

GE23131-Programming Using C-2024

Status	Finished
Started	Wednesday, 15 January 2025, 8:02 PM
Completed	Wednesday, 15 January 2025, 9:32 PM
Duration	1 hour 30 mins

Question **1**

Correct

Marked out of 1.00

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You are a bank account hacker. Initially you have 1 rupee in your account, and you want exactly **N** rupees in your account. You wrote two hacks, first hack can multiply the amount of money you own by 10, while the second can multiply it by 20. These hacks can be used any number of time. Can you achieve the desired amount **N** using these hacks.

1

SAMPLE INPUT

2

SAMPLE OUTPUT

0

Answer: (penalty regime: 0 %)

Reset answer

1 ▼	/*
2	* Complete the 'myFunc' fun
3	*
4	* The function is expected
5	* The function accepts INTE
6	*/
7	
8	int myFunc(int n)
9 ▼	{
10	if(n==1)
11 ▼	{
12	return 1;
13	}
14	if(n<1)
15 ▼	{

```

8  int myFunc(int n)
9
10     if(n==1)
11     {
12         return 1;
13     }
14     if(n<1)
15     {
16         return 0;
17     }
18     if(n%10==0&& myFunc(n/10))
19     {
20         return 1;
21     }
22     if(n%20==0&& myFunc(n/20))
23     {
24         return 1;
25     }
26     return 0;
27
28

```

	Test	Expected
✓	printf("%d", myFunc(1))	1
✓	printf("%d", myFunc(2))	0
✓	printf("%d", myFunc(10))	1
✓	printf("%d", myFunc(25))	0
✓	printf("%d", myFunc(200))	1

Passed all tests! ✓

Question **2**

Not answered

Marked out of 1.00

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Find the number of ways that a given integer, ***X***, can be expressed as the sum of the ***Nth*** powers of unique, natural numbers.

For example, if ***X = 13*** and ***N = 2***, we have to find all combinations of unique squares adding up to ***13***. The only solution is $2^2 + 3^2$.

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):

X: the integer to sum to

N: the integer power to raise numbers to

N: the integer power to raise numbers to

Input Format

The first line contains an integer ***X***.

The second line contains an integer ***N***.

Constraints

$$1 \leq X \leq 1000$$

$$2 \leq N \leq 10$$

Output Format

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

Sample Input 0

10

2

Sample Output 0

1

Explanation 0

If $X = 10$ and $N = 2$, 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 in which 10 can be expressed as the sum of unique squares.

Sample Input 1

100

2

Sample Output 1

3

3

Explanation 1

$$100 = (10^2) = (6^2 + 8^2) = (1^2 + 3^2 + 4^2 + 5^2 + 7^2)$$

Sample Input 2

100

3

Sample Output 2

1

Explanation 2

100 can be expressed as the sum of the cubes of **1, 2, 3, 4**.

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

```

1  #include<math.h>
2  int powerSum(int x, int m, i
3  {
4      int power=pow(m,n);
5      if(power>x)
6      {
7          return 0;
8      }
9      if(power==x)
10     {
11         return 1;
12     }
13     return powerSum(x-power,
14 }

```

...

	Test
✓	printf("%d", powerSum(10, 1, 2

Passed all tests! ✓

Answer: (penalty regime: 0 %)

Reset answer

1

2

3

4

5

6

7

8

9

10

11

12

13

14

```
, int n)

er ,m+1 ,n)+powerSum(x ,m+1 ,n);
```

	Expected	Got	
erSum(10, 1, 2))	1	1	✓

Passed all tests! ✓