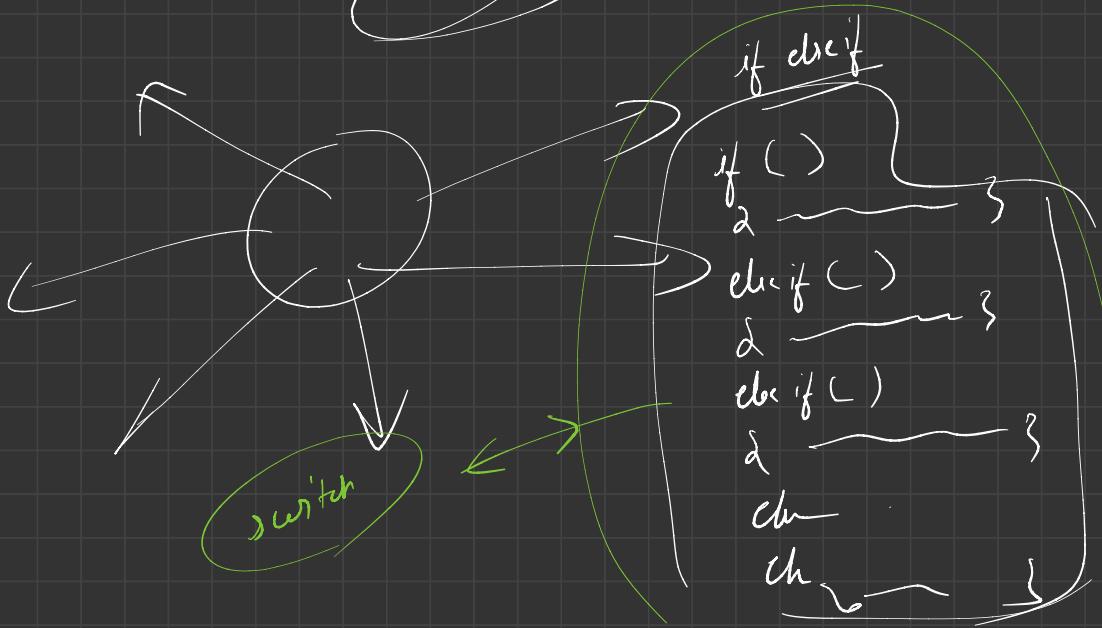
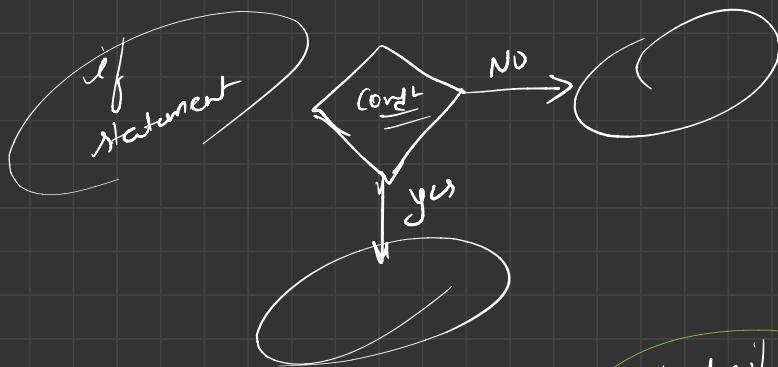
