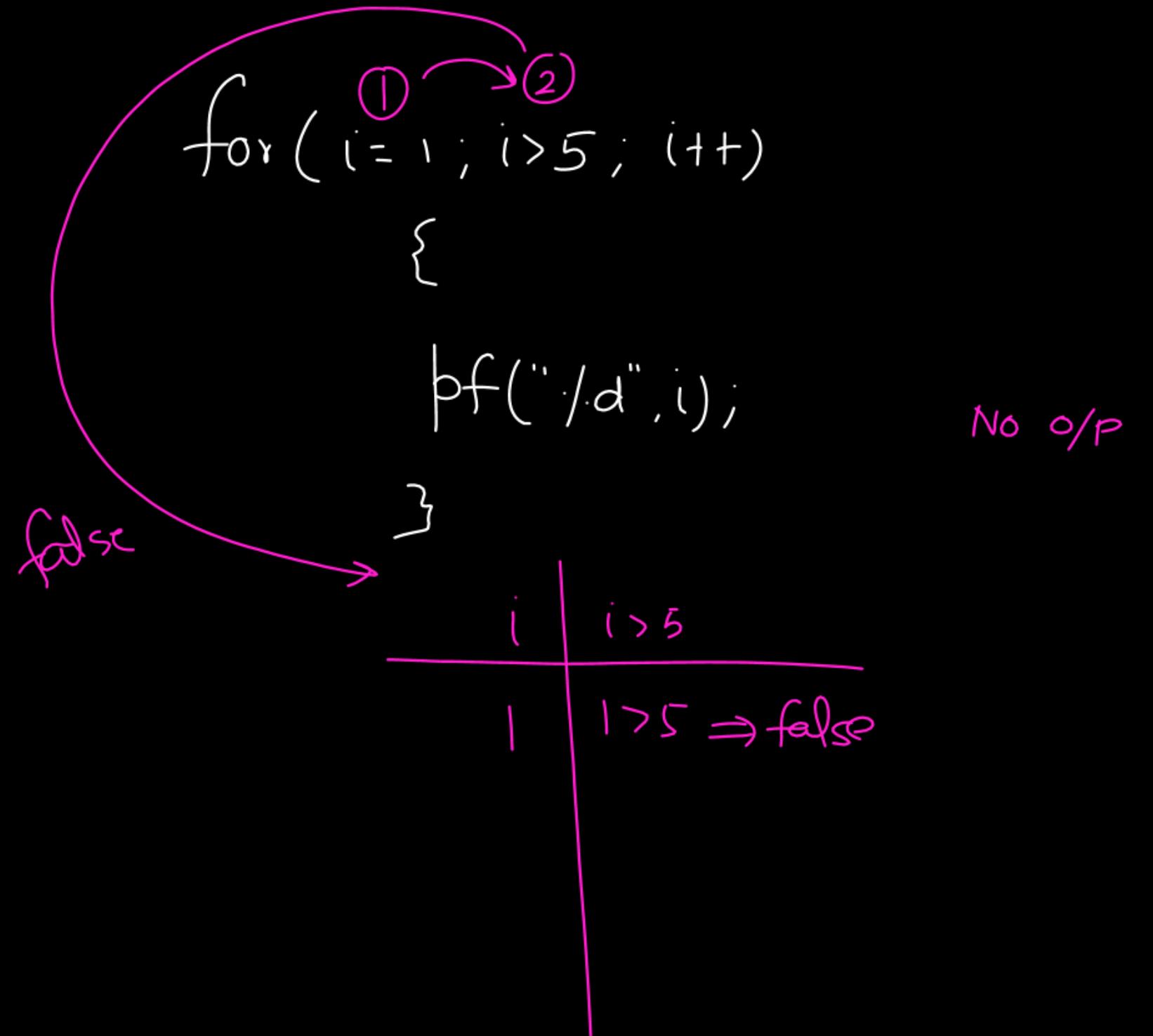
2 for (Roll = 6 ; Roll <= 10 ; Roll++)
{
 printf("Pankaj");
}

3 for (Roll = 16 ; Roll <= 20 ; Roll++)
{
 printf("Pankaj");
}



i	$i <= 5$
1	$1 <= 5 \xrightarrow{\text{true}} \checkmark$
2	$2 <= 5 \xrightarrow{\text{true}} \checkmark$
3	$3 <= 5 \xrightarrow{\text{true}} \checkmark$
4	$4 <= 5 \xrightarrow{\text{true}} \checkmark$
5	$5 <= 5 \xrightarrow{\text{true}} \checkmark$
6	$6 <= 5 \xrightarrow{\text{false}} \quad$

HelloBacho
HelloBacho
HelloBacho
HelloBacho
HelloBacho



Iteration

Zero

(false)

for (Expression1 ; Expression2 ; Expression3)

