

# Assignment #4: T-primes + 贪心

Updated 0337 GMT+8 Oct 15, 2024

2024 fall, Compiled by 同学的姓名、院系

## 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

### 34B. Sale

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

思路：

代码

```
#
n,m=map(int,input().split())
l=list(map(int,input().split()))
an=[]
get=0
for i in range(n):
    if get<m:
        if min(l)<0:
            g=min(l)
            get=get+1
            l.remove(g)
            an.append(g)
        else:
            break
carry=-sum(an)
print(carry)
```

代码运行截图 (至少包含有"Accepted")

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
281593133	Practice: SiyuanWang	<a href="#">34B</a> - 4	Python 3	Accepted	124 ms	28 KB	2024-09-17 13:23:33	2024-09-17 13:23:33		<a href="#">Compare</a>

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```
n,m=map(int,input().split())
l=list(map(int,input().split()))
an=[]
get=0
for i in range(n):
    if get<m:
        if min(l)<0:
            g=min(l)
            get=get+i
            l.remove(g)
            an.append(g)
        else:
            break
carry=sum(an)
print(carry)
```

160A. Twins

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

思路:

代码

```
n=int(input())
l=list(map(int,input().split()))
m=[ ]
c=0
while sum(m)<=sum(l):
    g=max(l)
    m.append(g)
    l.remove(g)
print(len(m))
```

代码运行截图 == (至少包含有"Accepted") ==

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
281599211	Practice: SiyuanWang	<a href="#">160A</a> - 20	Python 3	Accepted	154 ms	16 KB	2024-09-17 14:27:28	2024-09-17 14:27:28		<a href="#">Compare</a>

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```
n=int(input())
l=list(map(int,input().split()))
m=[ ]
c=0
while sum(m)<=sum(l):
    g=max(l)
    m.append(g)
    l.remove(g)
print(len(m))
```

[Click](#) to see test details

1879B. Chips on the Board

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

思路:

代码

```
t=int(input())
for pii in range(t):
    n=int(input())
    i=list(map(int,input().split()))
    j=list(map(int,input().split()))
    sumi=sum(i)+n*min(j)
    sumj=sum(j)+n*min(i)
    print(min(sumi,sumj))
```

代码运行截图 (至少包含有"Accepted")

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
281602976	Practice: SiyuanWang	<a href="#">1879B</a> - 10	Python 3	Accepted	265 ms	49740 KB	2024-09-17 15:04:29	2024-09-17 15:04:29	★	<button>Compare</button>

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```
t=int(input())
for pii in range(t):
    n=int(input())
    i=list(map(int,input().split()))
    j=list(map(int,input().split()))
    sumi=sum(i)+n*min(j)
    sumj=sum(j)+n*min(i)
    print(min(sumi,sumj))
```

158B. Taxi

\*special problem, greedy, implementation, 1100, <https://codeforces.com/problemset/problem/158/B>

思路:

代码

```
n=int(input())
l=[0,0,0,0]
li=list(map(int,input().split()))
l[0]=li.count(1)
l[1]=li.count(2)
l[2]=li.count(3)
l[3]=li.count(4)
c=l[3]
l[3]=0
pp=min(l[0],l[2])
c=c+min(l[0],l[2])
l[0]=l[0]-pp
l[2]=l[2]-pp
c=c+l[1]//2
l[1]=l[1]%2
if l[1]!=0:
    c=c+1
    l[1]=0
    l[0]=l[0]-min(2,l[0])
if l[2]!=0:
```

```

    c=c+l[2]
    l[2]=0
    if l[0]!=0:
        c=c+l[0]//4
        if l[0]%4!=0:
            c=c+1
            l[0]=0
print(c)
```

代码运行截图 (至少包含有"Accepted")

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
286670932	Practice: SiyuanWang	158B - 10	Python 3	Accepted	248 ms	3368 KB	2024-10-19 11:47:41	2024-10-19 11:47:41	★	Compare

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```
n=int(input())
l=[0,0,0,0]
li=list(map(int,input().split()))
l[0]=li.count(1)
l[1]=li.count(2)
l[2]=li.count(3)
l[3]=li.count(4)
c=l[3]
l[3]=0
pp=min(l[0],l[2])
c=c+min(l[0],l[2])
```

\*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())
num=list(map(int,input().split()))
sqnum=[]
for i in num:
    if i**0.5==int(i**0.5):
        sqnum.append(int(i**0.5))
    else:
        sqnum.append(0)
m=max(sqnum)
l=[True]*(m+1)
for i in range(2,m+1):
    if l[i]:
        for j in range(i**2,m+1,i):
            l[j]=False
l[0]=False
t=[l[x] for x in sqnum]
for i in range(n):
    if num[i]==1 or 0:
        print('NO')
    elif t[i]:
        print('YES')
    else:
```

```
print('NO')
```

代码运行截图 (至少包含有"Accepted")

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
286348494	Practice: SiyuanWang	230B - 28	Python 3	Accepted	1312 ms	18940 KB	2024-10-17 12:05:05	2024-10-17 12:05:05	★	Compare

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```
n=int(input())
num=list(map(int,input().split()))
sqnum=[]
for i in num:
    if i**0.5==int(i**0.5):
        sqnum.append(int(i**0.5))
    else:
        sqnum.append(0)
n=max(sqnum)
l=[True]*(n+1)
for i in range(2,n+1):
    if l[i]:
        for j in range(i**2,n+1,i):
            l[j]=False
```

\*12559: 最大最小整数 (选做)

greedy, strings, sortings, <http://cs101.openjudge.cn/practice/12559>

思路:

代码

```
n=int(input())
li=input().split()
l=[]
lang=[len(i) for i in li]
ma=max(lang)
for i in li:
    p=list(i)
    la=len(p)
    while len(p) < ma:
        p=p+p[0:min(ma-len(p),len(p))]
    p=list(map(int,p))
    pp=[p,la]
    l.append(pp)
l.sort(reverse=True)
ma=''
for i in l:
    for j in i[0][:i[1]]:
        ma=ma+str(j)
mi=''
for i in range(len(l)):
    for j in l[len(l)-1-i][0][:l[len(l)-1-i][1]]:
        mi=mi+str(j)
print(int(ma),int(mi))
```

代码运行截图 (至少包含有"Accepted")

#46600246提交状态

查看 提交 统计 提问

状态: Accepted

源代码

```
n=int(input())
li=input().split()
l=[]
lang=[len(i) for i in li]
ma=max(lang)
for i in li:
    p=list(i)
    la=len(p)
    while len(p) < ma:
        p=p+p[0:min(ma-len(p),len(p))]
    p=list(map(int,p))
```

基本信息

#: 46600246  
题目: 12559  
提交人: 24n11420  
内存: 3800kB  
时间: 26ms  
语言: Python3  
提交时间: 2024-10-19 18:37:48

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。继续做每日选做,感觉现在题目难度上来了,因为一周有几天课比较满,加上题目难了做得更慢,每日选做进度还没赶上来.现在遇到最大问题就是超时,有时候超时要优化好久,提交好几次,实在不知道哪慢了才会看题解,应该还得一段时间才能赶上每日选做进度.