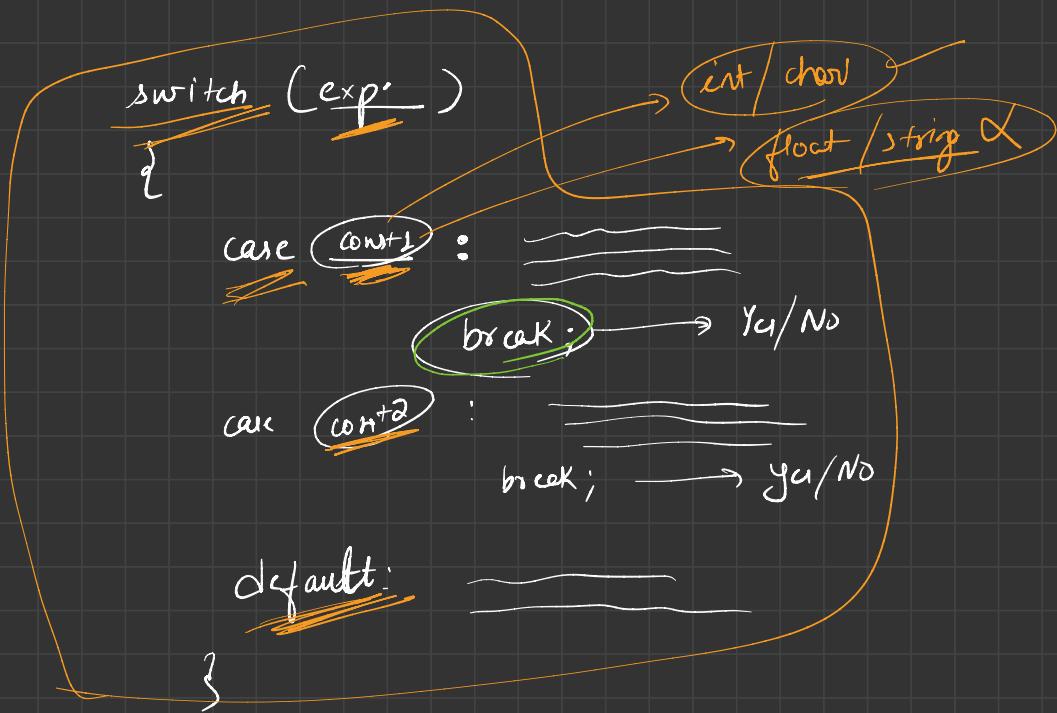
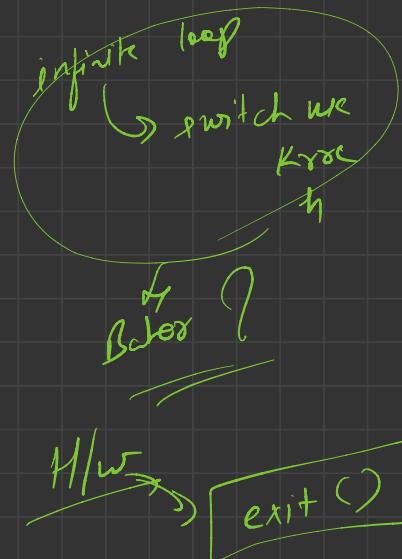
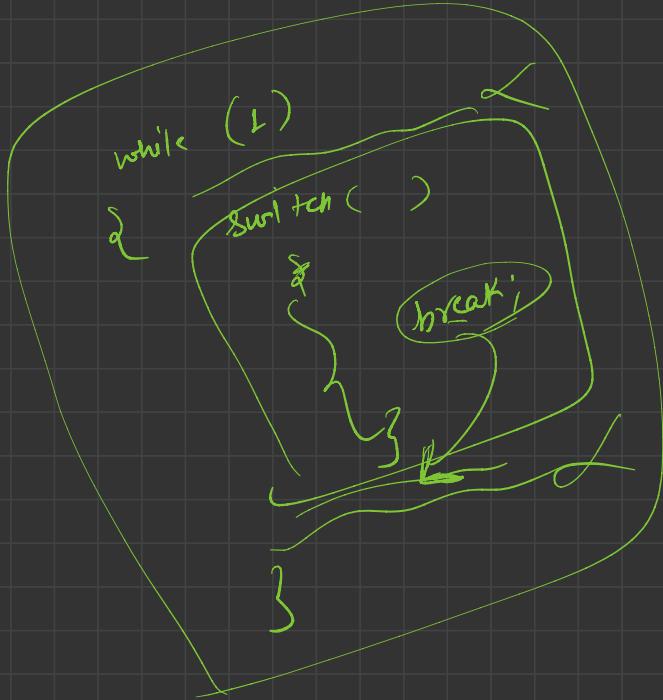
