



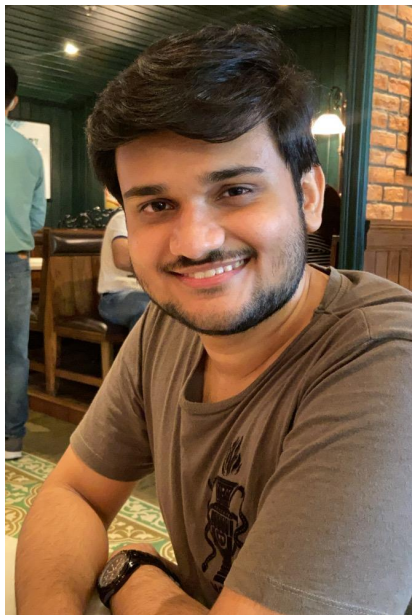
Loops

With Sanket Singh

Let's crack Competitive Programming together!



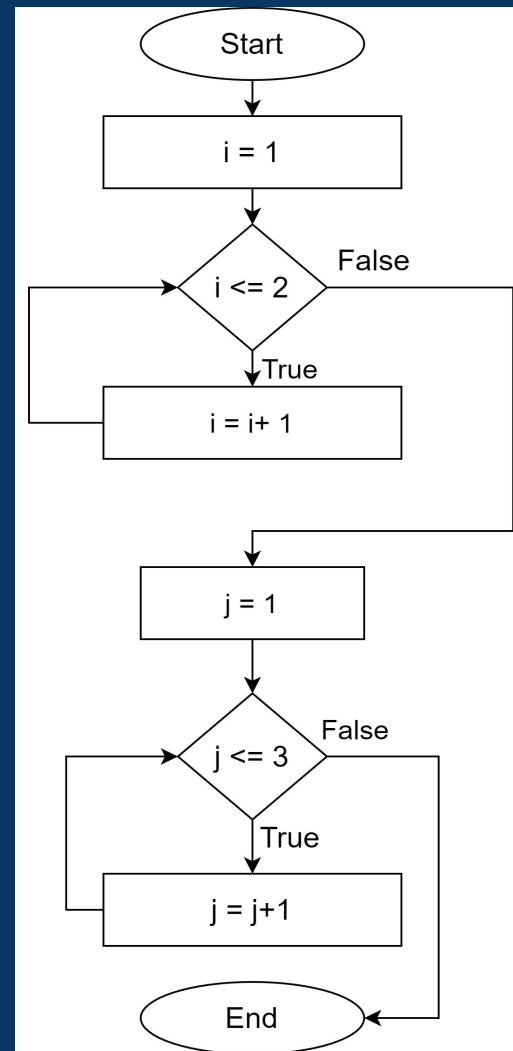
Sanket Singh



- 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. Are the two loops in the flowchart given in nested form?

- A. True
- B. False

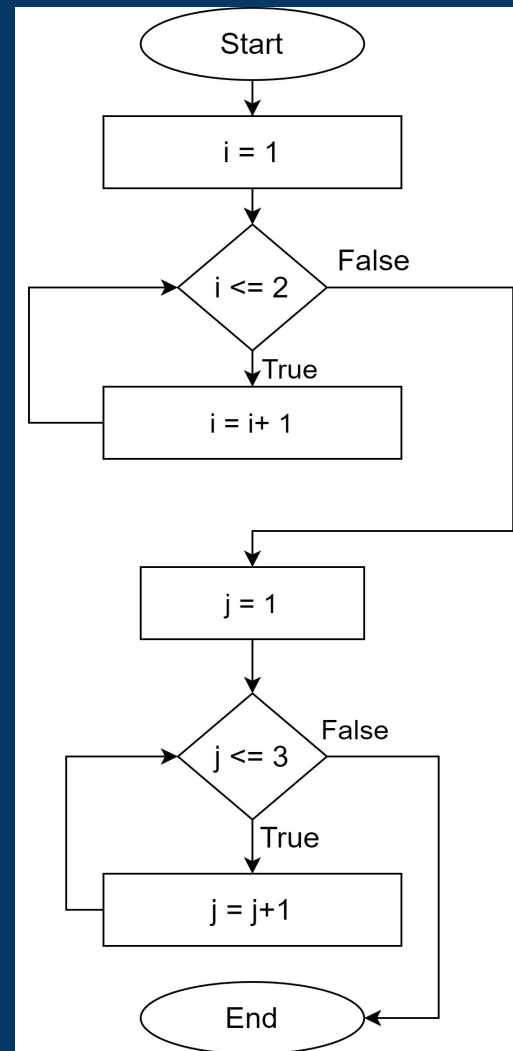


1. Are the two loops in the flowchart given in nested form?

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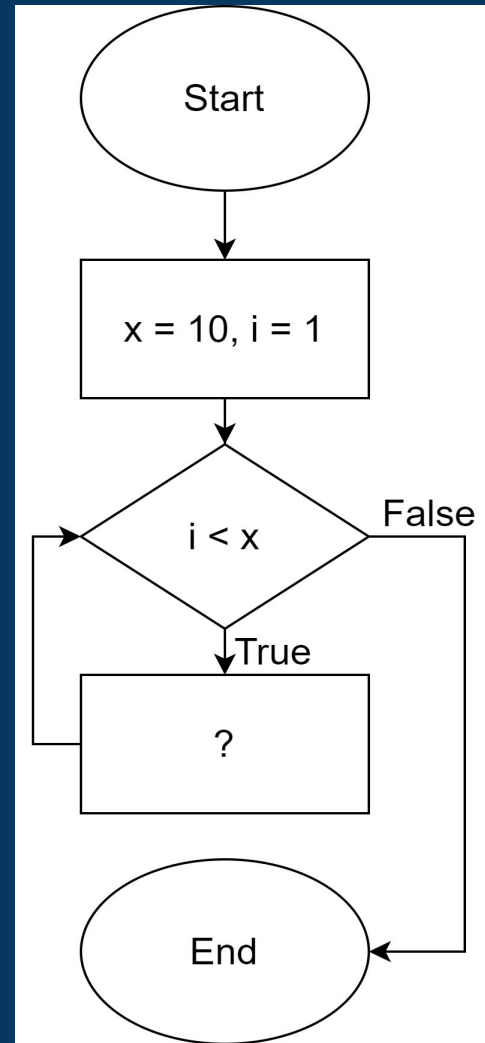
If one loop is inside the another loop then we say that loop are in nested form.





2. By what condition ?
should be replaced so that
the loop runs for a finite
amount of time?

- A. $i = i - 1$
- B. $i = i / 2$
- C. $x = x - 1$
- D. $x = x + 1$

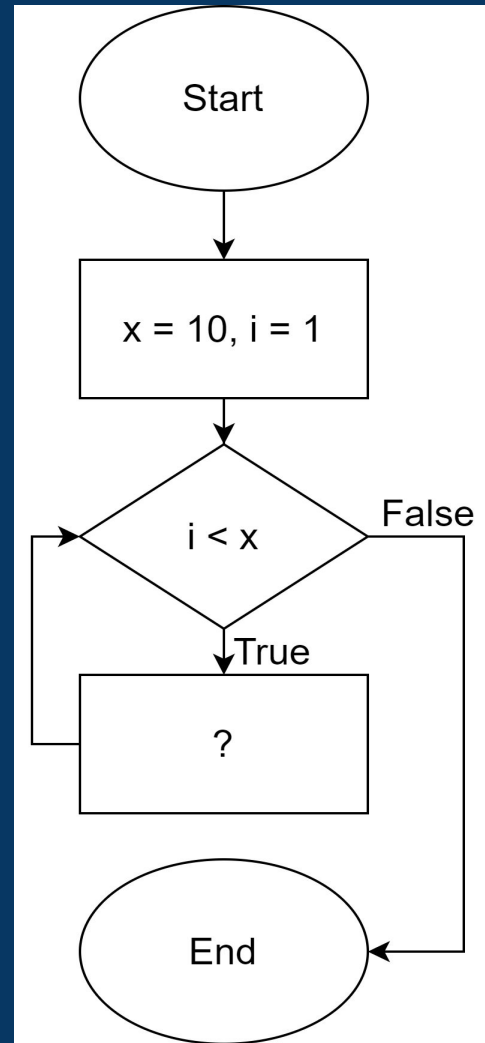




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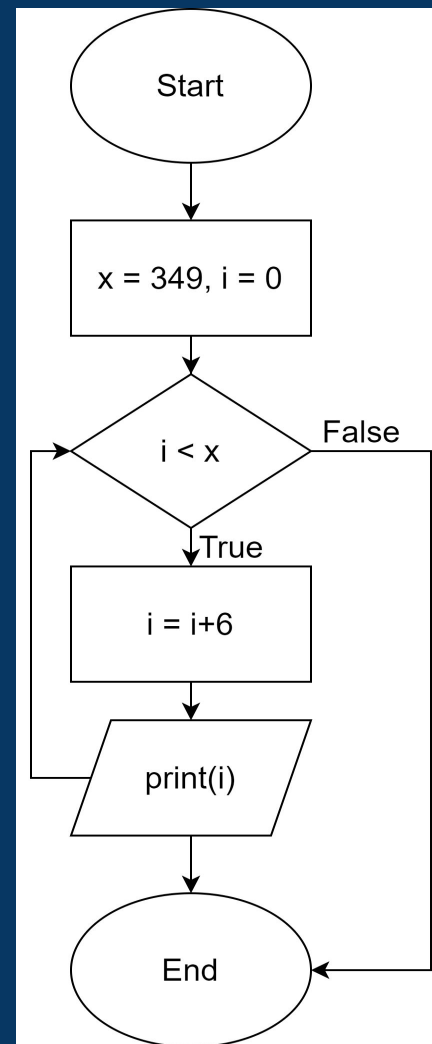
If we replace ?
by option C
then after 9
times x
become 1 so $1 > 1$ this
condition
going to false





