



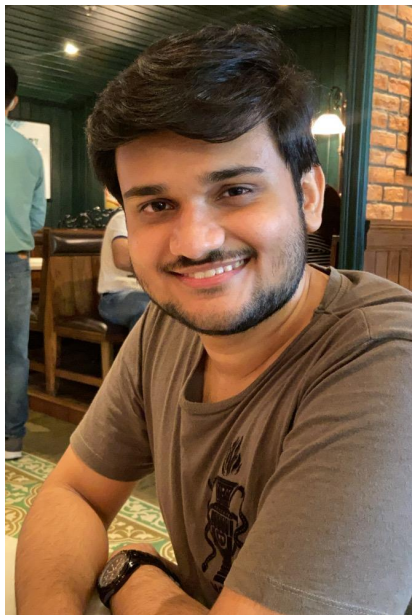
Loops

With Sanket Singh

Let's crack Competitive Programming together!



Sanket Singh



- Software Development Engineer @ **LinkedIn**
- Former Software Developer @ **Interviewbit/Scaler**
- Former Product Engineer @ **Coding Blocks**
- Cracked **Google** Summer Of Code 2019 under **Harvard University**
- Offers From **Linkedin, Sprinklr, Dunzo, Works Application(Singapore), Interviewbit, Grofers, Splash Learn**
- **No. 1** Educator in Unacademy Competitive Programming Track
- Former Research Intern @ **ISRO (Indian Space Research Organisation)**
- Taught 7,500+ programmers in Data Structures, Algorithms and Fundamentals of Computer Science
- Got **Rank 1** in Codechef Long Challenges
- Won **Infosys** Digital Make-a-thon



1. To check whether the last digit of a number **num** is 8 or not, which of the following condition will be appropriate?

- A. `if (num // 8 == 0)`
- B. `if (num % 10 == 8)`
- C. `if (num % 8 == 0)`
- D. `if (num / 10 == 8)`



1. To check whether the last digit of a number **num** is 8 or not, which of the following condition will be appropriate?

- A. `if (num // 8 == 0)`
- B. `if (num % 10 == 8)`**
- C. `if (num % 8 == 0)`
- D. `if (num / 10 == 8)`



2. If x is a factor of N then $N // x$ is another factor.

A. False

B. True



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A. False

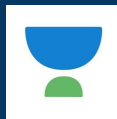
B. True

let $y = n // x$, since n is divisible by x so $x * y = n \Rightarrow x = n / y$ it means n is also divisible by y .



3. Which is the correct way to find the second last digit of any integer x ?

- A. $x\%(10^{**}2)$
- B. $(x//10)\%10$
- C. $(x//100)\%10$
- D. $(x\%100)//10$



3. Which is the correct way to find the second last digit of any integer x ?

- A. $x\%(10^{**}2)$
- B. $(x//10)\%10$
- C. $(x//100)\%10$
- D. $(x\%100)//10$

$X\%100$ gives last two digits number (say y). So we can write y as $10*\text{num1} + \text{num2}$

(where $\text{num1}, \text{num2} < 10$)
 num1 is the second last digit, which we got dividing y by 10



4. If x is a factor of N then $N // x$ is another factor.
As factors always occur in pair, so all numbers
will have even number of distinct factors.

- A. False
- B. True



4. If x is a factor of N then $N // x$ is another factor.
As factors always occur in pair, so all numbers
will have even number of distinct factors.

- A. False
- B. True

Since it may happen that $n//x$
 $== x$.



5. For the following series:

$$4 + 7 + 4 + 7 + 4 + 7 + \dots$$

What should be the condition for the term T to change it from 4 to 7 or from 7 to 4?

A. $T = 28 - T$

B. $T = 28 * T$

C. $T = 28 // T$

D. $T = 28 + T$



5. For the following series:

$$4 + 7 + 4 + 7 + 4 + 7 + \dots$$

What should be the condition for the term T to change it from 4 to 7 or from 7 to 4?

