#### Week 4-2:

-- Coding-C-Language Features-Optional.

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| Status Finished  Started Monday, 23 December 2024, 5:33 PM  Completed Saturday, 23 November 2024, 2:06 PM |           |                                     |
|---|-----------|-------------------------------------|
|   | Status    | Finished                            |
| Completed Saturday, 23 November 2024, 2:06 PM   | Started   | Monday, 23 December 2024, 5:33 PM   |
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| Duration 30 days 3 hours  | Duration  | 30 days 3 hours                     |

Q1) A set of N numbers (separated by one space) is passed as in put to the program. The

program must identify the count of numbers where the number is odd number.

Input Format:

The first line will contain the N numbers separated by one space.

Boundary Conditions:

3 <= N <= 50

The value of the numbers can be from -99999999 to 99999999

Out put Format:

The count of numbers where the numbers are odd numbers.

Sam ple In put:

5 10 15 20 25 30 35 40 45 50

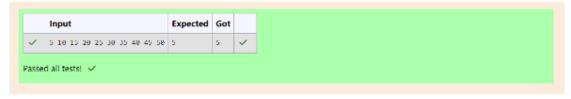
Sample Out put:

5

Code:

```
#include <stdio.h>
 2 v int main(){
        int s,v=0;
 3
        for (int i =0;i<10;i++){</pre>
 4 ▼
            scanf("%d",&s);
 5
            if (s%2!=0){
 6 +
 7
                v = v+1;
 8
 9
        printf("%d",v);
10
11
        return 0;
12 }
```

## **OUTPUT**:



# Q2)

Given a number N, return true if and only if it is a confusing number, which satisfies the following condition:

We can rotate digits by 180 degrees to form new digits. When 0, 1, 6, 8, 9 are rotated 180 degrees, they become 0, 1, 9, 8, 6 respectively. When 2, 3, 4, 5 and 7 are rotated 180 degrees, they become invalid. A confusing number is a number that when rotated 180 degrees becomes a **different** number with each digit valid.

Example 1:

Input: 6 Output: true

Explanation: We get 9 after rotating 6, 9 is a valid number and 9!= 6.

Example 2:

Input: 89 Output: true

Explanation: We get 68 after rotating 89, 86 is a valid number and 86 != 89.

Example 3:

Input: 11 Output: false

Explanation: We get 11 after rotating 11, 11 is a valid number but the value remains the same, thus 11 is not a confusing number.

Example 4:

Input: 25 Output: false

Explanation: We get an invalid number after rotating 25.

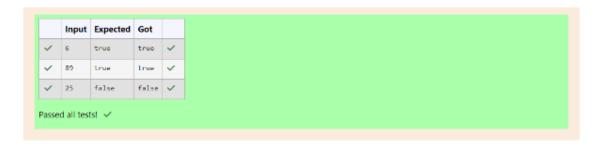
Note:

- 1. 0 <= N <= 10^9
- After the rotation we can ignore leading zeros, for example if after rotation we have 0008 then this number is considered as just 8.

## Code:

```
1 #include <stdio.h>
 2 v int main(){
 3
        int a,c,s,u=0,b=0;
        scanf("%d",&a);
 4
 5 v
        while(b==0){
             u = u+1;
 6
 7
             c=a%10;
 8
             a=a/10;
             if (u==7){
 9 🔻
10
                break;
11
            else if (c==0||c==1||c==6||c==8||c==9){
12 v
13
             // printf("%d",c);
14
                 s = 1;
15
            }
16 *
            else {
17
                 s = 0;
18
                 break;
19
           // printf("%d",c);
20
21
        if(s==1){
22 v
            printf("true");
23
24
25 1
        else {
            printf("false");
26
27
28
        return 0;
29 }
```

#### **OUTPUT**:



Q3) 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 jashion.

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:

 $\cdot 2 + 3 + 4 = 9$ 

```
\cdot 1 + 3 + 4 = 8
\cdot 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 100000007
(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 × 109
· 1 ≤ k ≤ 4 × 1015
In put Format For Custom Testing
The first line contains an integer, n, that denotes the number of
food items. The second line
contains an integer, k, that denotes the unhealthy number.
Sample Input 0
2
2
Sample Out put 0
3
Code:
```

```
1 #include <stdio.h>
 2 v int main(){
        long long int n,t,i,nut=0;
 3
        scanf("%11d%11d",&n,&t);
 4
 5 *
        for (i=1;i<=n;i++){
 6
            nut = nut+i;
 7 •
            if (nut==t){
 8
                nut=nut-1;
 9
10
        printf("%lld",nut%1000000007);
11
12 }
```

#### **OUTPUT**:

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ~ | 2     | 3        | 3   | ~ |
| ~ | 2     | 2        | 2   | ~ |
| ~ | 3     | 5        | 5   | ~ |

Passed all tests! <