3. If “i” is printed while running the following flowchart then which of the following options is true?

- A. $i \% 4 == 0$
- B. $i \% 2 == 0$
- C. $i \% 5 == 0$
- D. $i \% 12 == 0$

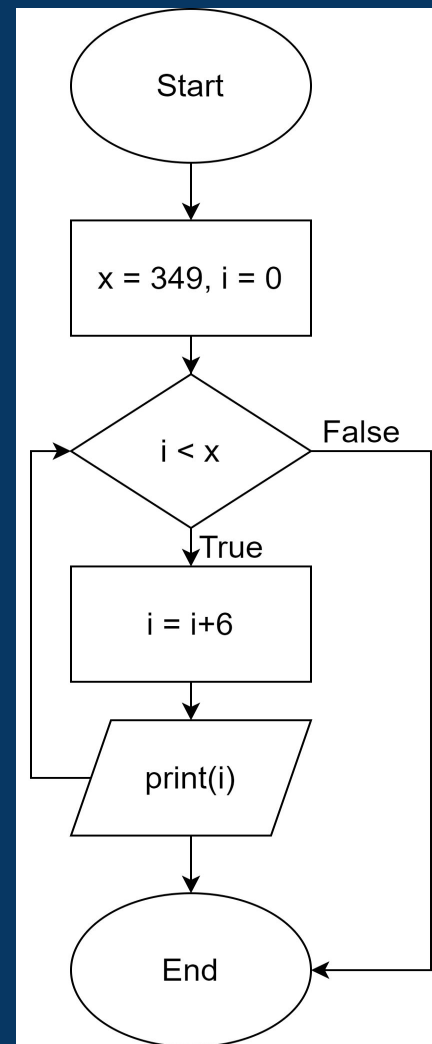




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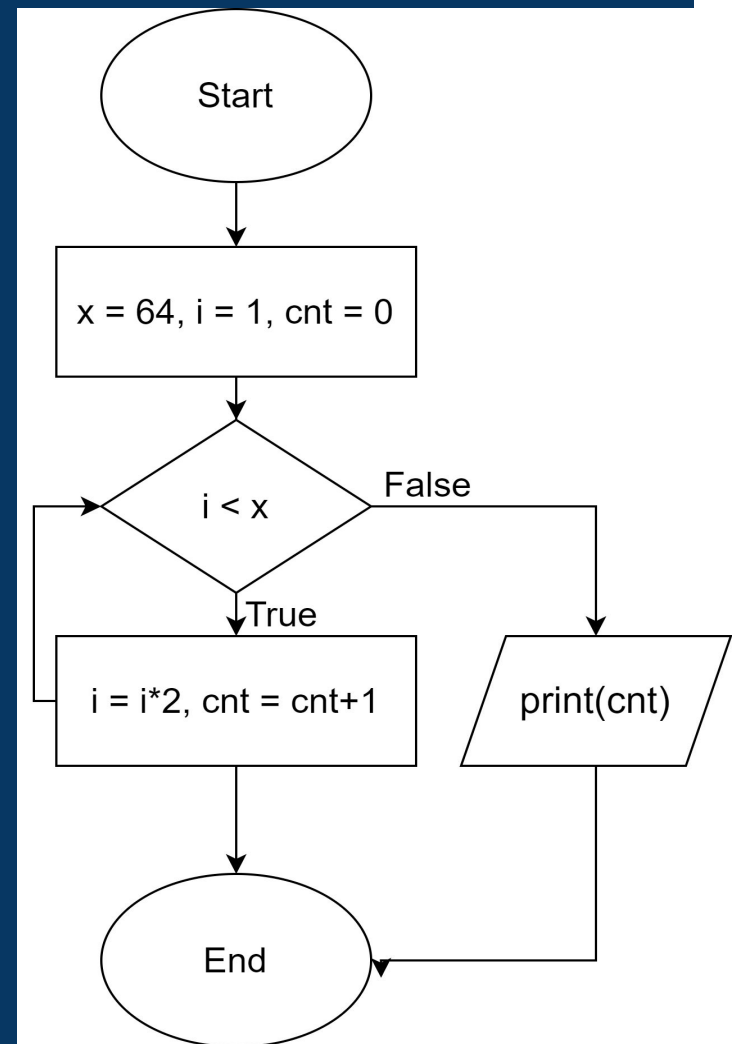
- A. $i \% 4 == 0$
- B. $i \% 2 == 0$**
- C. $i \% 5 == 0$
- D. $i \% 12 == 0$