Since $28/7 == 4$

A. $T = 28 - T$

B. $T = 28 * T$

C. $T = 28 // T$

D. $T = 28 + T$



6. How many numbers greater than $x/2$ can be factors of x (x is a positive integer)?

- A. $x/2$
- B. 1
- C. 0
- D. 2



6. How many numbers greater than $x/2$ can be factors of x (x is a positive integer)?

A. $x/2$

B. 1

C. 0

D. 2

If any number greater than $x/2$ (let y) then $y^2 > x$ so it means $x/y < 2$ so there is only one possibility that y divides x and the condition is $x/y == 1$



7. Gcd(greatest common divisor) of the following numbers 3434, 342, 898, 1, 34 is

- A. 1
- B. 34
- C. 342
- D. 3434



7. Gcd(greatest common divisor) of the following numbers 3434, 342, 898, 1, 34 is

A. 1

B. 34

C. 342

D. 3434

If we take gcd of any number with one we always got 1.



8. What will be the 99th term of this series?

1, 2, 3, 4, 10, 5, 6, 7, 8, 26, 9, 10...

- A. 78
- B. 79
- C. 80
- D. 99



8. What will be the 99th term of this series?

1, 2, 3, 4, 10, 5, 6, 7, 8, 26, 9, 10...

A. 78

B. 79

C. 80

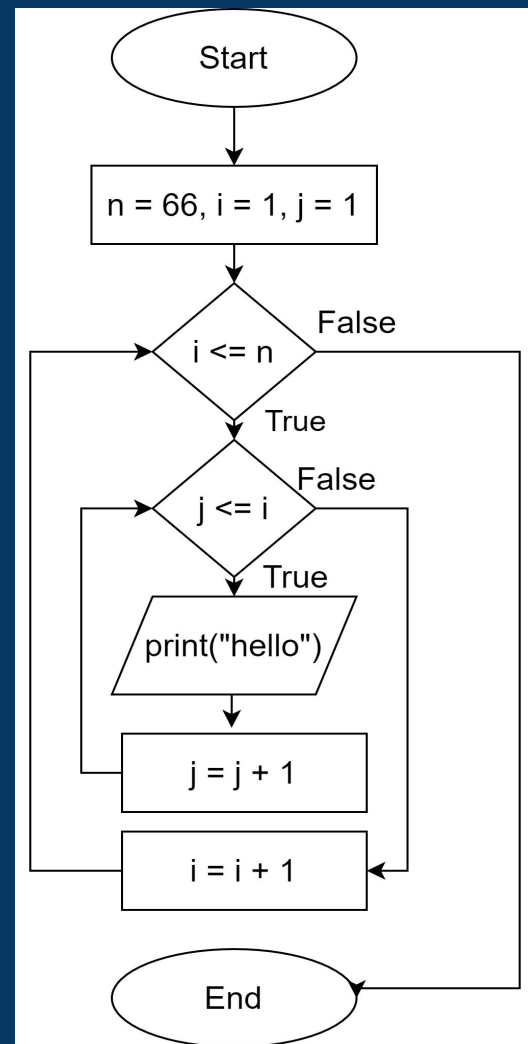
D. 99

If we observe (5th, 10th, 15th) number we see that it is sum of previous 4 number. Left number is nothing but natural number starting from one.



