Status	Finished
Started	Monday, 13 January 2025, 4:59 PM
Completed	Monday, 13 January 2025, 5:28 PM
Duration	29 mins 17 secs

Question **1**

Correct

Marked out of 1.00

Flag question

A binary number is a combination of 1s and 0s. Its n^{th} least significant digit is the n^{th} digit starting from the right starting with 1. Given a decimal number, convert it to binary and determine the value of the the 4^{th} least significant digit.

Example

number = 23

- Convert the decimal number 23 to binary number: $23^{10} = 2^4 + 2^2 + 2^1 + 2^0 = (10111)_2$.
- The value of the 4^{th} index from the right in the binary representation is 0.

Function Description

Complete the function fourthBit in the editor below.

fourthBit has the following parameter(s):

int number: a decimal integer

Returns:

int: an integer 0 or 1 matching the 4th least significant digit in the binary representation of number.

Constraints

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

Input Format for Custom Testing

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

The only line contains an integer, number.

Sample Case 0

Sample Input 0

STDIN Function
----- --------
32 → number = 32

Sample Output 0

0

Explanation 0

- Convert the decimal number 32 to binary number: $32_{10} = (100000)_2$.
- The value of the 4th index from the right in the binary representation is 0.

Sample Case 1

Sample Input 1

STDIN Function

----- --------

77 → number = 77

Sample Output 1

1

Explanation 1

- Convert the decimal number 77 to binary number: $77_{10} = (1001101)_2$.
- The value of the 4th index from the right in the binary representation is 1.

Answer: (penalty regime: 0 %)

Reset answer

Answer: (penalty regime: 0 %)

Reset answer

```c
/*
 * Complete the 'fourthBit' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts INTEGER number as parameter.
 */

int fourthBit(int number)
{
    int flsb;
    flsb=(number>>3)&1;
    return flsb;
}
```

	Test	Expected	Got	
✓	printf("%d", fourthBit(32))	0	0	✓
✓	printf("%d", fourthBit(77))	1	1	✓

Passed all tests! ✓

Question **2**

Correct

Marked out of 1.00

Flag question

Determine the factors of a number (i.e., 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 = 20

p = 3

The factors of 20 in ascending order are {1, 2, 4, 5, 10, 20}. Using 1-based indexing, if p = 3, then 4 is returned. If p > 6, 0 would be returned.

Function Description

Complete the function pthFactor in the editor below.

pthFactor has the following parameter(s):

int n: the integer whose factors are to be found

int p: the index of the factor to be returned

Returns:

int: the long integer value of the p^{th} integer factor of n or, if there is no factor at that index, then 0 is returned

Constraints

$1 \leq n \leq 10^{15}$

$1 \leq p \leq 10^{9}$

Sample Case 0

Sample Input 0

STDIN Function

----- --------

10 → n = 10

3 → p = 3

Sample Output 0

5

Explanation 0

Factoring n = 10 results in {1, 2, 5, 10}. Return the p = 3rd factor, 5, as the answer.

Sample Case 1

Sample Input 1

STDIN Function

----- --------

10 → n = 10

5 → p = 5

Sample Output 1

0

Explanation 1

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

Sample Case 2

Sample Input 2

STDIN Function

----- --------

1 → n = 1

1 → p = 1

Sample Output 2

1

Explanation 2

Factoring n = 1 results in {1}. The p = 1st factor of 1 is returned as the answer.

Answer: (penalty regime: 0 %)

Reset answer

```c
/*
 * Complete the 'pthFactor' function below.
 *
 * The function is expected to return a LONG_INTEGER.
 * The function accepts following parameters:
 *  1. LONG_INTEGER n
 *  2. LONG_INTEGER p
 */

long pthFactor(long n, long p)
{
    long arr[1000000];
    arr[0]=1;
    int c=1;
    for(long i=2;i<=n;i++)
    {
        if(n%i==0)
        {
            arr[c]=i;
            c++;
        }
    }
    if(p>c)
    {
        return 0;
    }
    else
    {
        return arr[p-1];
    }
}
```

	Test	Expected	Got	
✓	printf("%ld", pthFactor(10, 3))	5	5	✓
✓	printf("%ld", pthFactor(10, 5))	0	0	✓
✓	printf("%ld", pthFactor(1, 1))	1	1	✓

Passed all tests! ✓