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## Assignment Start - 1

Ans 2.  $P = 10$ , Result = 0,  $i = 1$

if  $i > P$   
 $1 > 10 \Rightarrow \text{No}$

$$\text{Result} = 0 + 1 = 1$$

$$i = 1 + 1 = 2$$

if  $i > P$ .  
 $2 > 10 \Rightarrow \text{No}$

$$\text{Result} = 1 + 1 = 2$$

$$i = 2 + 1 = 3$$

if  $i > P$   
 $3 > 10 \Rightarrow \text{No}$ .

$$\text{Result} = 2 + 1 = 3$$

$$i = 3 + 1 = 4$$

$\therefore$  for we will be operating between  
above two condition until unless  
 $i = 11$ .

and for every  $i$ , result is  $\frac{i-1}{2}$

so for  $i = 12$

$$\text{result} = 10$$

| output = 10 = res = result |

Ans 2

$$i = 0$$

$$i < 20$$

$$0 < 20 \Rightarrow \text{Yes}$$

$$i = i + 2$$

$$\boxed{i = 0 + 2} \quad i = 2$$

$$i < 20$$

$$2 < 20 \Rightarrow \text{Yes}$$

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

$$\boxed{i = 4} = 4 + 2 = 6$$

$$i < 20$$

$$6 < 20 \Rightarrow \text{Yes}$$

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

$$\boxed{i = 8} = 8 + 2 = 10$$

Hence, we'll be iterating the condition until  $i = 20$ , it offers that

We will print  $i$ , that is 20, i means not and

$$\therefore \boxed{\text{output} = i = 20}$$

Therefor  $\Rightarrow$  at  $\Rightarrow$  prints

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Q/ Ans N = 5, a = 1, b = 1

$$b \Rightarrow b * a \Rightarrow 1 * 1 \Rightarrow 1.$$

if  $a == N$  ?  
 $1 == 5$ ? No.

$$a = a + 1 \Rightarrow 1 + 1 \Rightarrow 2$$

$$b = b * a \Rightarrow 1 * 2 \Rightarrow 2$$

if  $2 == 5$ ? No..

$$a = a + 1 \Rightarrow 2 + 1 \Rightarrow 3$$

$$b = b * a \Rightarrow 1 * 3 \Rightarrow 3$$

So, Here we will iterate the condition till  $a = 5$ , and for every

$a$ ,  $b$  is also the same; now

after getting  $a = 5$ , we will also get  $b = 5$ .

$\therefore$  Output =  $b = 5$

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Ans 4

$$N=5, i=1, \text{fact} = 1.$$

$$\text{if } i \leq n \Rightarrow 1 \leq 5 \text{ ? Yes}$$

$$\text{fact} = \text{fact} * i = 1 * 1 = 1 \quad (1)$$

$$i = i + 1 = 1 + 1 = 2 \quad (2)$$

$$\text{if } i \leq n \Rightarrow 2 \leq 5 \text{ ? Yes.}$$

$$\text{fact} = \text{fact} * i = 1 * 2 = 2 \quad (2)$$

$$i = i + 1 = 2 + 1 = 3 \quad (3)$$

$$\text{if } i \leq n \Rightarrow 3 \leq 5 \text{ ? Yes.}$$

$$\text{fact} = \text{fact} * i = 2 * 3 = 6 \quad (6)$$

$$i = i + 1 = 3 + 1 = 4 \quad (4)$$

$$\text{if } i \leq n \Rightarrow 4 \leq 5 \text{ ? Yes.}$$

$$\text{fact} = \text{fact} * i = 6 * 4 = 24 \quad (24)$$

$$i = i + 1 = 4 + 1 = 5 \quad (5)$$

$$\text{if } i \leq n \Rightarrow 5 \leq 5 \text{ ? Yes.}$$

$$\text{fact} = \text{fact} * i = 24 * 5 \Rightarrow 120 \quad (120)$$

$$j = j + 1 = 5 + 1 = 6$$

is  $i \leq n \Rightarrow 6 \leq 5$ ? No.