{

③ Code

Non-zero(true)

}

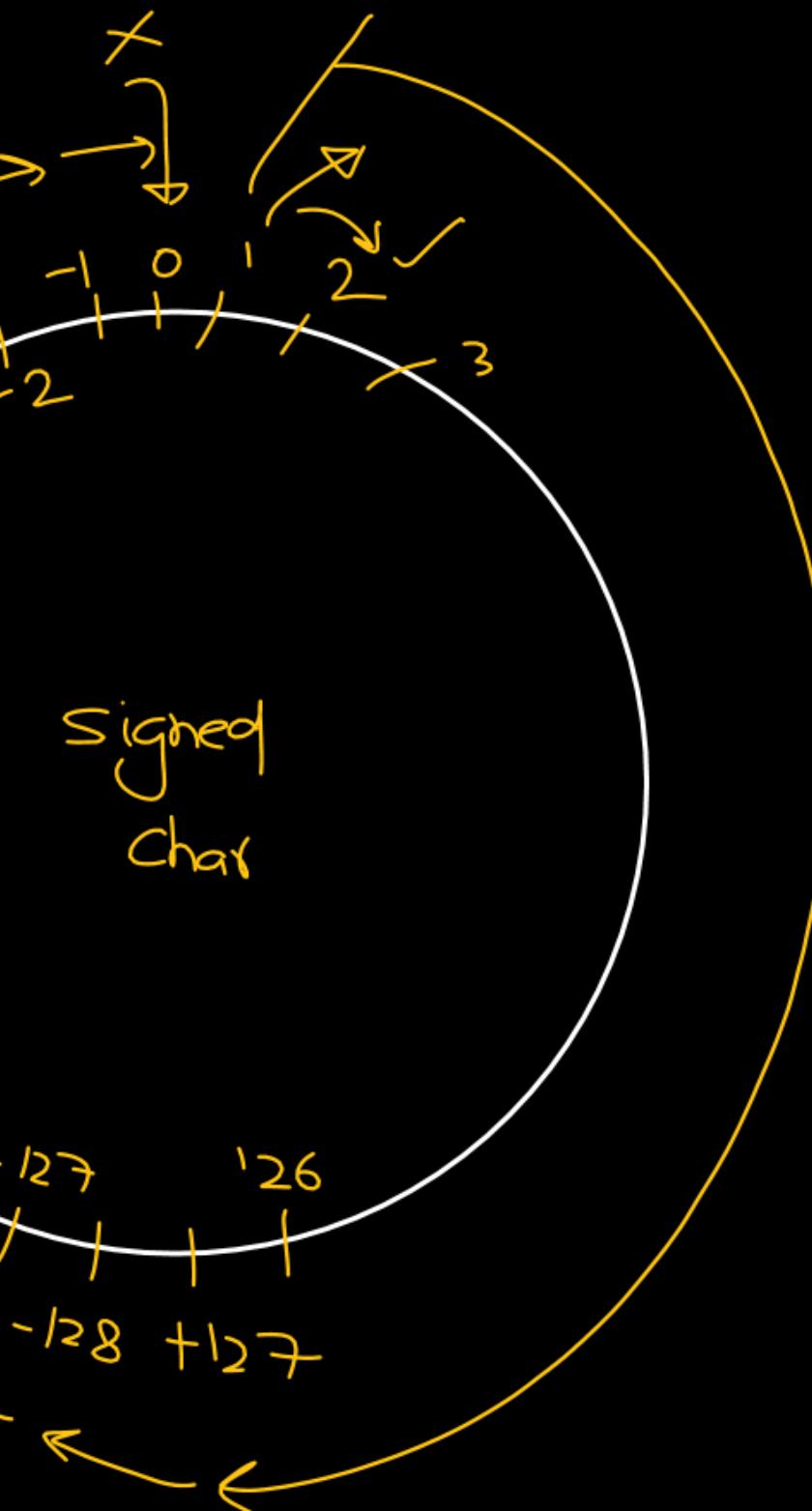
int i = 1;
 Q
 for (① 2 ; i <= 5 ; ④ 10)
 {
 ② true
 code ③ printf("%d", i);
 i = i + 2;
 }

O/P: 135

i	
1	$1 \leq 5 \rightarrow \text{true} \rightarrow \text{code}$ → pf 1 → $i = i + 2$
3	$3 \leq 5 \rightarrow \text{true} \rightarrow \text{code}$ → pf 3 → $i = i + 2$
5	$5 \leq 5 \rightarrow \text{true} \rightarrow \text{code}$ → pf 5 → $i = i + 2$
⑦	$7 \leq 5 \rightarrow \text{false}$

2 → signed
char ch = 1 ;
for (① → 1 → non-zero → true
 lo ; ch ; ch++)
{
 ↓
 printf("Hello");
}

ch = { 1, 2, 3, ... 127
 -128, -127, ... -1 }
255

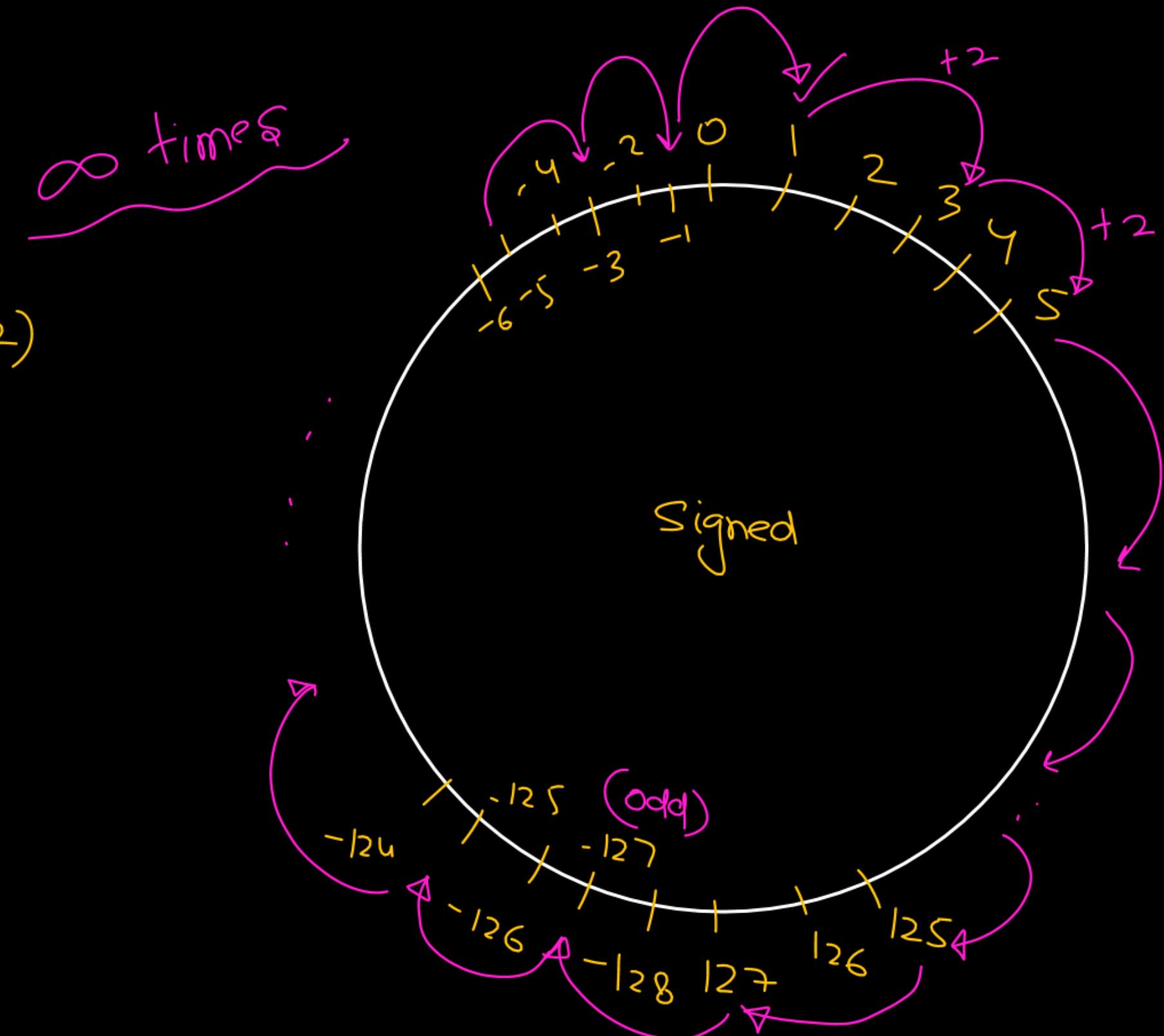


3:

```
char ch;  
for (ch=1; ch ; ch= ch+2)  
{
```

 bf("Hello");

}



```

i = 1;
for( printf("1"); i <= 4; printf("4"))
{
    printf("2");
    i = i + 1;
}
for (Exp1; Exp2; Exp3)
{
}

```

i	
1	✓
2	✓
3	✓
4	✓
5	✗

1 2 4 2 4 2 4

=
3

2

```
for(i=1; i<=5; i++)
```

```
    pf("Hello");
```

```
    pf("Bachol\n");
```

till first semi colon

Compiler

```
for(i=1; i<=5; i++)  
{  
    pf("Hello");
```

}

```
→ pf("Bachol\n");  
HelloHelloHelloHelloHelloBacho
```

-

