Assignment #4: T-primes + 贪心
Updated 1814 GMT+8 Sep 30, 2025
2025 fall, Complied by <mark>
同学的姓名、院系</mark>

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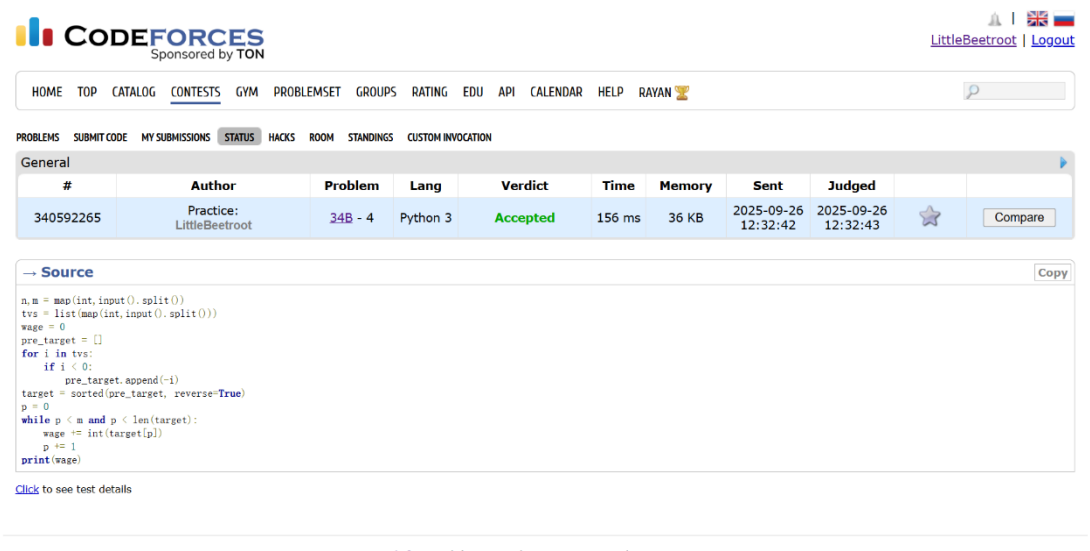
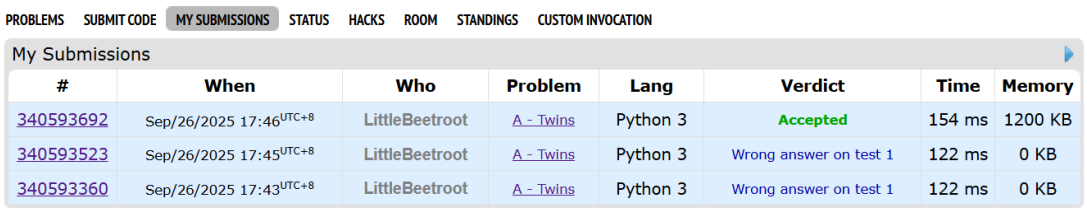
>**说明：**
>老师不好意思，本人的 Typora 已经过期，暂时无法使用，敬请谅解。
>1. **解题与记录：**
>
> 对于每一个题目，请提供其解题思路（可选），并附上使用 Python 或 C++编写的源代码（确保已在
OpenJudge ， Codeforces，LeetCode 等平台上获得 Accepted ”）。请将这些信息连同显示 Accepted”的
截图一起填写到下方的作业模板中。（推荐使用 Typora
https://typoraio.cn 进行编辑，当然你也可以选
择 Word。）无论题目是否已通过，请标明每个题目大致花费的时间。
>
>2. 提交安排：**提交时，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。
>
>4. **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：20 分钟通过

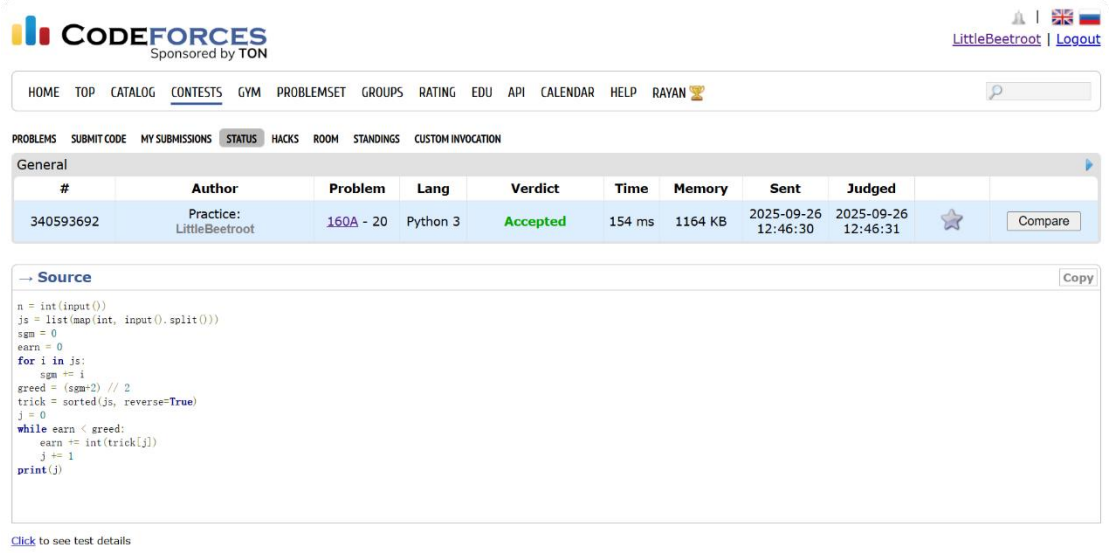
PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

My Submissions

#	When	Who	Problem	Lang	Verdict	Time	Memory
340592265	Sep/26/2025 17:32UTC+8	LittleBeetroot	B - Sale	Python 3	Accepted	156 ms	0 KB
340591918	Sep/26/2025 17:29UTC+8	LittleBeetroot	B - Sale	Python 3	Wrong answer on test 13	122 ms	0 KB
340591724	Sep/26/2025 17:27UTC+8	LittleBeetroot	B - Sale	Python 3	Runtime error on test 1	154 ms	2200 KB
340591582	Sep/26/2025 17:25UTC+8	LittleBeetroot	B - Sale	Python 3	Runtime error on test 1	124 ms	2200 KB

代码
```python

`n,m = map(int,input().split())
tvs = list(map(int,input().split()))
wage = 0
pre_target = []
for i in tvs:
    if i < 0:
        pre_target.append(-i)
target = sorted(pre_target, reverse=True)
p = 0
while p < m and p < len(target):
    wage += int(target[p])
    p += 1
print(wage)
``
代码运行截图 <mark>（至少包含有"Accepted"）</mark>




### 160A. Twins
greedy, sortings, 900,
https://codeforces.com/problemset/problem/160/A
思路：20 分钟通过


