REC-CIS Maanisha E - 240901055

GE23131-Programming Using C-2024

Quiz navigation

1

2

3

[Show one page at a time](http://www.rajalakshmicolleges.org/moodle/mod/quiz/review.php?attempt=91020&cmid=103&showall=0)

Finish review

|  |  |
| --- | --- |
| **Status** | Finished |
| **Started** | Monday, 23 December 2024, 5:33 PM |
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Alice and Bob are playing a game called "Stone Game". Stone game is a two-player game. Let N be the total number of stones. In each turn, a player can remove either one stone or four stones. The player who picks the last stone, wins. They follow the "Ladies First" norm. Hence Alice is always the one to make the first move. Your task is to find out whether Alice can win, if both play the game optimally.

Input Format



Question **1**

Correct

Marked out of 3.00

Flag question

First line starts with T, which is the number of test cases. Each test case will contain N number of stones.

Output Format

Print "Yes" in the case Alice wins, else print "No".

Constraints

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1<=T<=1000



1<=N<=10000

Sample Input and Output

Input

3

1

6

7

Output

Yes Yes No

**Answer:** (penalty regime: 0 %)

1. #include<stdio.h>
2. int main()

3 ▼ {

1. int T;
2. scanf("%d",&T);
3. while(T--)

7 ▼ {

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8 int N;

9 scanf("%d",&N);

10 if(N%8==0||N%8==2||N%8==5||N%8==7)

11 ▼

12

13

14

15 ▼

16

17

18

{

}

else

{

}

}

printf("No\n");

printf("Yes\n");

1. return 0;



You are designing a poster which prints out numbers with a unique style applied to

each of them. The styling is based on the number of closed paths or holes present in a given number.

The number of holes that each of the digits from 0 to 9 have are equal to the number

of closed paths in the digit. Their values are:

1. }



Passed all tests!

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Input** | **Expected** | **Got** |  |
|  | 3  1  6  7 | Yes Yes No | Yes Yes No |  |



Question **2**

Correct

Marked out of 5.00

Flag question

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1, 2, 3, 5, and 7 = 0 holes.

0, 4, 6, and 9 = 1 hole.

8 = 2 holes.

Given a number, you must determine the sum of the number of holes for all of its digits. For example, the number 819 has 3 holes.

Complete the program, it must must return an integer denoting the total number of holes in num.

Constraints

1 ≤ num ≤ 109

Input Format For Custom Testing

There is one line of text containing a single integer num, the value to process.

Sample Input

630

Sample Output

2

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Explanation



Add the holes count for each digit, 6, 3 and 0. Return 1 + 0 + 1 = 2.

Sample Case 1

Sample Input

1288

Sample Output

4

Explanation

Add the holes count for each digit, 1, 2, 8, 8. Return 0 + 0 + 2 + 2 = 4.

**Answer:** (penalty regime: 0 %)

1

#include<stdio.h>

2 int main()

3 ▼ {

1. int holes=0;
2. int num;
3. scanf("%d",&num);
4. while(num!=0)

8 ▼ {

1. int d=num%10;
2. if(d==1||d==2||d==3||d==5||d==7);
3. else if(d==8)
4. holes+=2;

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13 else

14 holes++;

15 num/=10;



Passed all tests!

The problem solvers have found a new Island for [coding](http://www.rajalakshmicolleges.org/moodle/mod/quiz/view.php?id=181) and named it as Philaland. These smart people were given a task to make a purchase of items at the Island easier by distributing various coins with different values. Manish has come up with a solution that if we make coins category starting from $1 till the maximum price of the item present on Island, then we can purchase any item easily. He added the following

example to prove his point.

Let’s suppose the maximum price of an item is 5$ then we can make coins of {$1, $2,

$3, $4, $5}to purchase any item ranging from $1 till $5.

Now Manisha, being a keen observer suggested that we could actually minimize the

number of coins required and gave following distribution {$1, $2, $3}. According to him any item can be purchased one time ranging from $1 to $5. Everyone was impressed

|  |  |  |  |
| --- | --- | --- | --- |
| 16  17 ▼ |  | }  { |  |
| 18 |  |  | printf("%d",holes); |
| 19 |  | } |  |
| 20 | } |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Input** | **Expected** | **Got** |  |
|  | 630 | 2 | 2 |  |
|  | 1288 | 4 | 4 |  |



Question **3**

Correct

Marked out of 7.00

Flag question

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with both of them. Your task is to help Manisha come up with a minimum number of

denominations for any arbitrary max price in Philaland.

**Input Format**

Contains an integer N denoting the maximum price of the item present on Philaland.

**Output Format**

Print a single line denoting the minimum number of denominations of coins required.

**Constraints**

1<=T<=100

1<=N<=5000

**Refer the sample output for formatting**

**Sample Input 1:**

10

**Sample Output 1:**

4

**Sample Input 2:**

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5

**Sample Output 2:**

3

**Explanation:**

For test case 1, N=10.

According to Manish {$1, $2, $3,… $10} must be distributed.

But as per Manisha only {$1, $2, $3, $4} coins are enough to purchase any item ranging from $1 to $10. Hence minimum is 4. Likewise denominations could also be {$1, $2, $3,

$5}. Hence answer is still 4.

For test case 2, N=5.

According to Manish {$1, $2, $3, $4, $5} must be distributed.

But as per Manisha only {$1, $2, $3} coins are enough to purchase any item ranging from $1 to $5. Hence minimum is 3. Likewise, denominations could also be {$1, $2, $4}. Hence answer is still 3.

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**Answer:** (penalty regime: 0 %)

1 #include<stdio.h>



Passed all tests!

2 int main()

3 ▼ {

1. int n;
2. scanf("%d",&n);
3. int coins=0,max=0,demo=1;
4. while(max<n)

8 ▼ {

1. coins++;
2. max+=demo;
3. demo=max+1;

12 }

1. printf("%d",coins);
2. return 0;
3. }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Input** | **Expected** | **Got** |  |
|  | 10 | 4 | 4 |  |
|  | 5 | 3 | 3 |  |
|  | 20 | 5 | 5 |  |
|  | 500 | 9 | 9 |  |
|  | 1000 | 10 | 10 |  |

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Finish review