assignment4

Assignment #4: T-primes + 贪心

Updated 1814 GMT+8 Sep 30, 2025

2025 fall, Complied by 王辰昀 25物院

> **说明：**
>
> 1. **解题与记录：**
>
> 对于每一个题目，请提供其解题思路（可选），并附上使用Python或C++编写的源代码（确保已在OpenJudge， Codeforces，LeetCode等平台上获得Accepted）。请将这些信息连同显示“Accepted”的截图一起填写到下方的作业模板中。（推荐使用Typora https://typoraio.cn 进行编辑，当然你也可以选择Word。）无论题目是否已通过，请标明每个题目大致花费的时间。
>
> 2. 提交安排：**提交时，请首先上传PDF格式的文件，并将.md或.doc格式的文件作为附件上传至右侧的“作业评论”区。确保你的Canvas账户有一个清晰可见的本人头像，提交的文件为PDF格式，并且“作业评论”区包含上传的.md或.doc附件。
> 3. **延迟提交：**如果你预计无法在截止日期前提交作业，请提前告知具体原因。这有助于我们了解情况并可能为你提供适当的延期或其他帮助。
>
> 请按照上述指导认真准备和提交作业，以保证顺利完成课程要求。

1. 题目

34B. Sale

greedy, sorting, 900, https://codeforces.com/problemset/problem/34/B

思路：

代码

```
#
n,m=map(int,input().split())
a=list(map(int,input().split()))
a.sort()
su=0
for i in range(n):
```

```
    if a[i]<=0:
        su+=1
print(-sum(a[:min(su,m)]))
```

代码运行截图 （至少包含有"Accepted"）

342157607	Oct/06/2025 13:03 UTC+8	Rwang_pku	34B - Sale	PyPy 3-64	Accepted	216 ms	0 KB

160A. Twins

greedy, sortings, 900, https://codeforces.com/problemset/problem/160/A

思路：

代码

```
n=int(input())
a=list(map(int,input().split()))
a.sort(reverse=True)
la=sum(a)
taken=0
for i in range(n):
    taken+=a[i]
    if taken>la//2:
        print(i+1)
        break
```

代码运行截图 （至少包含有"Accepted"）

342158234	Oct/06/2025 13:09 UTC+8	Rwang_pku	160A - Twins	PyPy 3-64	Accepted	216 ms	0 KB

1879B. Chips on the Board

constructive algorithms, greedy, 900, https://codeforces.com/problemset/problem/1879/B

思路：

代码

```
for _ in range(int(input())):
    n = int(input())
    a=list(map(int,input().split()))
    b=list(map(int,input().split()))
    ma,mb=min(a),min(b)
    print(min(ma*n+sum(b),mb*n+sum(a)))
```

代码运行截图 （至少包含有"Accepted"）

342160344	Oct/06/2025 13:32UTC+8	Rwang_pku	1879B - Chips on the Board	PyPy 3-64	Accepted	265 ms	47600 KB

M01017: 装箱问题

greedy, http://cs101.openjudge.cn/pctbook/M01017/

思路：

4，5，6肯定占一个箱子，四个3占一个箱子，2能够插空在3和4中，剩下的空间再放1

代码

```
#
import math
rem=[0,5,3,1]
while True:
    a,b,c,d,e,f=map(int,input().split())
    if a+b+c+d+e+f==0:
        break
    su=d+e+f+math.ceil(c/4)
    if b>5*d+rem[c%4]:
        su+=math.ceil((b-5*d-rem[c%4])/9)
    left=su*36-4*b-9*c-16*d-25*e-36*f
    if a>left:
        su+=math.ceil((a-left)/36)
    print(su)
```

代码运行截图 （至少包含有"Accepted"）

#50238536提交状态

查看 提交 统计 提问

状态: Accepted

源代码

```
import math
rem=[0,5,3,1]
while True:
    a,b,c,d,e,f=map(int,input().split())
    if a+b+c+d+e+f==0:
        break
    su=d+e+f+math.ceil(c/4)
    if b>5*d+rem[c%4]:
        su+=math.ceil((b-5*d-rem[c%4])/9)
    left=su*36-4*b-9*c-16*d-25*e-36*f
    if a>left:
        su+=math.ceil((a-left)/36)
    print(su)
```

基本信息

#: 50238536
题目: M01017
提交人: 25n2500011422
内存: 3644kB
时间: 34ms
语言: Python3
提交时间: 2025-10-06 14:20:29