Since the printed number is divisible by 6 so the numbers must be divisible by 2



4. What is the value of **cnt** printed by the flowchart?

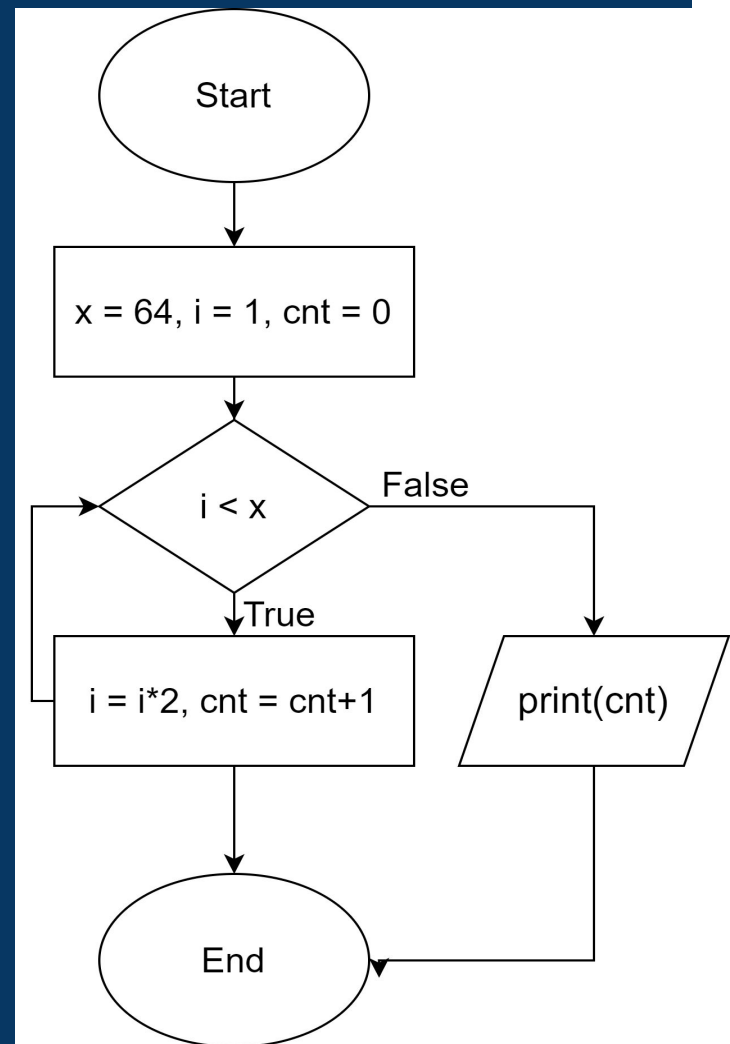
- A. 3
- B. 4
- C. 7
- D. 6



4. What is the value of **cnt** printed by the flowchart?

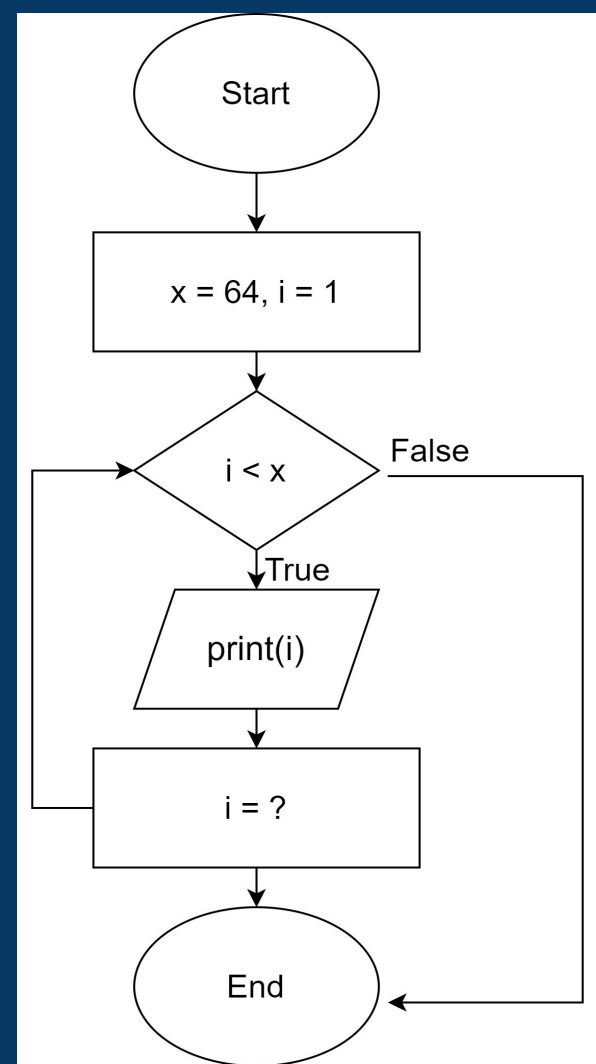
- A. 3
- B. 4
- C. 7
- D. 6

If you observe the value of **i** you see it doubles every times so it means **i** makes a G.p. 1, 2, 4, 8, 16, 32, 64 so as i reach 64 it breaks.



5. By what value ? should be replaced so the printed value makes a sequence looks like 1, 2, 4, 8,..... ?

- A. $i = i + 1$
- B. $i = i + i$
- C. $i = i + i * 2$
- D. $i = i + i * 3$



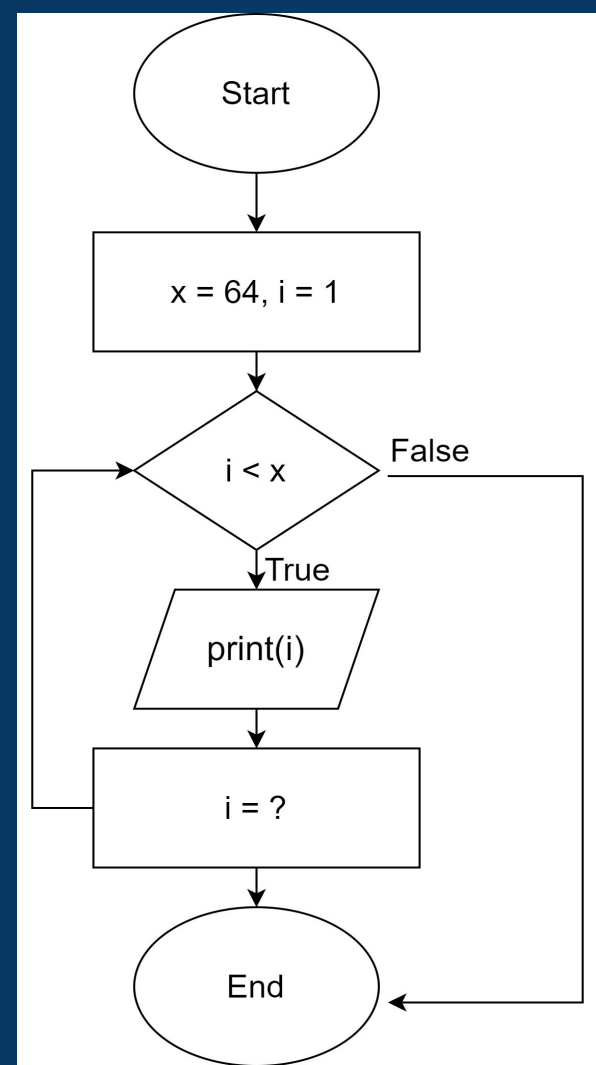
5. By what value ? should be replaced so the printed value makes a sequence looks like 1, 2, 4, 8,..... ?

