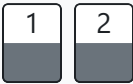


GE23131-Programming Using C-2024

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Status	Finished
Started	Monday, 13 January 2025, 7:32 PM
Completed	Monday, 13 January 2025, 7:38 PM
Duration	5 mins 58 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.

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

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 \rightarrow 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 \rightarrow number = 77

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

```
1  /*
2   * Complete the 'fourthBit'
3   *
4   * The function is expected
5   * The function accepts INTE
6   */
7
8  int fourthBit(int number)
9  {
10     return(number>>3)&1;
11 }
```

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

Passed all tests! ✓

Marked out of
1.00

 [Flag question](#)

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

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

$1 \leq p \leq 10^9$

Input Format for Custom Testing

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	Function
-----	-----
10	→ $n = 10$
3	→ $p = 3$

Sample Output 0

5

Explanation 0

Factoring $n = 10$ results in $\{1, 2, 5, 10\}$.
Return the $p = 3^{\text{rd}}$ 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

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 $p = 1$ st factor of 1 is returned as the answer.

Answer: (penalty regime: 0 %)

Reset answer

```

1  /*
2   * Complete the 'pthFactor'
3   *
4   * The function is expected
5   * The function accepts fol
6   * 1. LONG_INTEGER n
7   * 2. LONG_INTEGER p
8   */
9
10 long pthFactor(long n, long
11 {
12     long j=0;
13     for(long i=1;i<=n;i++){
14         if(n%i==0){
15             j++;
16             if(j==p){
17                 return i;
18             }
19         }
20     }
21     return 0;
22 
```

	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! ✓



Finish review