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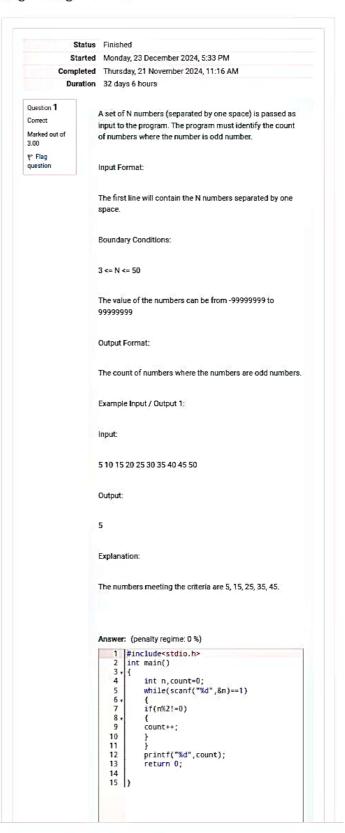




REC-CIS

GE23131-Programming Using C-2024

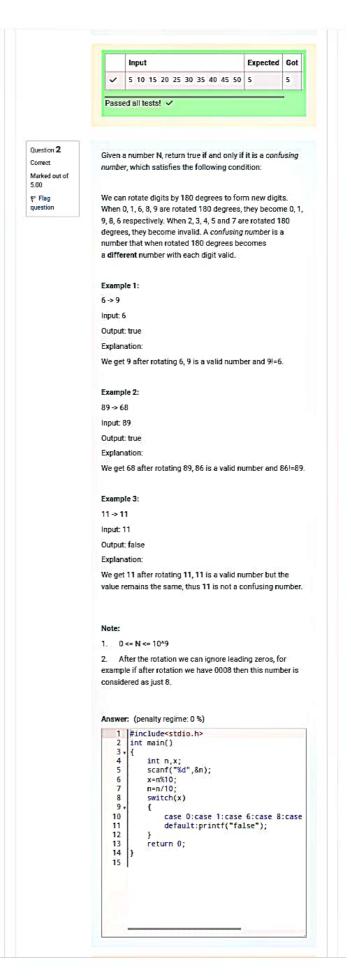








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Question 3 7.00 F Flag question

A nutritionist is labeling all the best power foods in the market. Every food item arranged in a single line, will have a value beginning from 1 and increasing by 1 for each, until all items have a value associated with them. An item's value is the same as the number of macronutrients it has. For example, food item with value 1 has 1 macronutrient, food item with value 2 has 2 macronutrients, and incrementing in this fashion.

The nutritionist has to recommend the best combination to patients, i.e. maximum total of macronutrients. However, the nutritionist must avoid prescribing a particular sum of macronutrients (an 'unhealthy' number), and this sum is known. The nutritionist chooses food items in the increasing order of their value. Compute the highest total of macronutrients that can be prescribed to a patient, without the sum matching the given 'unhealthy' number.

Here's an illustration:

Given 4 food items (hence value: 1,2,3 and 4), and the unhealthy sum being 6 macronutrients, on choosing items 1, 2, 3 -> the sum is 6, which matches the 'unhealthy' sum. Hence, one of the three needs to be skipped. Thus, the best combination is from among:

- 2+3+4=9
- 1+3+4=8
- 1+2+4=7

Since 2 + 3 + 4 = 9, allows for maximum number of macronutrients, 9 is the right answer.

Complete the code in the editor below. It must return an integer that represents the maximum total of macronutrients, modulo 1000000007 (109 + 7).

It has the following:

n: an integer that denotes the number of food items k: an integer that denotes the unhealthy number

Constraints

- $1 < n < 2 \times 10^9$
- 1 ≤ k ≤ 4 × 10¹⁵

Input Format For Custom Testing

The first line contains an integer, n, that denotes the number

The second line contains an integer, k, that denotes the unhealthy number.





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The second line contains an integer, k, that denotes the
unhealthy number.
Sample Input 0
2
Sample Output 0
3
Explanation 0
The following sequence of n = 2 food items:
1. Item 1 has 1 macronutrients.
2. 1+2=3; observe that this is the max total, and having
avoided having exactly k = 2 macronutrients.
Sample Input 1
2
Sample Output 1
Explanation 1

    Cannot use item 1 because k = 1 and sum ≡ k has to be

avoided at any time.
2. Hence, max total is achieved by sum = 0 + 2 = 2.
Sample Case 2
Sample Input For Custom Testing
Sample Input 2
Sample Output 2
Explanation 2
2 + 3 = 5, is the best case for maximum nutrients.
Answer: (penalty regime: 0 %)
   1 |#include<stdio.h>
    2 3 4 5 6 7 8 9
             long long int n,t,nut=0,i;
scanf("%lld %lld",&n,&t);
for(i=1;i<=n;i++)
{</pre>
                  nut=nut+i;
if(nut==t)
   10 .
   11 12
                        nut=nut-1;
```





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```
Sample Input 1
2
Sample Output 1
Explanation 1
1. Cannot use item 1 because k = 1 and sum = k has to be
avoided at any time.
2. Hence, max total is achieved by sum = 0 + 2 = 2.
Sample Case 2
Sample Input For Custom Testing
Sample Input 2
3
3
Sample Output 2
Explanation 2
2 + 3 = 5, is the best case for maximum nutrients.
Answer: (penalty regime: 0 %)
  long long int n,t,nut=0,i;
scanf("%lld %lld",&n,&t);
for(i=1;i<=n;i++)</pre>
            nut=nut+i;
if(nut==t)
{
    nut=nut-1;
}
  10 •
11
12
13
14
15
16
17
18 }
             printf("%11d",nut%1000000007);
return 0;
       Input Expected Got
                          z
  ~
       2
               2
                                ~
       3
               5
                          5
  ~
                                 ~
 Passed all tests! 🗸
                                               Finish review
```