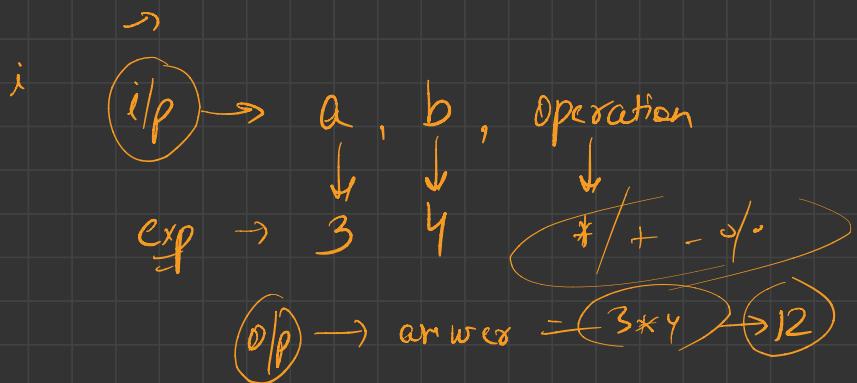
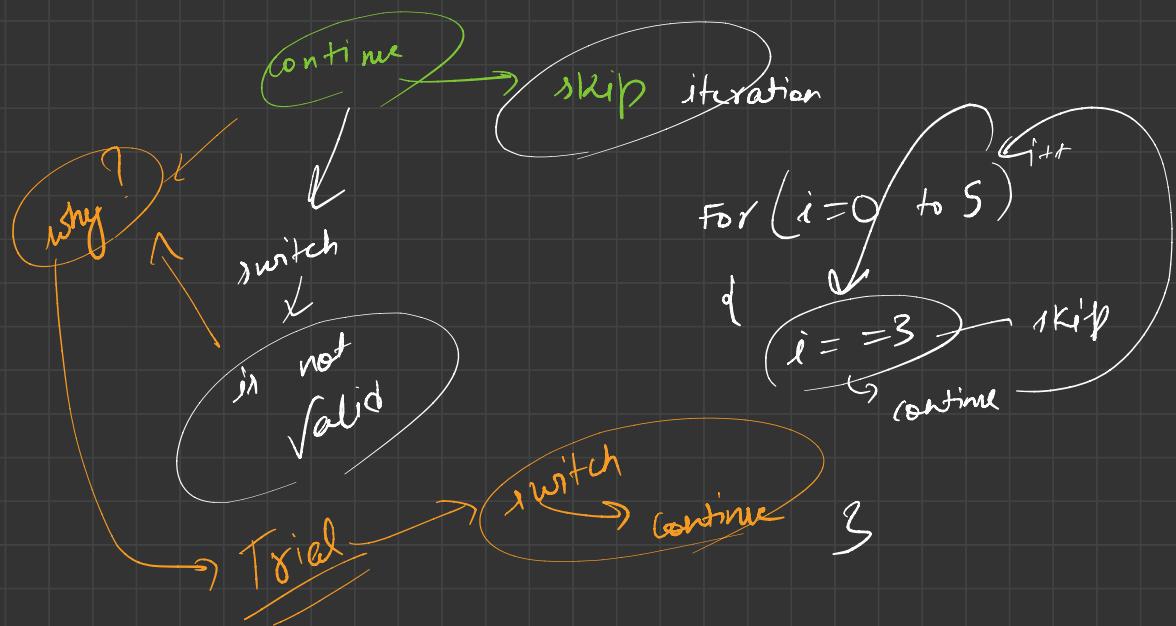



