

Assignment #1: 自主学习

Updated 0110 GMT+8 Sep 10, 2024

2024 fall, Compiled by ==徐贤天 工学院==

说明:

1) 请把每个题目解题思路 (可选), 源码Python, 或者C++ (已经在Codeforces/Openjudge上AC), 截图 (包含Accepted), 填写到下面作业模版中 (推荐使用 typora <https://typoraio.cn>, 或者用 word)。AC 或者没有AC, 都请标上每个题目大致花费时间。

3) 课程网站是Canvas平台, <https://pku.instructure.com>, 学校通知9月19日导入选课名单后启用。作业写好后, 保留在自己手中, 待9月20日提交。

提交时候先提交pdf文件, 再把md或者doc文件上传到右侧“作业评论”。Canvas需要有同学清晰头像、提交文件有pdf、“作业评论”区有上传的md或者doc附件。

4) 如果不能在截止前提交作业, 请写明原因。

1. 题目

02733: 判断闰年

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

思路:

代码

```
#
y = int(input())
if y % 3200 == 0:
    print("N")
elif y % 3200 != 0 and y % 400 != 0 and y % 100 == 0:
    print("N")
elif y % 4 == 0:
    print("Y")
else:
    print("N")
```

代码运行截图 == (至少包含有"Accepted") ==

状态: Accepted

源代码

```
y = int(input())
if y % 3200 == 0:
    print("N")
elif y % 3200 != 0 and y % 400 != 0 and y % 100 == 0:
    print("N")
elif y % 4 == 0:
    print("Y")
else:
    print("N")
```

基本信息

#: 46044992
题目: 02733
提交人: Aunixt
内存: 3600kB
时间: 19ms
语言: Python3
提交时间: 2024-09-10 23:53:24

02750: 鸡兔同笼

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

思路:

代码

```
#
a = int(input())
if a % 4 == 0:
    print(int(a/4), int(a/2))
elif a % 2 == 0:
    print(int((a+2)/4), int(a/2))
else:
    print(0, 0)
```

代码运行截图 == (至少包含有"Accepted") ==

状态: Accepted

源代码

```
a = int(input())
if a % 4 == 0:
    print(int(a/4), int(a/2))
elif a % 2 == 0:
    print(int((a+2)/4), int(a/2))
else:
    print(0, 0)
```

基本信息

#: 46042857
题目: 02750
提交人: Aunixt
内存: 7424kB
时间: 23ms
语言: Python3
提交时间: 2024-09-10 19:47:35

50A. Domino piling

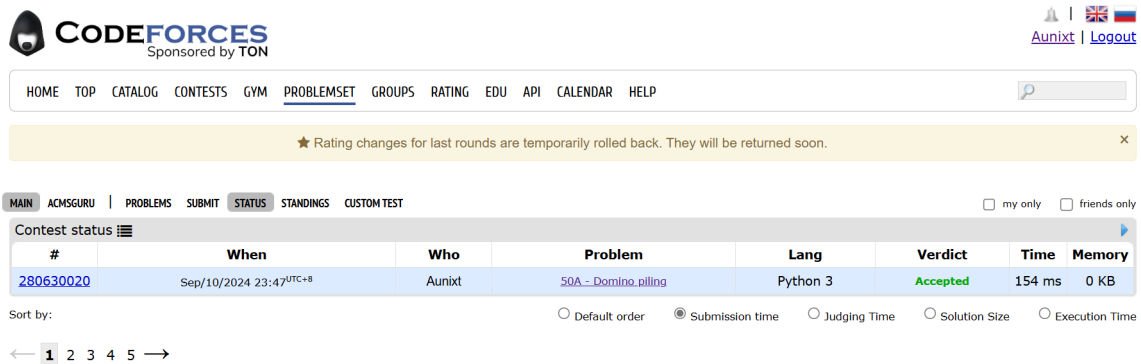
greedy, math, 800, <http://codeforces.com/problemset/problem/50/A>

思路：只有两种情况：如果长和宽都是奇数，则最终空出一个空；其他情况都可以排满

代码

```
#
user_input = input()
values=user_input.split()
value1=int(values[0])
value2=int(values[1])
if value1 % 2 != 0 and value2 % 2 != 0:
    ret=int((value1*value2-1)/2)
else:
    ret=int(value1*value2/2)
print(ret)
```

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 yellow banner with a message about rating changes. The main content area shows the contest status for problem 50A. A table lists the submission details:

#	When	Who	Problem	Lang	Verdict	Time	Memory
280630020	Sep/10/2024 23:47 UTC+8	Aunixt	50A - Domino piling	Python 3	Accepted	154 ms	0 KB

Below the table, there's a 'Sort by' section with radio buttons for Default order, Submission time (selected), Judging Time, Solution Size, and Execution Time. At the bottom, there's a pagination bar showing '1' as the current page.

1A. Theatre Square


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


思路：如果恰好整除，则直接相乘；如果不恰好，则向上取整后相乘

代码

```
#
m, n, a = map(int, input().split())
if m % a == 0 and n % a == 0:
    ret=int((m/a)*(n/a))
elif m % a == 0 and n % a != 0:
    ret=int((m/a)*(n//a+1))
elif m % a != 0 and n % a == 0:
    ret=int((m//a+1)*(n/a))
else:
    ret=(m//a+1)*(n//a+1)
print(ret)
```

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

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PROBLEMS SUBMIT CODE MY SUBMISSIONS **STATUS** STANDINGS CUSTOM INVOCATION

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
280758592	Practice: Aunixt	1A - 10	Python 3	Accepted	77 ms	12 KB	2024-09-11 19:07:28	2024-09-11 19:07:28		Compare

→ Source

```
m, n, a = map(int, input().split())
if m % a == 0 and n % a == 0:
    ret=int((m/a)*(n/a))
elif m % a == 0 and n % a != 0:
    ret=int((m/a)*(n//a+1))
elif m % a != 0 and n % a == 0:
    ret=int((m//a+1)*(n/a))
else:
    ret=(m//a+1)*(n//a+1)
print(ret)
```

[Click to see test details](#)

112A. Petya and Strings


implementation, strings, 1000, <http://codeforces.com/problemset/problem/112/A>




思路：先把大写字母全部转为小写，然后直接比较

代码

```
#
v1 = input().lower()
v2 = input().lower()
if v1 < v2:
    print(-1)
elif v1 > v2:
    print(1)
else:
    print(0)
```

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

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PROBLEMS SUBMIT CODE MY SUBMISSIONS **STATUS** HACKS ROOM STANDINGS CUSTOM INVOCATION

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
280869533	Practice: Aunixt	112A - 11	Python 3	Accepted	186 ms	16 KB	2024-09-12 17:14:28	2024-09-12 17:14:28		Compare

→ Source

```
v1 = input().lower()
v2 = input().lower()
if v1 < v2:
    print(-1)
elif v1 > v2:
    print(1)
else:
    print(0)
```

Click to see test details

231A. Team

bruteforce, greedy, 800, <http://codeforces.com/problemset/problem/231/A>

思路：利用列表实现计数

代码

```
#
n = int(input())
sum = 0
for i in range(n):
    a, b, c = map(int, input().split())
    l = [a, b, c]
    m = l.count(1)
    if m >= 2:
        sum += 1
print(sum)
```

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

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
280871312	Practice: Aunixt	231A - 11	Python 3	Accepted	154 ms	12 KB	2024-09-12 17:26:31	2024-09-12 17:26:31	★	Compare

→ Source

Copy

```
n = int(input())
sum = 0
for i in range(n):
    a, b, c = map(int, input().split())
    l = [a, b, c]
    m = l.count(1)
    if m >= 2:
        sum += 1
print(sum)
```

[Click](#) to see test details

2. 学习总结和收获

==如果作业题目简单，有否额外练习题目，比如：OJ“计概2024fall每日选做”、CF、LeetCode、洛谷等网站题目。==

额外练习了2024fall 每日选做中从0823到0827的800难度题目，从0903到0905的900难度题目，以及中秋的部分题目。

认识到AI工具的强大，好多不懂的问题都可以直接向它提出，解答也非常的清晰。

