
Programming Using C

week 12 practice session coding

Name:K.Kamaleshwaran

Department:AIML-'B'

Roll No.:242501079

Submit your work
to the
judge

Example

number = 75

Convert the decimal number 75 to binary number $75 = 64 + 8 + 2 + 1 = 2^6 + 2^3 + 2^2 + 2^0 = 1001011_2$.
The value of the 2^0 index from the right in the binary representation is 1.

Function Description

Complete the function `isOddBit` in the editor below.

`isOddBit` has the following parameter(s):
`int number`: a decimal integer.

Return
an integer 0 or 1, matching the 0th least significant digit in the binary representation of `number`.

Constraints

$0 \leq \text{number} < 2^{31}$.

Input Format for Custom Testing

Input from stdin will be provided as follows and passed to the function.

The only line contains an integer, `number`.

Sample Case 0

Sample Input 0

STDIN: Read line

07 → number = 7

Sample Output 0

0

Explanation 0

Convert the decimal number 7 to binary number $7_{10} = 111_{10}$.
The value of the 0th index from the right in the binary representation is 1.

Sample Case 1

Sample Input 1

STDIN: Read line

07 → number = 7

Sample Output 1

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Explanation 1

Convert the decimal number 7 to binary number $7_{10} = 111_{10}$.
The value of the 0th index from the right in the binary representation is 1.

Answer (yourly engine 0.7s)

Short answer

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about

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feedback

Determine the factors of a number n , all positive integer values that evenly divide into a number, and then return the p^{th} element of the list, sorted ascending. If there is no p^{th} element, return 0.

Example

$n = 10$
 $p = 3$

The factors of 10 in ascending order are [1, 2, 5, 10]. Using 1-based indexing, if $p = 5$, then 0 is returned. If $p = 6$, it would be returned.

Function Description

Complete the function `getFactors` in the editor below.

`getFactors` has the following parameter(s):
 n : the integer whose factors are to be found
 p : the index of the factor to be returned

Return:

an integer representing the p^{th} integer factor of n . If there is no factor at that index, then 0 is returned.

Constraints

$1 \leq n \leq 10^9$
 $1 \leq p \leq 10^7$

Input Format

Input begins with n on the first line, followed by p on the second line.

The first line contains an integer n , the number to factor.

The second line contains an integer p , the 1-based index of the factor to return.

Sample Case 0

Sample Input 0

STDIN Raw Input

10 10

3 3

Sample Output 0

5

Explanation 0

Factoring $n = 10$ results in [1, 2, 5, 10]. Since the $p = 3^{\text{rd}}$ factor, 5, is the answer.

Sample Case 1

Sample Input 1

STDIN Raw Input

10 10

6 6

Sample Output 1

0

Explanation 1

Factoring $n = 10$ results in [1, 2, 5, 10]. There are only 4 factors and $p = 6$, therefore 0 is returned as the answer.

Sample Case 2

Sample Input 2

STDIN Raw Input

7 7

5 5

Sample Output 2

7

Explanation 2

Factoring $n = 7$ results in [1, 7]. There is 1st factor of 7, so return as the answer.

Activate Windows
Go to Settings to activate Windows.

Sample Output 2

Explanation 2

Recursion is a technique in which the problem is solved by calling the same function repeatedly.

Answer: (recursion)

```
1 // Recursion is a technique in which the problem is solved by calling the same function repeatedly.
2 // The function is repeated for many times (100, 200, 300, etc.).
3 // The function is called repeatedly.
4 // The function is called repeatedly.
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98 // The function is called repeatedly.
99 // The function is called repeatedly.
100 // The function is called repeatedly.
```

Test	Expected	Obs
1	100	100
2	200	200
3	300	300
4	400	400

Passed all tests: 100%

Activate Windows
Go to Settings to activate Windows.

Account

Logout

My Profile

My Account

You are back account holder. Initially you have 1 square in your account, and you can multiply it by 10. You can multiply the number of squares you have by 10, while the amount can multiply it by 10. There is no limit on the number of times you can multiply the amount. Money is not a factor.

Consider:

1. $1 \times 10^0 = 1$
2. $1 \times 10^1 = 10$

Input:

The first line contains a single integer N .

Output:

For each test case, print a single line containing the string "YES" if you can make exactly N squares or "NO" otherwise.

1000000000000000000

1

1000000000000000000

1

1000000000000000000

2

1000000000000000000

0

Answer: (Initially register 0.0)

Read input

```
1 // This is a C++ program to check if a number is a power of 10.
2 // The function is expected to return an integer.
3 // The function accepts an integer N as parameter.
4 //
5 //
6 //
7 //
8 //
9 //
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100 //
```

Test	Expected	Got
1000000000000000000	YES	YES
1000000000000000000	YES	YES
1000000000000000000	YES	YES
1000000000000000000	YES	YES
1000000000000000000	YES	YES
1000000000000000000	YES	YES

Percent of correct: 100%

2

100%

100%

100%

Find the number of ways that a given integer, K , can be represented as the sum of the M^{th} powers of unique natural numbers.

For example, if $K = 10$ and $M = 2$, we have to find all combinations of unique squares adding up to 10. The only solution is $1^2 + 3^2$.

Function Description

Complete the powerSum function in the editor below. It should return an integer that represents the number of possible combinations.

powerSum has the following parameter(s):

- K : The integer to sum to.
- M : The unique powers to use as numbers to equal K .