Switch or functions









Calculator program flow

H/w Question

$$\text{Total Amount} = 1330 \text{ ₹}$$

→ 100 ₹ notes
→ 50 ₹ notes
→ 20 ₹ notes
→ 1 ₹ notes

$$\frac{1330}{100} = 13$$

$$1330 - 1300 = 30 \text{ ₹}$$

$$\begin{aligned} 13 &\rightarrow 100 \text{ ₹} \\ 1 &\rightarrow 20 \text{ ₹} \\ 10 &\rightarrow 1 \text{ ₹} \end{aligned}$$

$$\frac{30}{20} = 1$$

$$1, \frac{30}{20} = 1, \quad 1, \frac{10}{1} = 10$$

$$30 - 20 = 10$$

switch statement
↓
Program

$$100 \rightarrow x
50 \rightarrow y
20 \rightarrow z
1 \rightarrow a$$

Functions

if

Func → o/p

well
defined
text

program

well
defined
text

$a \rightarrow$

$2^3 =$

$$2^3 = [2 \times 2 \times 2]$$

ans = 1

for ($i \rightarrow 3$)

↓

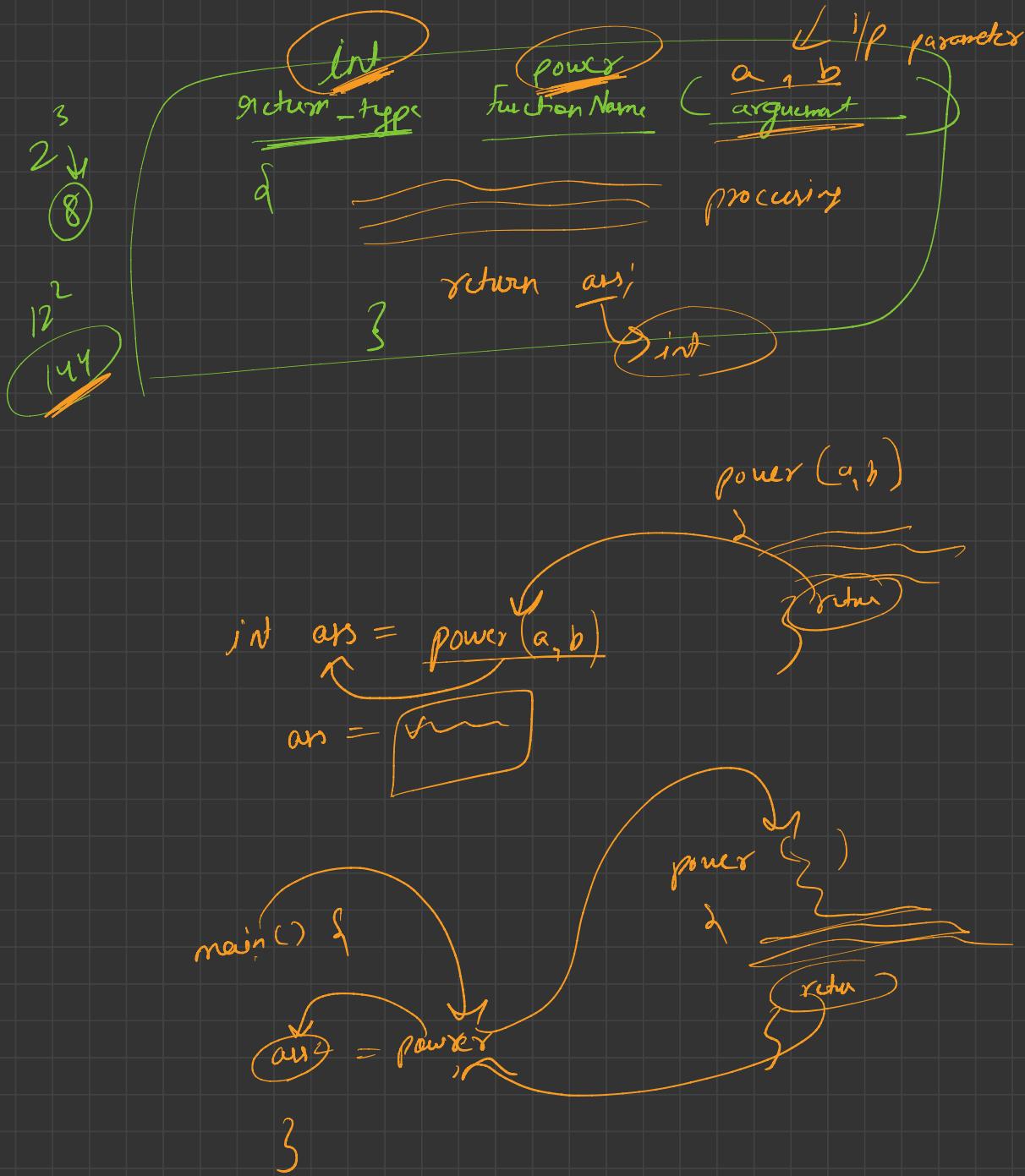
ans = ans * a

3

Bulky

Buggy

Readable



$${}^n C_r = \frac{n!}{r!(n-r)!}$$

i/p $\rightarrow n, r$

o/p $\rightarrow {}^n C_r$

${}^n C_0 \rightarrow L$

$${}^8 C_2 = \frac{8!}{2! \times (8-2)!} = \frac{8!}{2! \times 6!}$$

$$\begin{aligned} {}^8 C_0 &= \frac{8!}{0! \times (8-0)!} \\ &= \frac{8!}{1 \times 8!} = 1 \end{aligned}$$

$$= \frac{8 \times 7}{2} = 28$$

main()

& $(n) \quad (r)$

// call

$cout \ll {}^n C_r (n, r)$

$n C_r (n, r)$

&

factorial

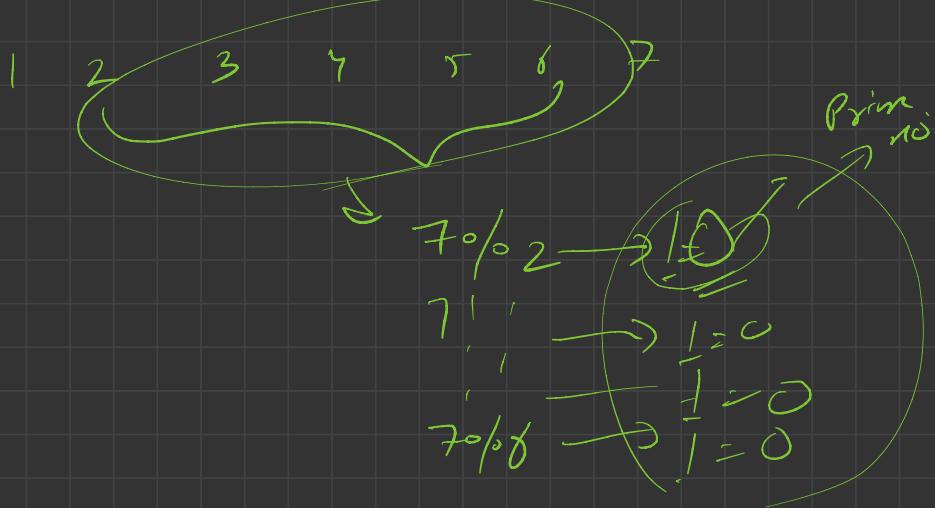
return ans;

factorial ()