A. $i = i + 1$

B. $i = i + i$

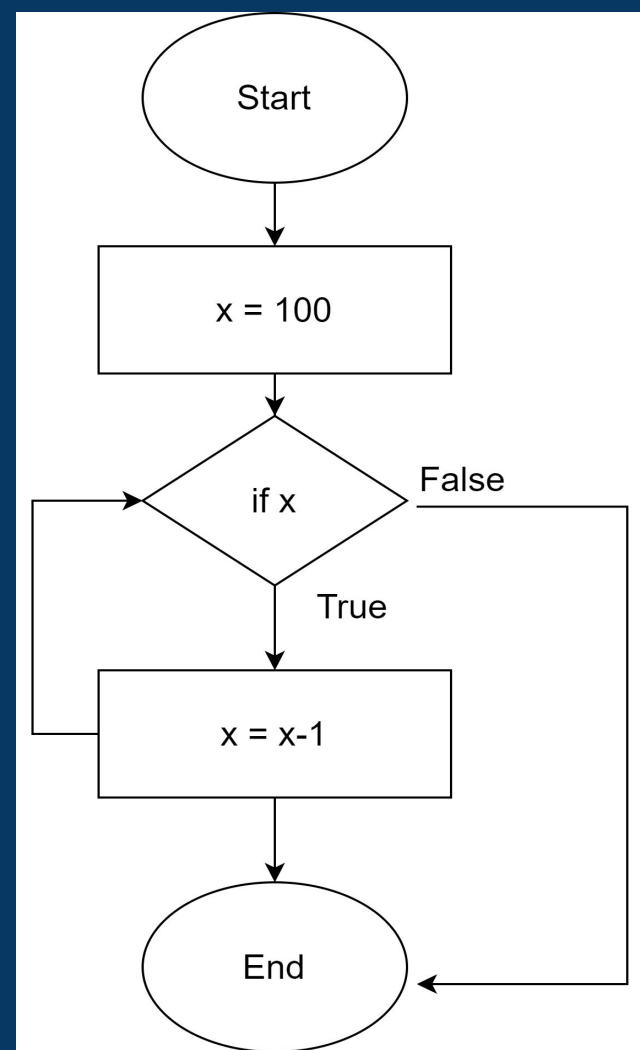
C. $i = i + i*2$

D. $i = i + i*3$



6. How many times the loop will run?

- A. 200
- B. 100
- C. 101
- D. infinite





6. How many times
the loop will run?

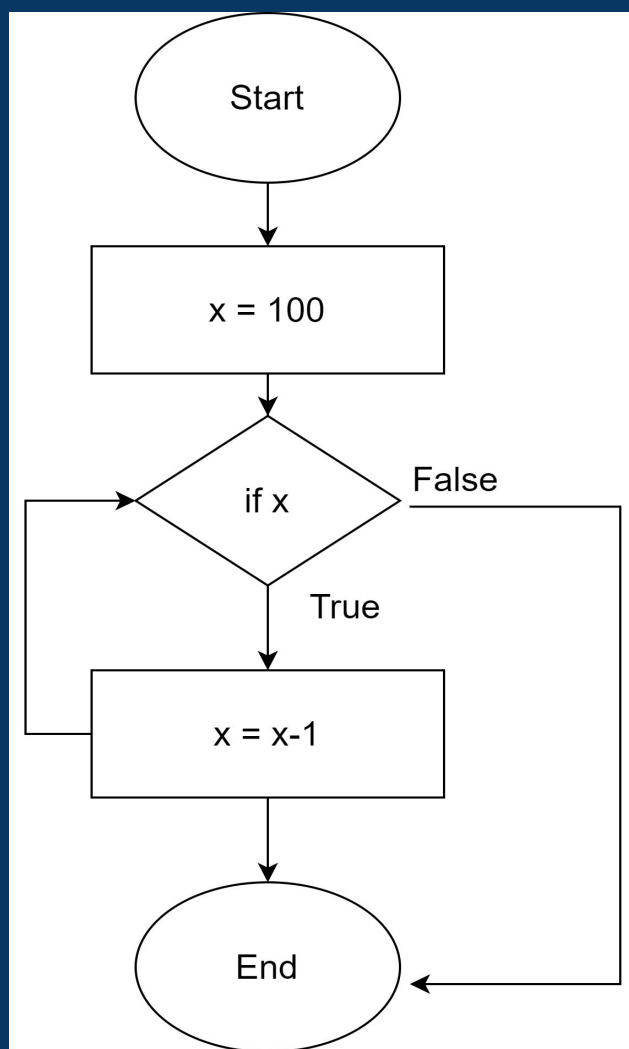
A. 200

B. 100

C. 101

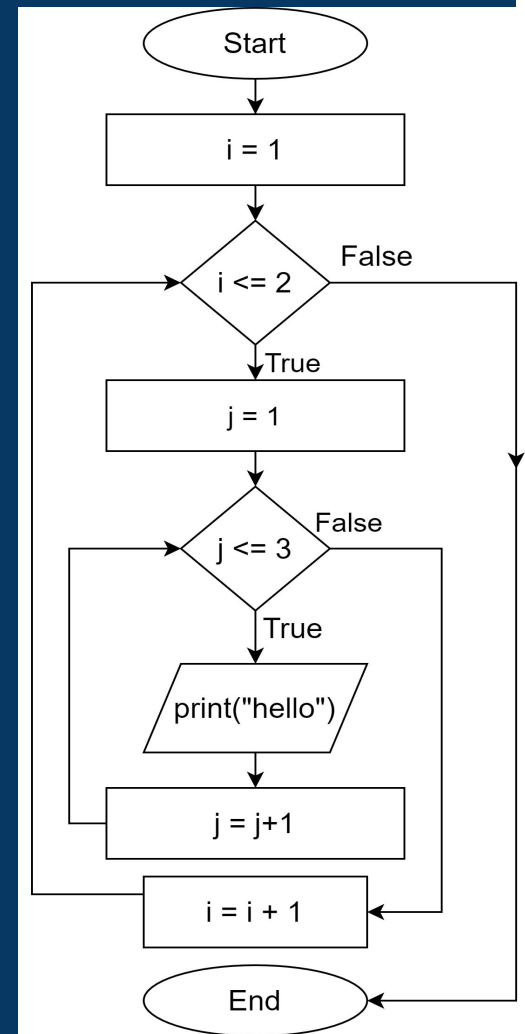