The first two numbers are integers K .

The second two variables are integers M .

Constraints

- $1 \leq K \leq 1000$
- $2 \leq M \leq 10$

Output Format

Output a single integer, the number of possible combinations calculated.

Sample Input 0

```
10
2
```

Sample Output 0

```
1
```

Explanation 0

If $K = 10$ and $M = 2$, we need to find the number of ways that 10 can be represented as the sum of squares of unique numbers.

$10 = 1^2 + 3^2$

This is the only way to select 10 as the represented as the sum of unique squares.

Sample Input 1

```
100
3
```

Sample Output 1

```
7
```

Explanation 1

$100 = (10^2) + (6^2 + 8^2) + (3^2 + 7^2 + 8^2 + 9^2)$

Sample Input 2

```
100
4
```

Sample Output 2

```
1
```

Explanation 2

100 can be represented as the sum of the cubes of 1, 3, 4, 5, 6.

$(1 + 8 + 27 + 64 + 100)$. There is no other way to represent 100 as the sum of cubes.



```
2 // Explain the 'important' function below.
3 // The function is expected to return an integer.
4 // The function accepts following parameters:
5 // 1. integer a
6 // 2. integer b
7
8 // Write your code here
9
10 // Important function
11 int important(int a, int b, int c)
12 {
13     int result;
14     int temp1 = (a+b)*c;
15     int temp2 = (a-b)*c;
16     int temp3 = (a+b)*c;
17     int temp4 = (a-b)*c;
18     int temp5 = (a+b)*c;
19     int temp6 = (a-b)*c;
20     int temp7 = (a+b)*c;
21     int temp8 = (a-b)*c;
22     int temp9 = (a+b)*c;
23     int temp10 = (a-b)*c;
24     int temp11 = (a+b)*c;
25     int temp12 = (a-b)*c;
26     int temp13 = (a+b)*c;
27     int temp14 = (a-b)*c;
28     int temp15 = (a+b)*c;
29     int temp16 = (a-b)*c;
30     int temp17 = (a+b)*c;
31     int temp18 = (a-b)*c;
32     int temp19 = (a+b)*c;
33     int temp20 = (a-b)*c;
34     int temp21 = (a+b)*c;
35     int temp22 = (a-b)*c;
36     int temp23 = (a+b)*c;
37     int temp24 = (a-b)*c;
38     int temp25 = (a+b)*c;
39     int temp26 = (a-b)*c;
40     int temp27 = (a+b)*c;
41     int temp28 = (a-b)*c;
42     int temp29 = (a+b)*c;
43     int temp30 = (a-b)*c;
44     int temp31 = (a+b)*c;
45     int temp32 = (a-b)*c;
46     int temp33 = (a+b)*c;
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48     int temp35 = (a+b)*c;
49     int temp36 = (a-b)*c;
50     int temp37 = (a+b)*c;
51     int temp38 = (a-b)*c;
52     int temp39 = (a+b)*c;
53     int temp40 = (a-b)*c;
54     int temp41 = (a+b)*c;
55     int temp42 = (a-b)*c;
56     int temp43 = (a+b)*c;
57     int temp44 = (a-b)*c;
58     int temp45 = (a+b)*c;
59     int temp46 = (a-b)*c;
60     int temp47 = (a+b)*c;
61     int temp48 = (a-b)*c;
62     int temp49 = (a+b)*c;
63     int temp50 = (a-b)*c;
64     int temp51 = (a+b)*c;
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71     int temp58 = (a-b)*c;
72     int temp59 = (a+b)*c;
73     int temp60 = (a-b)*c;
74     int temp61 = (a+b)*c;
75     int temp62 = (a-b)*c;
76     int temp63 = (a+b)*c;
77     int temp64 = (a-b)*c;
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79     int temp66 = (a-b)*c;
80     int temp67 = (a+b)*c;
81     int temp68 = (a-b)*c;
82     int temp69 = (a+b)*c;
83     int temp70 = (a-b)*c;
84     int temp71 = (a+b)*c;
85     int temp72 = (a-b)*c;
86     int temp73 = (a+b)*c;
87     int temp74 = (a-b)*c;
88     int temp75 = (a+b)*c;
89     int temp76 = (a-b)*c;
90     int temp77 = (a+b)*c;
91     int temp78 = (a-b)*c;
92     int temp79 = (a+b)*c;
93     int temp80 = (a-b)*c;
94     int temp81 = (a+b)*c;
95     int temp82 = (a-b)*c;
96     int temp83 = (a+b)*c;
97     int temp84 = (a-b)*c;
98     int temp85 = (a+b)*c;
99     int temp86 = (a-b)*c;
100    int temp87 = (a+b)*c;
101    int temp88 = (a-b)*c;
102    int temp89 = (a+b)*c;
103    int temp90 = (a-b)*c;
104    int temp91 = (a+b)*c;
105    int temp92 = (a-b)*c;
106    int temp93 = (a+b)*c;
107    int temp94 = (a-b)*c;
108    int temp95 = (a+b)*c;
109    int temp96 = (a-b)*c;
110    int temp97 = (a+b)*c;
111    int temp98 = (a-b)*c;
112    int temp99 = (a+b)*c;
113    int temp100 = (a-b)*c;
114    return result;
115 }
```

Task	Expected	Got
✓	100	100

Passed all tests. ✓

Activate Windows
Go to Settings to activate Windows.