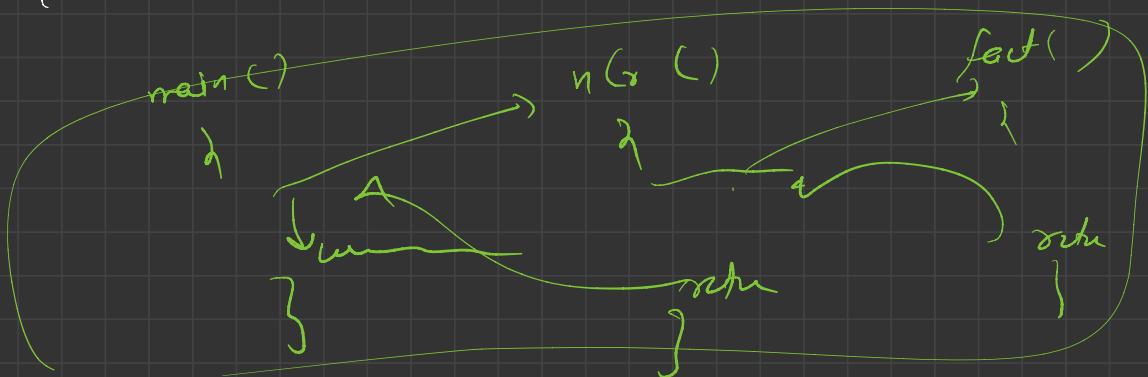
return ans;

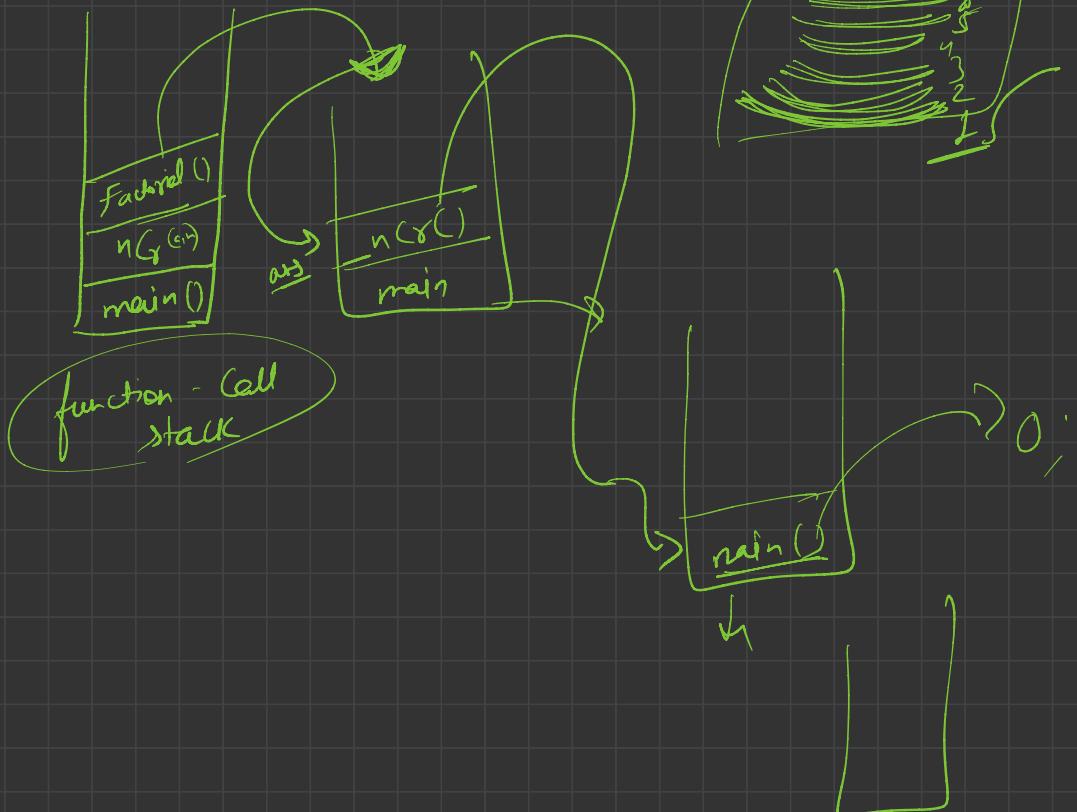
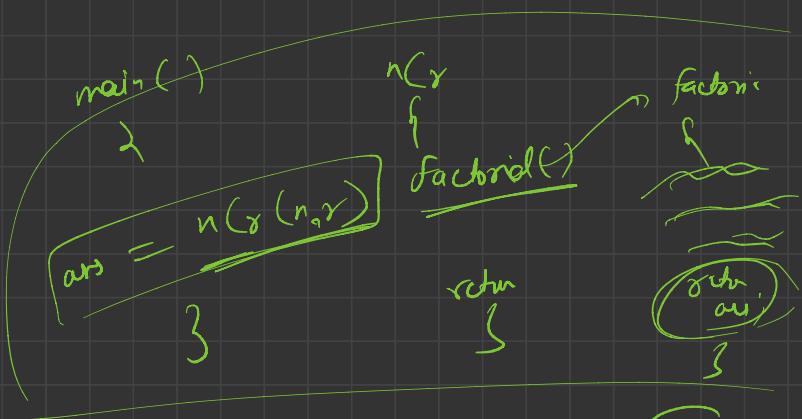
?

