

## REC-CIS

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Question 1

Correct

Marked out of 1.00

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A binary number is a combination of 1s and 0s. Its  $n^{\text{th}}$  least significant digit is the  $n^{\text{th}}$  digit starting from the right starting with 1. Given a decimal number, convert it to 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<sup>th</sup> 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**

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

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Answer: (penalty regime: 0 %)

Reset answer

```
1 */  
2  * Complete the 'fourthBit' function below.  
3  *  
4  * The function is expected to return an INTEGER.  
5  * The function accepts INTEGER number as parameter.  
6  */  
7  
8  int fourthBit(int number)  
9  {  
10     int binary[32];  
11     int i=0;  
12     while(number>0)  
13     {  
14         binary[i]=number%2;  
15         number/=2;  
16         i++;  
17     }  
18     if(i>=4)  
19     {  
20         return binary[3];  
21     }  
22     else return 0;  
23  
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  $p^{\text{th}}$  element of the list, sorted ascending. If the

**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  $p^{\text{th}}$  integer factor of `n` or, if there is no factor at that index, then 0 is returned

**Constraints**

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

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

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```
1 /*
2  * Complete the 'pthFactor' function below.
3  *
4  * The function is expected to return a LONG_INTEGER.
5  * The function accepts following parameters:
6  * 1. LONG_INTEGER n
7  * 2. LONG_INTEGER p
8  */
9
10 long pthFactor(long n, long p)
11 {
12     int count=0;
13     for(long i=1;i<=n;++i)
14     {
15         if(n%i==0)
16         {
17             count++;
18             if(count==p)
19             {
20                 return i;
21             }
22         }
23     }
24     return 0;
25 }
26 }
```

	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! ✓