print fact  $\Rightarrow$  output = 120

$$\underline{\text{Ans5.}} \quad \text{num} = 371, \quad \text{sum} = 0 \\ n = \text{num} = 371$$

is  $n >= 1 \Rightarrow 371 >= 1$ ? Yes.

$$\text{rem} = n \bmod 10 \Rightarrow 371 \bmod 10 \Rightarrow 1$$

$$\text{sum} = \text{sum} + (\text{rem}^3) \Rightarrow 0 + (1)^3 \Rightarrow 1$$

$$n = n / 10 \Rightarrow 371 / 10 \Rightarrow 37$$

is  $n >= 1 \Rightarrow 37 >= 1$ ? Yes.

$$\text{rem} = n \bmod 10 \Rightarrow 37 \bmod 10 \Rightarrow 7$$

$$\text{sum} = \text{sum} + (\text{rem}^3) \Rightarrow 1 + (7)^3 \Rightarrow 344$$

$$n = n / 10 \Rightarrow 37 / 10 \Rightarrow 3$$

is  $n >= 1 \Rightarrow 3 >= 1$ ? Yes.

$$\text{rem} = n \bmod 10 \Rightarrow 3 \bmod 10 \Rightarrow 3$$

$$\text{Sum} = \text{Sum} + (\text{rem}^3) \Rightarrow 344 + (3)^3 \Rightarrow 371$$

$$n = n/10 \Rightarrow 3/10 \Rightarrow 0.3$$

if  $n \geq 1 \Rightarrow 0.3 \geq 1$ ? No.

if  $\text{num} = \text{sum} \Rightarrow 371 = 371$ ? Yes.

Point - number is Armstrong.

X

Ansl num = 370, sum = 0, n = num = 370

if  $n \geq 1 \Rightarrow 370 \geq 1$ ? Yes

$$\text{rem} = n \bmod 10 \Rightarrow 370 \% 10 \Rightarrow 0$$

$$\text{Sum} = \text{Sum} + (\text{rem}^3) \Rightarrow 0 + 0 \Rightarrow 0$$

$$n = n/10 \Rightarrow 370/10 \Rightarrow 37$$

if  $n \geq 1 \Rightarrow 37 \geq 1$ ? Yes

$$\text{rem} = n \bmod 10 \Rightarrow 37 \% 10 \Rightarrow 7$$

$$\text{Sum} = \text{Sum} + (\text{rem}^3) \Rightarrow 0 + (7)^3 \Rightarrow 343$$

$$n = n/10 \Rightarrow 37/10 \Rightarrow 3$$

if  $n >= 1 \Rightarrow 3 >= 1$  ? Yes.

$$\text{rem} = n \bmod 10 \Rightarrow 3 \% 10 \Rightarrow 3$$

$$\text{sum} = \text{sum} + (\text{rem}^3) \Rightarrow 343 + (3)^3 \Rightarrow 370$$

$$n = n/10 \Rightarrow 3/10 \Rightarrow 0.3$$

if  $n >= 1 \Rightarrow 0.3 >= 1$  ? No.

if  $\text{num} = \text{sum} \Rightarrow 370 = 370$  ? Yes.

Print-number is Armstrong.

Ans  $\Rightarrow n = 23$ , T = True/Yes, F = False/No.

$$i = 2$$

$i < n \Rightarrow 2 < 23$  ? Yes.

$$n \% i == 0 \Rightarrow 23 \% 2 == 0$$
 ? No.

$$i = i + 1 \Rightarrow i = 2 + 1 \Rightarrow 3$$

$i < n \Rightarrow 3 < 23$  ? Yes.

$$n \% i == 0 \Rightarrow 23 \% 3 == 0$$
 ? No.

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

$i < n \Rightarrow 4 < 23 ?$  Yes.

$23 \% 4 = 20 \Rightarrow$  No.

$$i = i + 1 \Rightarrow 4 + 1 \Rightarrow 5$$

So, here, we will be iterating till we reach -

$i = 23$ , because only when the condition ( $n \% i = 0$ ) will return 'Yes' / True. - after that

$$i = n \Rightarrow 23 = 23 \Rightarrow \text{Yes.}$$

[Output  $\Rightarrow$  front "No. is prime".]