D. infinite

When x become equal
to 0 the loops will stop
since $0 == \text{false}$



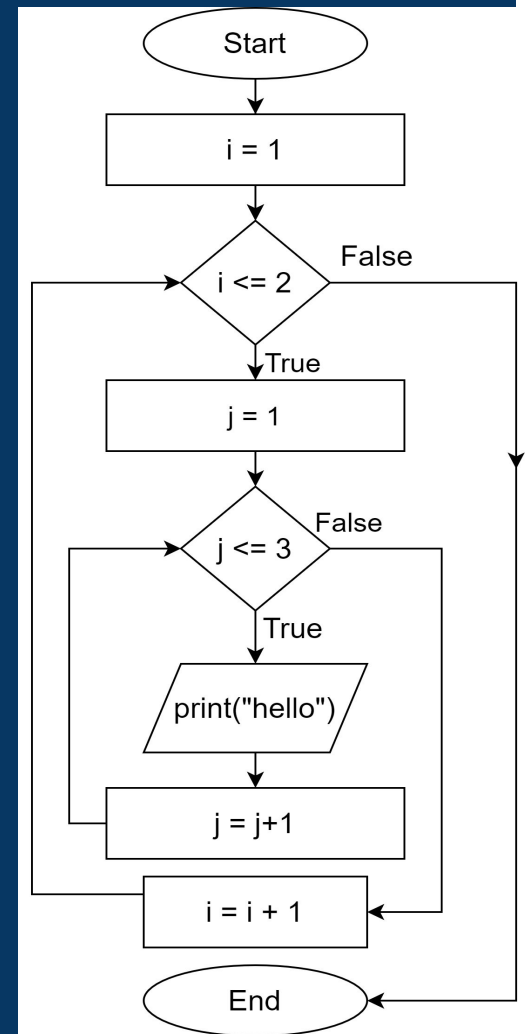
7. How many times would **hello** be printed?

- A. 5
- B. 6
- C. 8
- D. 9



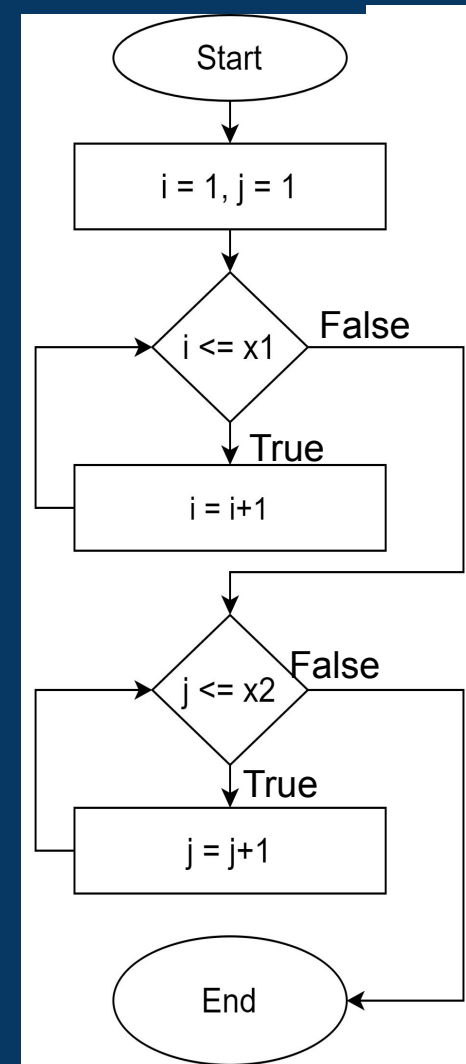
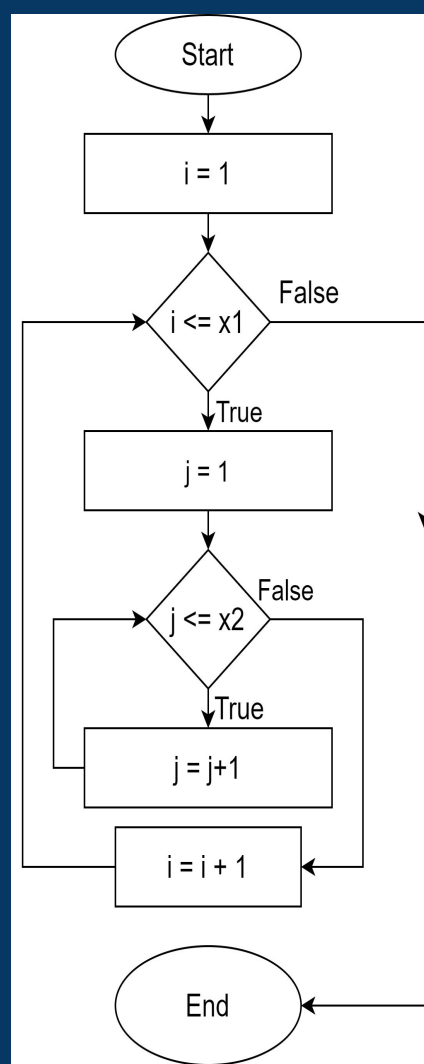
7. How many times would **hello** be printed?