```

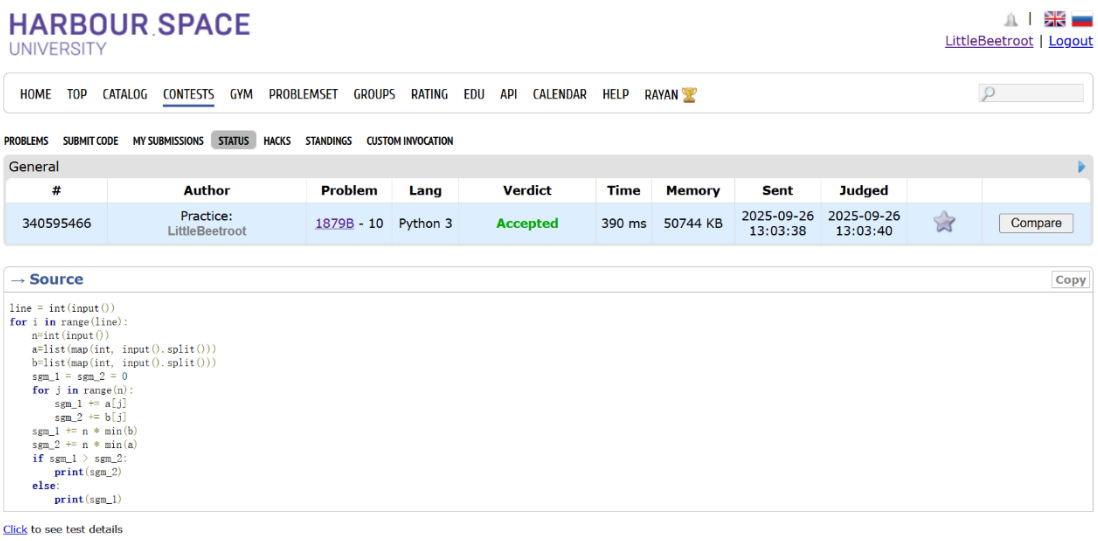
代码
```python

**n = int(input())**
**js = list(map(int, input().split()))**
**sgm = 0**
**earn = 0**
**for i in js:**
**    sgm += i**
**greed = (sgm+2) // 2**
**trick = sorted(js, reverse=True)**
**j = 0**
**while earn < greed:**
**    earn += int(trick[j])**
**    j += 1**
**print(j)**

```
代码运行截图 <mark>（至少包含有"Accepted"）</mark>



1879B. Chips on the Board
constructive algorithms, greedy, 900,
https://codeforces.com/problemset/problem/1879/B
思路：10 分钟速通
代码
```python

line = int(input())
```

```
for i in range(line):
    n=int(input())
    a=list(map(int, input().split()))
    b=list(map(int, input().split()))
    sgm_1 = sgm_2 = 0
    for j in range(n):
        sgm_1 += a[j]
        sgm_2 += b[j]
    sgm_1 += n * min(b)
    sgm_2 += n * min(a)
    if sgm_1 > sgm_2:
        print(sgm_2)
    else:
        print(sgm_1)
```

代码运行截图 <mark>（至少包含有"Accepted"）</mark>



M01017：装箱问题

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

思路：陆续做了三天

代码
```python

```
pkg = 1
u = {0:0,1:5,2:3,3:1}
while pkg > 0:
    a,b,c,d,e,f = list(map(int, input().split()))
    pkg = f + e + d + (c + 3) // 4
    y = 5*d + u[c % 4]
    if b > y:
        pkg += (b - y + 8) // 9
    x = 36 * pkg - 36 * f - 25 * e - 16 * d - 9 * c - 4 * b
    if a > x:
        pkg += (a - x + 35) // 36
    if pkg > 0:
        print(pkg)
```

#
```
代码运行截图 <mark>（至少包含有"Accepted"）</mark>


