

Assignment #1: 自主学习

Updated 0110 GMT+8 Sep 10, 2024

2024 fall, Compiled by ==祁黄奕、城市与环境学院==

1. 题目

02733: 判断闰年

<http://cs101.openjudge.cn/practice/02733/>

思路:

根据闰年的两种判定条件，可得当年份可被 400 整除或可被 4 整除但不能被 100 整除时，该年份为闰年；其余年份为平年。

代码

```
```python
#
```
```

```
year=int(input())
if year%400==0:
    print("Y")
elif year%4==0 and year%100!=0:
    print("Y")
else:
    print("N")
```

代码运行截图 ==（至少包含有“Accepted”）==



02750: 鸡兔同笼

<http://cs101.openjudge.cn/practice/02750/>

思路:

已知一只鸡有两只脚，一只兔子有四只脚。当脚数为偶数时，若数字可被 4 整除，则最少有总数除以 4 只动物，最多有总数除以 2 只动物；若可被 2 整除但未必能被 4 整除，则最少有总数整除 4 加总数减 4 乘以总数整除 4 的差的和整除 2 只动物，最多有总数整除 2 只动物。若数字为单数，则不符合情况，输出 0 0。

代码

```
```python
#
```

a = int(input())

if a % 4 == 0:
    minnum=a//4
    maxnum=a//2
elif a % 2==0:
    minnum = a // 4 + (a-4*(a//4))//2
    maxnum = a // 2
elif a % 2 != 0:
    minnum = 0
    maxnum = 0

print(minnum, maxnum)
```

代码运行截图 ==（至少包含有“Accepted”）==

 CS101 / 题库（包括计概、数算题目）

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#46131363提交状态

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状态: Accepted

源代码

```
a = int(input())

if a % 4 == 0:
    minnum=a//4
    maxnum=a//2
elif a % 2==0:
    minnum = a // 4 + (a-4*(a//4))//2
    maxnum = a // 2
elif a % 2 != 0:
    minnum = 0
    maxnum = 0

print(minnum, maxnum)
```

基本信息

```
#: 46131363
题目: 02750
提交人: qhy
内存: 3576kB
时间: 23ms
语言: Python3
提交时间: 2024-09-20 15:19:06
```

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50A. Domino piling

greedy, math, 800, <http://codeforces.com/problemset/problem/50/A>

思路:

用总面积除以单个面积，确保整除即可

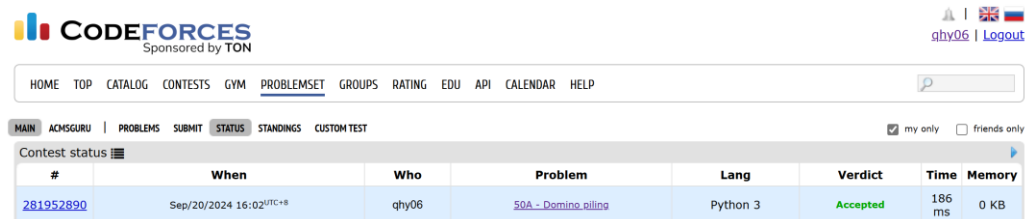
代码

```
```python
#
```

```
```
```

```
M,N=map(int,input().split())
a=2
print(M*N//2)
```

代码运行截图 == (AC 代码截图，至少包含有"Accepted") ==



The screenshot shows the Codeforces website interface. At the top, there's a navigation bar with links like HOME, TOP, CATALOG, CONTESTS, GYM, PROBLEMSET, GROUPS, RATING, EDU, API, CALENDAR, and HELP. Below this is a contest status table. The table has columns for #, When, Who, Problem, Lang, Verdict, Time, and Memory. A single row is visible with the following data: # 281952890, When Sep/20/2024 16:02 UTC+8, Who qhy06, Problem 50A - Domino piling, Lang Python 3, Verdict Accepted, Time 186 ms, and Memory 0 KB.

| # | When | Who | Problem | Lang | Verdict | Time | Memory |
|-----------|-------------------------|-------|---------------------|----------|----------|--------|--------|
| 281952890 | Sep/20/2024 16:02 UTC+8 | qhy06 | 50A - Domino piling | Python 3 | Accepted | 186 ms | 0 KB |

1A. Theatre Square

math, 1000, <https://codeforces.com/problemset/problem/1/A>

思路:

总边长 m, n 分别除以砖块边长 a 并都向上取整，两数相乘可得总需要的砖块数。

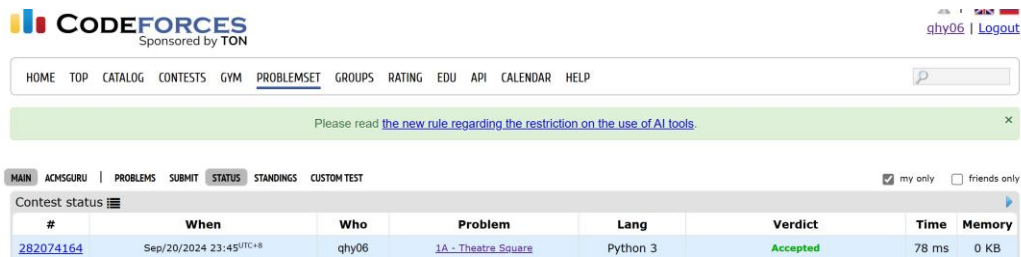
代码

```
```python
#
```

```
```
```

```
n,m,a=map(int,input().split())
print((-n//a)*(-m//a))
```

代码运行截图 == (AC 代码截图, 至少包含有"Accepted") ==



The screenshot shows the Codeforces website interface. At the top, there's a navigation bar with links like HOME, TOP, CATALOG, CONTESTS, GYM, PROBLEMS, GROUPS, RATING, EDU, API, CALENDAR, and HELP. Below this is a green banner with a message about AI tool usage. The main content area shows the 'Contest status' for problem 112A. The table below shows the submission details:

| # | When | Who | Problem | Lang | Verdict | Time | Memory |
|-----------|-------------------------|-------|---------------------|----------|----------|-------|--------|
| 282074164 | Sep/20/2024 23:45 UTC+8 | ghy06 | 1A - Theatre Square | Python 3 | Accepted | 78 ms | 0 KB |

112A. Petya and Strings

implementation, strings, 1000,

<http://codeforces.com/problemset/problem/112/A>

思路:

输入两串字符, 将其取小写后, 可直接得出其整体字符序列大小。判断字符串大小时, 加减运算 True 是 1 False 是 0

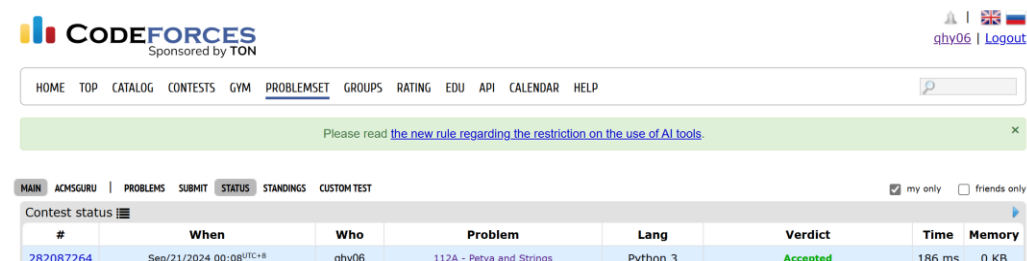
代码

```
```python
#
```

```
```
```

```
i=input
a=i().lower()
b=i().lower()
print((a>b) - (a<b))
```

代码运行截图 == (AC 代码截图, 至少包含有"Accepted") ==



The screenshot shows the Codeforces website interface. At the top, there's a navigation bar with links like HOME, TOP, CATALOG, CONTESTS, GYM, PROBLEMS, GROUPS, RATING, EDU, API, CALENDAR, and HELP. Below this is a green banner with a message about AI tool usage. The main content area shows the 'Contest status' for problem 112A. The table below shows the submission details:

| # | When | Who | Problem | Lang | Verdict | Time | Memory |
|-----------|-------------------------|-------|--------------------------|----------|----------|--------|--------|
| 282087264 | Sep/21/2024 00:08 UTC+8 | ghy06 | 112A - Petya and Strings | Python 3 | Accepted | 186 ms | 0 KB |

231A. Team

bruteforce, greedy, 800,

<http://codeforces.com/problemset/problem/231/A>

思路：
输入问题数后，通过循环确认每行“1”的个数 ≥ 2 即可。

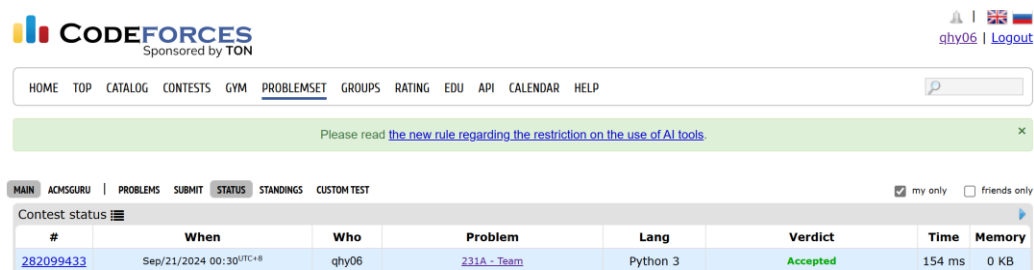
```
##### 代码

```python
#

```

print(sum(input().count('1')>=2 for x in range(int(input()))))
```

代码运行截图 == (AC 代码截图，至少包含有“Accepted”) ==



2. 学习总结和收获

高一期间曾短暂地接触过一段时间的编程，当时比较不认真，对于许多基础语法没有清楚的认识。虽然题目也能做出来，不过大都不是全靠自己的。此次计概作业让我对编程有了新的认识，也开始愿意去研究相关的知识，体会到了自己编写代码的乐趣。其中大量数学和逻辑思维的运用，也让我意识到了数学思维对于计概的重要性。