Ans?  $n = 16$ , T = True / Yes, F = False / No.

$$i = 2,$$

$i < n \Rightarrow 2 < 16 ?$  Yes.

$$n \% i == 0 \Rightarrow 16 \% 2 == 0 \quad \text{Yes.}$$

$i == n \Rightarrow 2 == 16 ? \quad \text{No.}$

[output = Print "No. is not prime"]

Ans 9.  $x = 60, y = 36,$

$$y = 0 ? \Rightarrow 36 = 0 ? \quad \text{No.}$$

$$x = y \Rightarrow [x = 36]$$

$$y = x \% y \Rightarrow 36 \% 36 \Rightarrow 0$$

$$y = 0 ? \Rightarrow 0 = 0 ? \quad \text{Yes.}$$

[Answer if  $x = \text{Answer if } 36$

i + m1 - result

i + i - i

Date

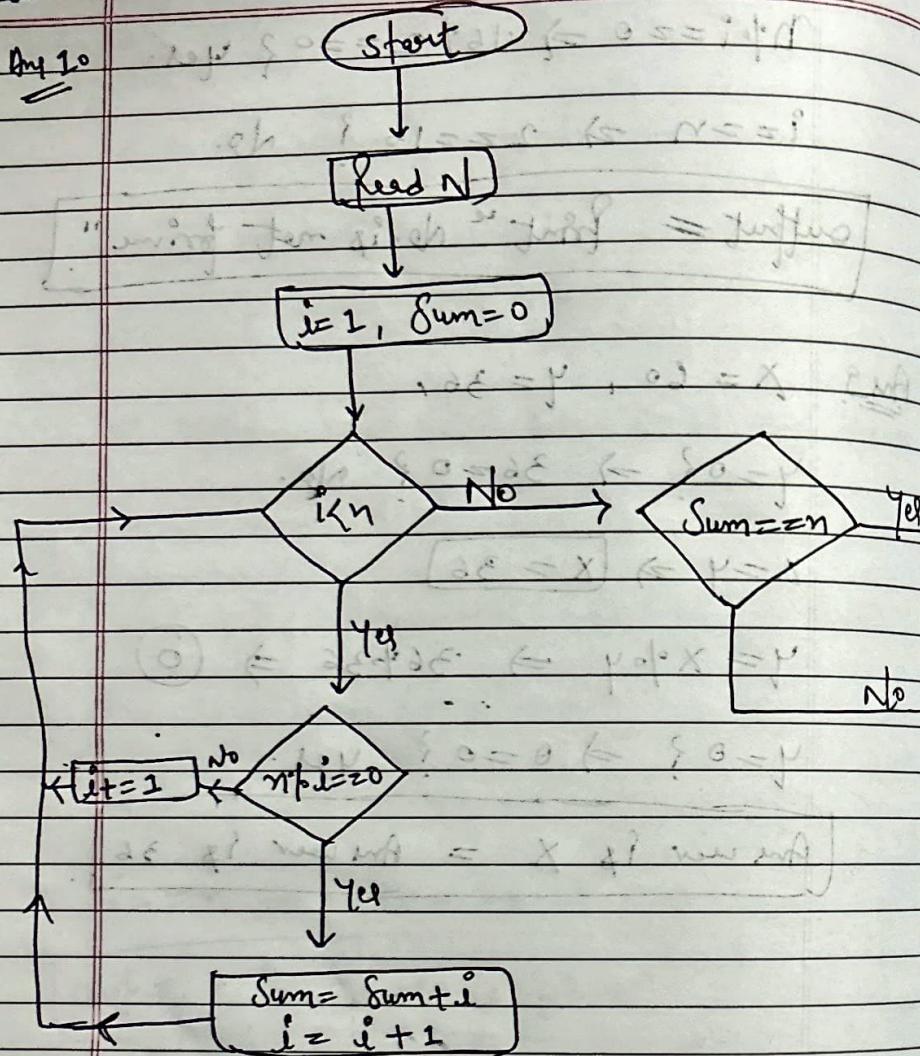
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(Thank you)  
DSA Anna Sir.  
(your student Kartik)