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8. What should be the values of x_1 and x_2 , so that both flowchart runs for same time?

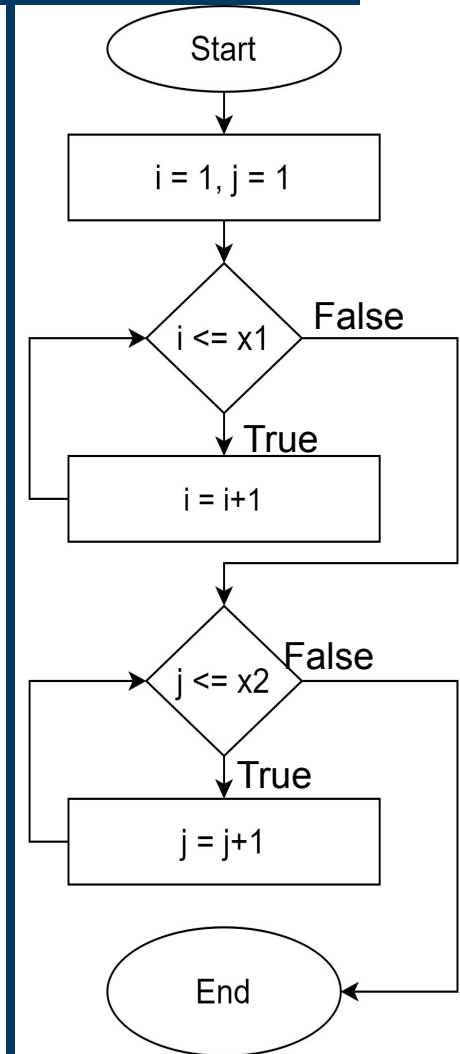
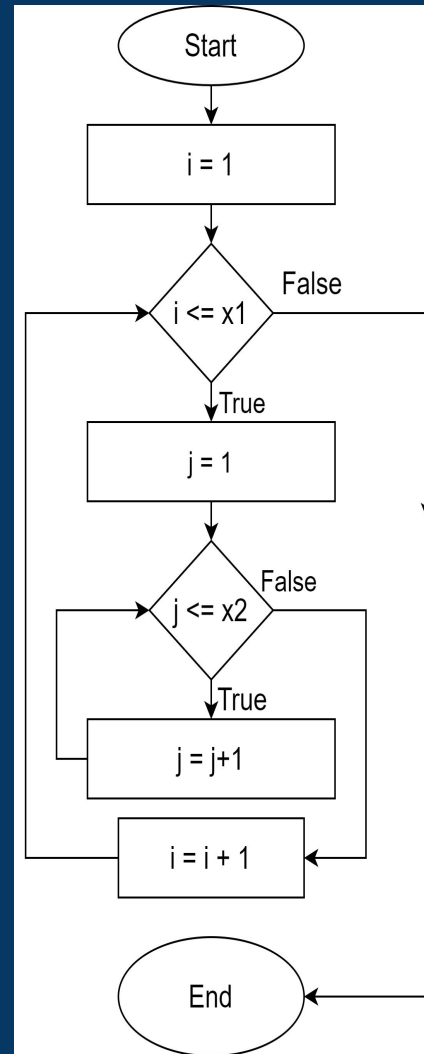
- A. 3, 4
- B. 1, 2
- C. 2, 2
- D. 1, 1



8. What should be the values of x_1 and x_2 , so that both flowchart runs for same time?

- A. 3, 4
- B. 1, 2
- C. 2, 2**
- D. 1, 1

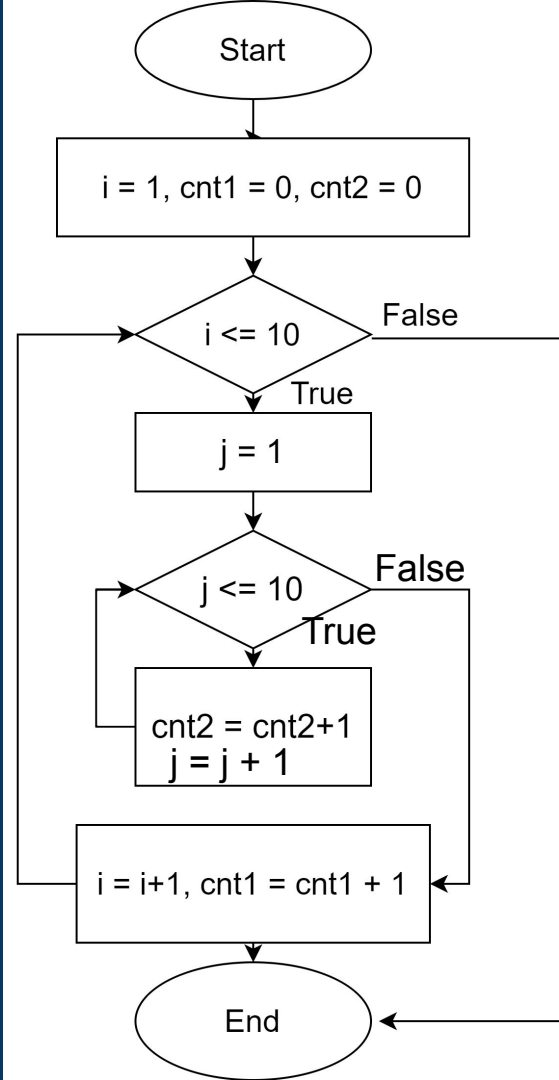
In nested loops total number of operation $x_1 * x_2$ and in sequence form total number of operation $x_1 + x_2$ so both run for same time only if $x_1 * x_2 == x_1 + x_2$.