English 帮助 关于

M01008: Maya Calendar

implementation, http://cs101.openjudge.cn/practice/01008/

思路：

代码

```
ma=
{'pop':0,'no':20,'zip':40,'zotz':60,'tzec':80,'xul':100,'yoxkin':120,'mol':140
,'chen':160,'yax':180,'zac':200,'ceh':220,'mac':240,'kankin':260,'muan':280,'p
ax':300,'koyab':320,'cumhu':340,'uayet':360}
mb=
['imix','ik','akbal','kan','chicchan','cimi','manik','lamat','muluk','ok','chu
en','eb','ben','ix','mem','cib','caban','eznab','canac','ahau']
t=int(input())
print(t)
for _ in range(t):
    a,b,c=input().split()
    a=a[:len(a)-1]
    a,c=int(a),int(c)
    t=c*365+ma[b]+a
    p=t%13+1
    q=mb[t%20]
    r=t//260
    print(p,q,r)
```

代码运行截图 （至少包含有"Accepted"）

230B. T-primes（选做）

binary search, implementation, math, number theory, 1300, http://codeforces.com/problemset/problem/230/B

思路：

代码

```
n=int(input())
nums=list(map(int,input().split()))
primes={}
smallprimes=[]
tinyprimes=[2,3,5,7,11,13,17,19,23,29,31]
for r in range(32,1000):
    boo=1
    for q in tinyprimes:
        if r%q==0:
            boo=0
            break
    if boo==1:
        smallprimes.append(r)
smallprimes=tinyprimes+smallprimes
for u in range(1000,1000000):
    oob=1
    for t in smallprimes:
        if u%t==0:
            oob=0
            break
    if oob==1:
        primes[u]=1



for i in range(n):
    x=nums[i]
    boo=1
    if x>1:
        if x**0.5==int(x**0.5):
            y=x**0.5
            if (y in primes and primes[y]==1)or y in smallprimes:
                print('YES')
            else:
                print('NO')
        else:
            print('NO')
    else:
        print('NO')
```

代码运行截图（至少包含有"Accepted"）

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
338691066	Practice: Rwang_pku	230B - 28	PyPy 3-64	Accepted	1092 ms	18048 KB	2025-09-15 11:05:48	2025-09-15 11:05:48	☆	Compare

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2025fall每日选做”、CF、LeetCode、洛谷等网站题目。

国庆节补完四次作业来写个第一个月的总结。我开学以后才打听到闫老师班，因此起步有一些晚。九月先是花了一周配置环境，熟悉基本语法。然后就是每天做两三道题目练手，基本上都是“constructive algorithm”“implementation”的类型，如果参考了题解就会手动记录解题思路和关键想法。接下来准备转向具体算法的学习。在完成作业之余，CF上的题目我也常常尝试后续题号（CDEF）的题目，有几个set甚至接近ak

My Submissions

#	When	Who	Problem	Lang	Verdict	Time	Memory
339338767	Sep/19/2025 13:33 UTC+8	Rwang_pku	E - Lucky Permutation	PyPy 3-64	Accepted	186 ms	1400 KB
339338523	Sep/19/2025 13:29 UTC+8	Rwang_pku	E - Lucky Permutation	PyPy 3-64	Wrong answer on test 18	186 ms	1400 KB
339338111	Sep/19/2025 13:23 UTC+8	Rwang_pku	E - Lucky Permutation	PyPy 3-64	Wrong answer on test 13	154 ms	1400 KB
339337478	Sep/19/2025 13:13 UTC+8	Rwang_pku	E - Lucky Permutation	PyPy 3-64	Runtime error on test 9	216 ms	2800 KB
339337390	Sep/19/2025 13:12 UTC+8	Rwang_pku	E - Lucky Permutation	PyPy 3-64	Wrong answer on test 8	216 ms	1400 KB
339336983	Sep/19/2025 13:05 UTC+8	Rwang_pku	E - Lucky Permutation	PyPy 3-64	Wrong answer on test 6	186 ms	1400 KB
339229752	Sep/18/2025 16:57 UTC+8	Rwang_pku	D - Lucky Transformation	PyPy 3-64	Accepted	186 ms	6300 KB
339219112	Sep/18/2025 15:26 UTC+8	Rwang_pku	D - Lucky Transformation	PyPy 3-64	Time limit exceeded on test 8	2000 ms	1400 KB
339214795	Sep/18/2025 14:56 UTC+8	Rwang_pku	C - Lucky Sum	PyPy 3-64	Accepted	93 ms	1500 KB
339214145	Sep/18/2025 14:51 UTC+8	Rwang_pku	C - Lucky Sum	PyPy 3-64	Runtime error on test 8	93 ms	2900 KB
339209622	Sep/18/2025 14:04 UTC+8	Rwang_pku	B - Lucky Substring	PyPy 3-64	Accepted	186 ms	0 KB
339209521	Sep/18/2025 14:03 UTC+8	Rwang_pku	B - Lucky Substring	PyPy 3-64	Wrong answer on test 1	124 ms	0 KB
339208524	Sep/18/2025 13:52 UTC+8	Rwang_pku	A - Lucky Division	PyPy 3-64	Accepted	186 ms	0 KB

Codeforces Beta Round 91 (Div. 2 Only)

Finished

Practice

☆

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest