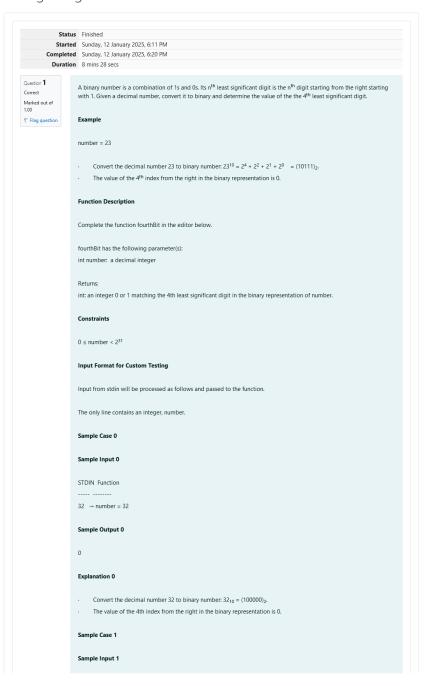
Week-12-User-Defined Functions

GE23131-Programming Using C-2024





REC-CIS

77 → number = 77

Sample Output 1

1

Explanation 1

Convert the decimal number 77 to binary number: 77₁0 = (1001101)₂.

The value of the 4th index from the right in the binary representation is 1.

Answer: (penalty regime: 0 %)

```
18 if(i>=4)
19 {
20 return binary[3];
21 }
22 else
23 return 0;
24 }
```

	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 \le n \le 10^{15}
1 ≤ p ≤ 10<sup>9</sup>
```

Input Format for Custom Testing

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

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

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

Sample Case 1 Sample Input 1

STDIN Function

 $10 \rightarrow n = 10$ $5 \rightarrow p = 5$

Sample Output 1

0

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

Sample Case 2

Sample Input 2

STDIN Function

1 → n = 1

1 → p = 1

1

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

Answer: (penalty regime: 0 %)

```
15 | IT(II/o1==0) | {
    count++;
    18 | if(count==p) | {
        return i;
        21 | }
    22 | }
    23 | }
    return 0;
    }
```

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