9. What is the relation between cnt1 and cnt2?

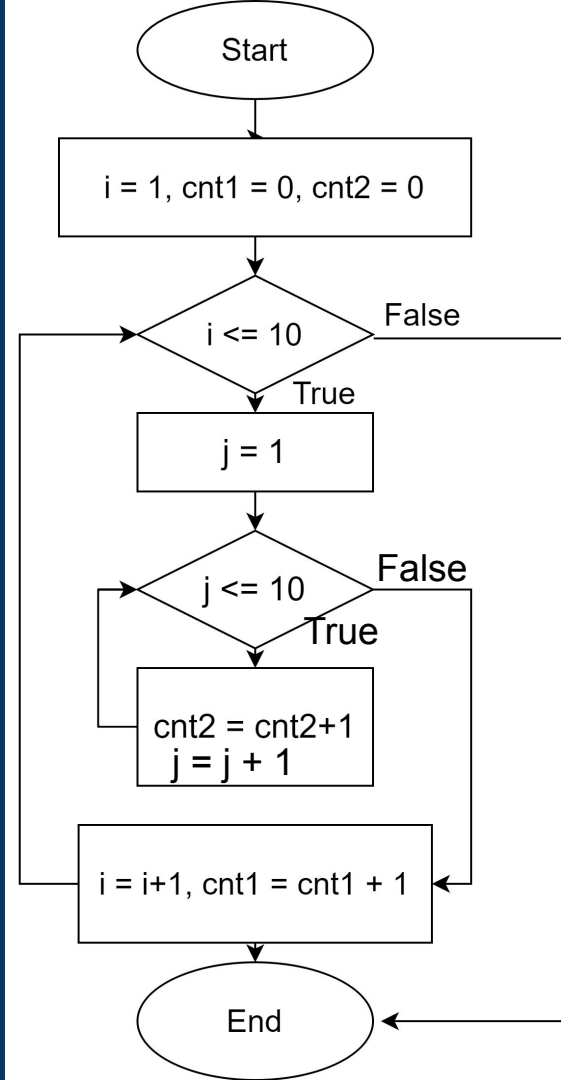
- A. $\text{cnt2} = \text{cnt1} / 10$
- B. $\text{cnt2} = \text{cnt1} / 5$
- C. $\text{cnt1} = \text{cnt2} / 10$
- D. $\text{cnt1} = \text{cnt2} / 5$





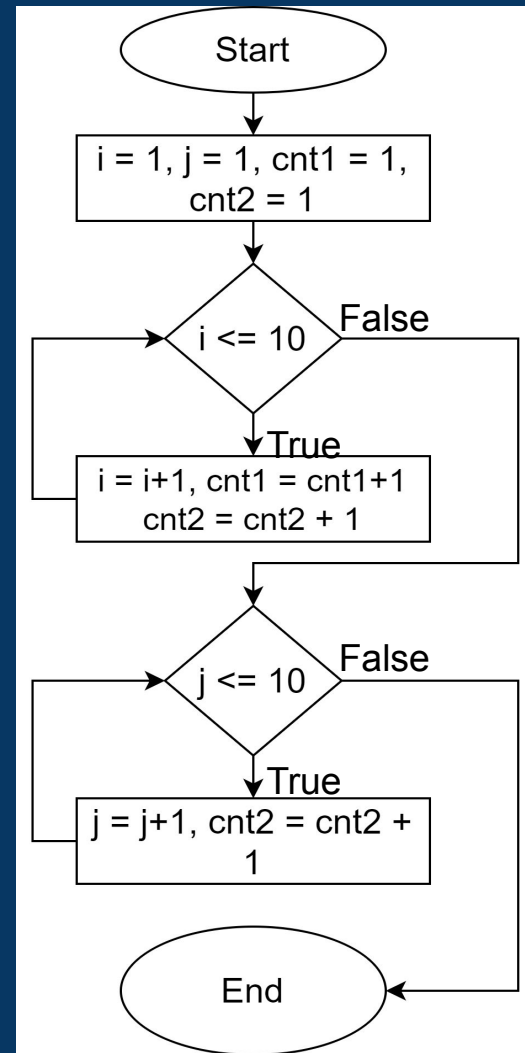
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- A. $\text{cnt2} = \text{cnt1} / 10$
- B. $\text{cnt2} = \text{cnt1} / 5$
- C. $\text{cnt1} = \text{cnt2} / 10$**
- D. $\text{cnt1} = \text{cnt2} / 5$



10. What is the relation between cnt1 and cnt2?

- A. $\text{cnt1} = \text{cnt2} - \text{cnt1}$
- B. $\text{cnt2} = \text{cnt1} - \text{cnt2}$
- C. $\text{cnt1} = \text{cnt2} * 2 - \text{cnt1}$
- D. $\text{cnt2} = \text{cnt1} * 2 - \text{cnt2}$



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- A. $\text{cnt1} = \text{cnt2} - \text{cnt1}$
- B. $\text{cnt2} = \text{cnt1} - \text{cnt2}$
- C. $\text{cnt1} = \text{cnt2} * 2 - \text{cnt1}$
- D. $\text{cnt2} = \text{cnt1} * 2 - \text{cnt2}$