(7) → Va/VO



return_type functionName () → i/p argument parameter
void int / char / float / string /
} } return





$$+/\cancel{w} \rightarrow A \cdot P = (3 * n + 7)$$

$$\begin{aligned} i/p \rightarrow n &\rightarrow 3 \\ o/p \rightarrow n^{\text{th}} \text{ term} & \rightarrow 3 \times 3 + 7 \\ &\rightarrow 9 + 7 \\ &\rightarrow 16 \end{aligned}$$

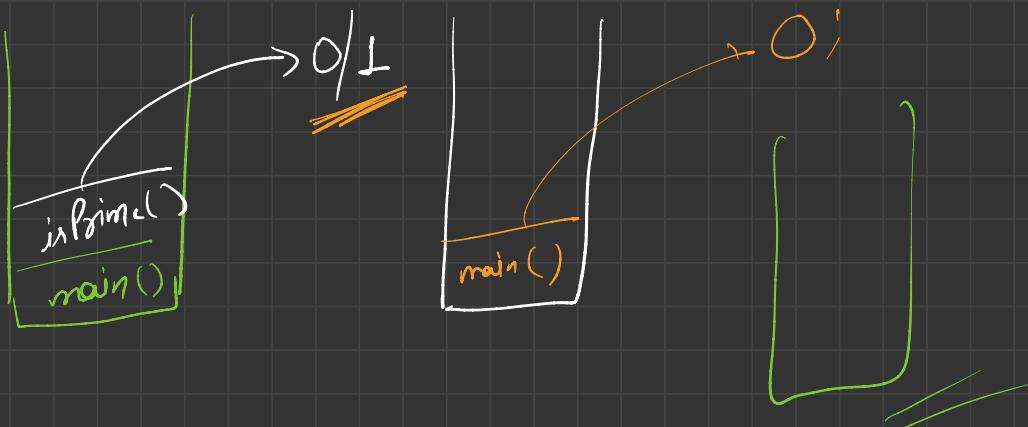
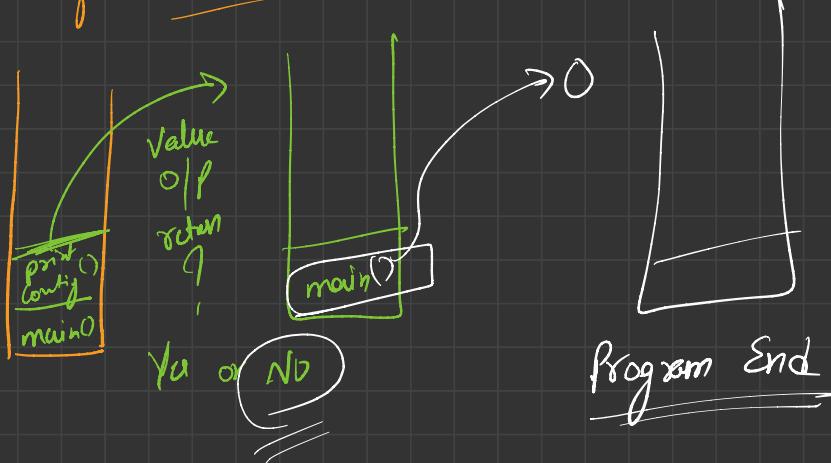
$$\begin{aligned} \xrightarrow{i/p} ab & \\ o/p \rightarrow & \left(\text{Total no of set bit in } a \oplus b \right) \\ a = 2 \rightarrow & 10 \\ b = 3 \rightarrow & 11 \rightarrow 3 \quad \underline{\underline{3}} \end{aligned}$$

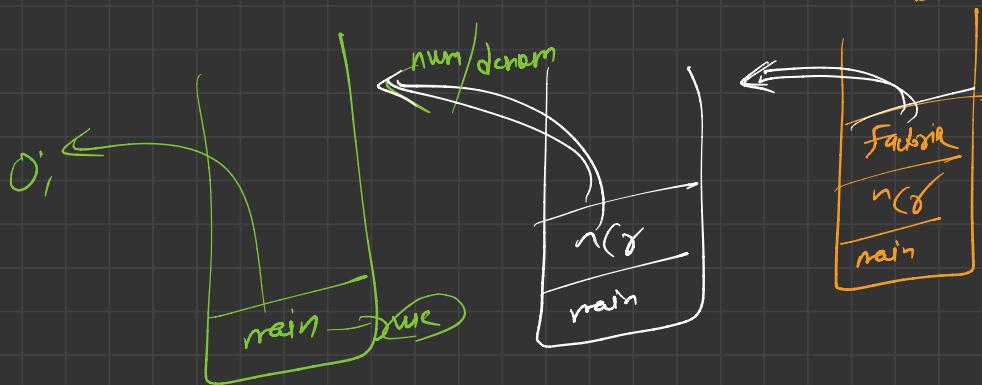
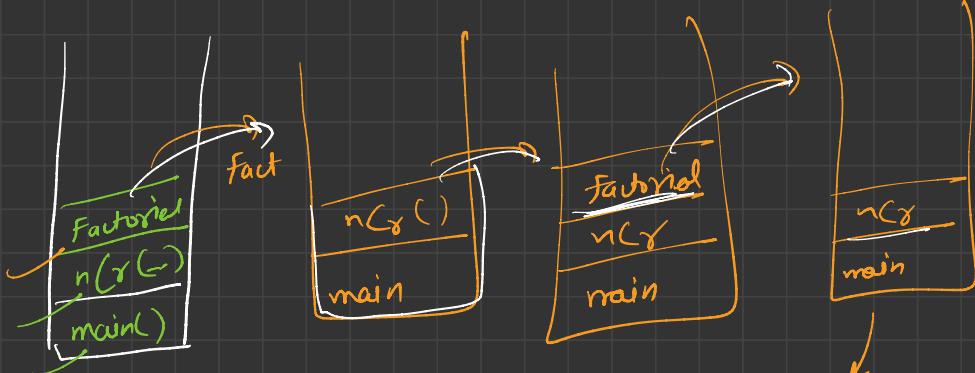
$$\begin{aligned} \textcircled{3} & \\ \text{fibonacci} & \\ i/p \rightarrow n & \\ o/p \rightarrow n^{\text{th}} \text{ Fibonacci no} & \end{aligned}$$

$$0, 1, 1, 2, \textcircled{3}, 5, 8, 13, \dots$$

$$\begin{aligned} n=5 & \\ o/p \rightarrow 3 & \end{aligned}$$

→ function call





→ Pass by Value

