

Dart Programming Language

Lab1

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Assignment 1

Dr. Bruce Banner hates his enemies (like others don't). As we all know, he can barely talk when he turns into the incredible Hulk. That's why he asked you to help him to express his feelings.

Hulk likes the Inception so much, and like that his feelings are complicated. They have n layers. The first layer is hate, second one is love, third one is hate and so on...

For example if $n = 1$, then his feeling is "I hate it" or if $n = 2$ it's "I hate that I love it", and if $n = 3$ it's "I hate that I love that I hate it" and so on.

Please help Dr. Banner.

Input

The only line of the input contains a single integer n ($1 \leq n \leq 100$) — the number of layers of love and hate.

Output

Print Dr.Banner's feeling in one line.

See the example next slide

Input: 1

Output: I hate it

Input: 2

Output: I hate that I love it

Input: 3

Output: I hate that I love that I hate it



Assignment 2

A soldier wants to buy w bananas in the shop. He has to pay k dollars for the first banana, $2k$ dollars for the second one and so on (in other words, he has to pay $i \cdot k$ dollars for the i -th banana).

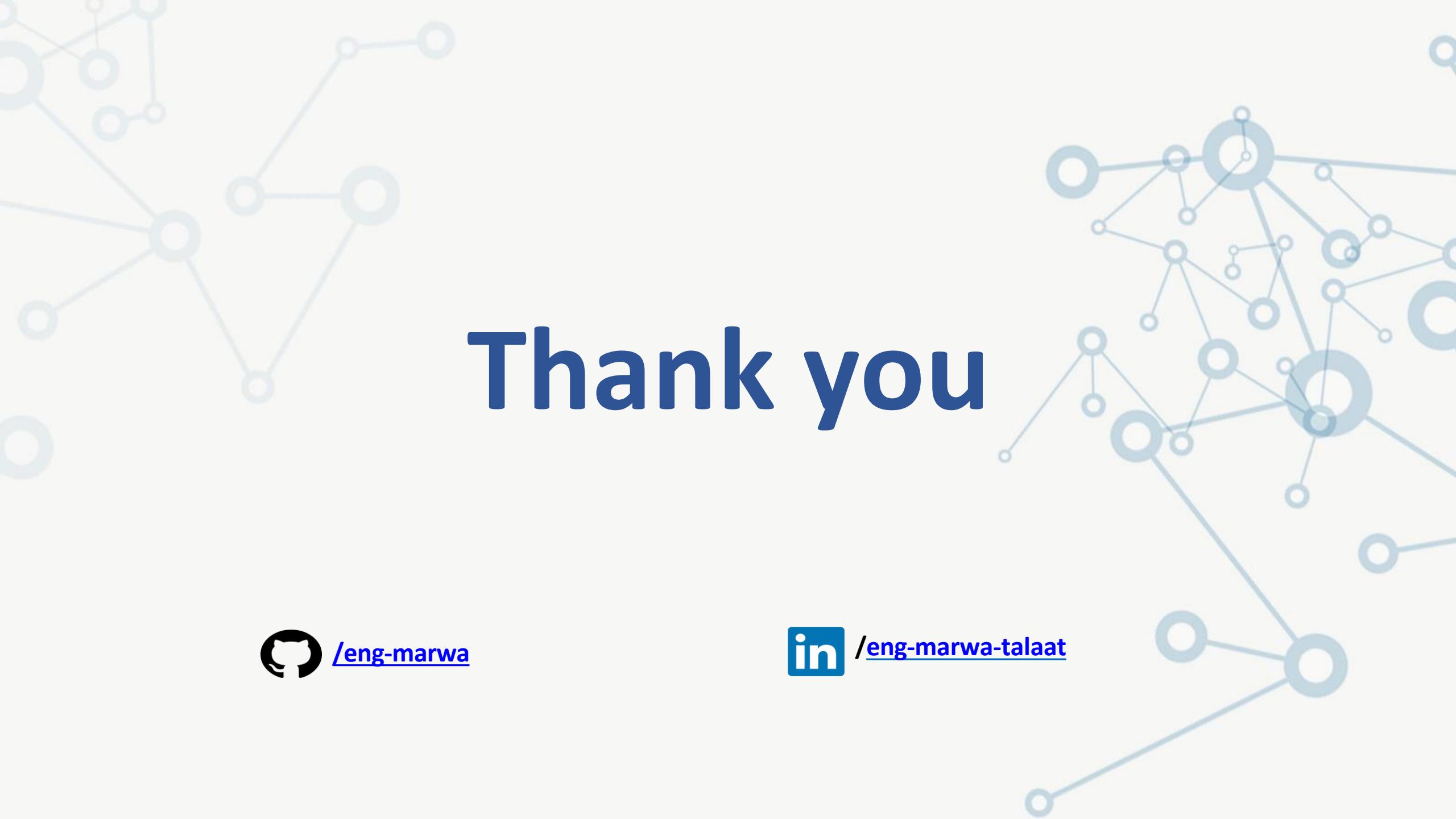
He has n dollars. How many dollars does he have to borrow from his friend soldier to buy w bananas?

Input

The first line contains three positive integers k, n, w the cost of the first banana, initial number of dollars the soldier has and number of bananas he wants.

Output

Output one integer — the amount of dollars that the soldier must borrow from his friend. If he doesn't have to borrow money, output 0.

A faint, light-blue network graph serves as the background for the slide. It consists of numerous small, semi-transparent circular nodes connected by thin lines, forming a complex web-like structure.

Thank you