9. How many times hello would be printed while running the flowchart?

- A. 66
- B. 132
- C. 66×66
- D. 363





9. How many times hello would be printed while running the flowchart?

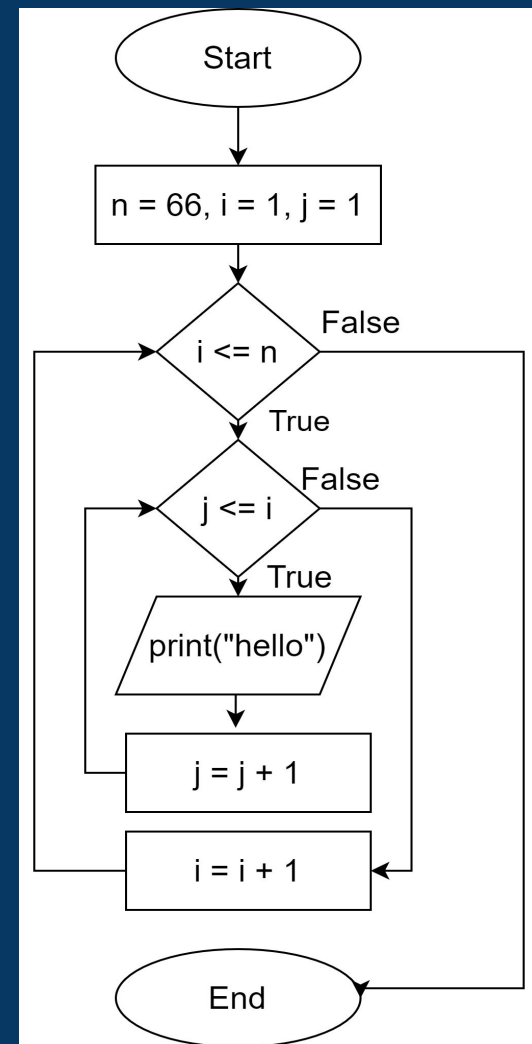
A. 66

B. 132

C. 66×66

D. 363

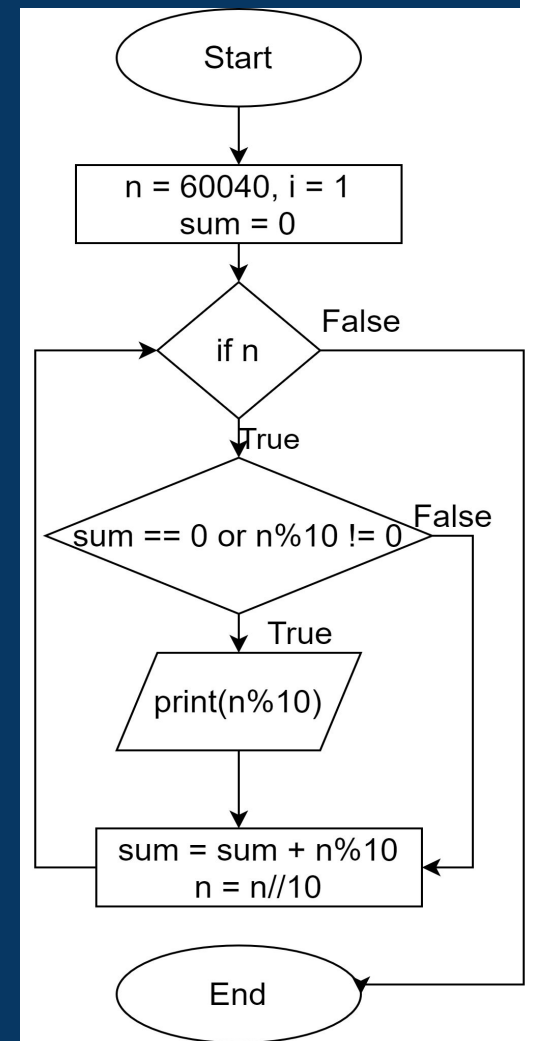
When hello printed j also increased by one so number of times hello printed == number times j increased and see j starting from one goes to 67 so 66 times hello would be printed.



10. What the following flowchart would be print?

Note: Here comma denotes a new line.

- A. 4, 0, 0, 6
- B. 0, 4, 6
- C. 0, 4, 0, 0, 6
- D. 4, 6



10. What the following flowchart would be print?

Note: Here comma denote a new line.

A. 4, 0, 0, 6

B. 0, 4, 6

C. 0, 4, 0, 0, 6

D. 4, 6