### M01008: Maya Calendar
implementation, http://cs101.openjudge.cn/practice/01008/
思路：做了一个上午的时间

OpenJudge 题目ID, 标题, 描述 郭旭杰 信箱 账号

CS101 / 题库（包括计概、数算题目）

题目 排名 状态 提问

## 01008:Maya Calendar

查看 提交 统计 提问

总时间限制: 1000ms 内存限制: 65536kB

**描述**

During his last sabbatical, professor M. A. Ya made a surprising discovery about the old Maya calendar. From an old knotted message, professor discovered that the Maya civilization used a 365 day long year, called Haab, which had 19 months. Each of the first 18 months was 20 days long, and the names of the months were pop, no, zip, zotz, tzec, xul, yoxkin, mol, chen, yax, zac, ceh, mac, kankin, muan, pax, koyab, cumhu. Instead of having names, the days of the months were denoted by numbers starting from 0 to 19. The last month of Haab was called uayet and had 5 days denoted by numbers 0, 1, 2, 3, 4. The Maya believed that this month was unlucky, the court of justice was not in session, the trade stopped, people did not even sweep the floor. For religious purposes, the Maya used another calendar in which the year was called Tzolkin (holly year). The year was divided into thirteen periods, each 20 days long. Each day was denoted by a pair consisting of a number and the name of the day. They used 20 names: imix, ik, akbal, kan, chicchan, cimi, manik, lamat, muluk, ok, chuen, eb, ben, ix, mem, cib, caban, eznab, canac, ahau and 13 numbers; both in cycles. Notice that each day has an unambiguous description. For example, at the beginning of the year the days were described as follows: 1 imix, 2 ik, 3 akbal, 4 kan, 5 chicchan, 6 cimi, 7 manik, 8 lamat, 9 muluk, 10 ok, 11 chuen, 12 eb, 13 ben, 1 ix, 2 mem, 3 cib, 4 caban, 5 eznab, 6 canac, 7 ahau, and again in the next period 8 imix, 9 ik, 10 akbal . . . Years (both Haab and Tzolkin) were denoted by numbers 0, 1, . . . , where the number 0 was the beginning of the world. Thus, the first day was: Haab: 0. pop 0 Tzolkin: 1 imix 0 Help professor M. A. Ya and write a program for him to convert the dates from the Haab calendar to the Tzolkin calendar.

**输入**

The date in Haab is given in the following format:
NumberOfTheDay. Month Year

The first line of the input file contains the number of the input dates in the file. The next n lines contain n dates in the Haab calendar format, each in separate line. The year is smaller then 5000.

全局题号 **10**
添加于 **2023-09-18**
提交次数 **1447**
尝试人数 **332**
通过人数 **324**

你的提交记录

| # | 结果 | 时间 |
|---|---|---|
| 17 | Accepted | 2025-10-05 |
| 16 | Accepted | 2025-10-05 |
| 15 | Wrong Answer | 2025-10-05 |
| 14 | Wrong Answer | 2025-10-05 |
| 13 | Wrong Answer | 2025-10-05 |
| 12 | Wrong Answer | 2025-10-05 |
| 11 | Wrong Answer | 2025-10-05 |
| 10 | Wrong Answer | 2025-10-05 |
| 9 | Runtime Error | 2025-10-05 |
| 8 | Runtime Error | 2025-10-05 |
| 7 | Runtime Error | 2025-10-05 |
| 6 | Runtime Error | 2025-10-05 |
| 5 | Runtime Error | 2025-10-05 |
| 4 | Runtime Error | 2025-10-05 |
| 3 | Runtime Error | 2025-10-05 |
| 2 | Runtime Error | 2025-10-05 |
| 1 | Runtime Error | 2025-10-05 |

代码

```python
n = int(input())
print(n)
for i in range(n):
    a,b,c=list(map(str,input().split()))

Haab={"pop":1,"no":2,"zip":3,"zotz":4,"tzec":5,"xul":6,"yoxkin":7
,"mol":8,"chen":9,"yax":10,"zac":11,"ceh":12,"mac":13,"kankin":14
,"muan":15,"pax":16,"koyab":17,"cumhu":18,"uayet":19}

Tzolkin={1:"imix",2:"ik",3:"akbal",4:"kan",5:"chicchan",6:"cimi",
7:"manik",8:"lamat",9:"muluk",10:"ok",11:"chuen",12:"eb",13:"ben"
,14:"ix",15:"mem",16:"cib",17:"caban",18:"eznab",19:"canac",0:"ah
au"}
    _a = int(a.strip("."))
    _c = int(c)
```

```
    sgm = 20*(Haab[b] - 1) +  _a + _c*365
    y = sgm // 260
    m = Tzolkin[(sgm+1) % 20]
    d = sgm % 13 + 1
    print(d,m,y)
```

```

代码运行截图 <mark>（至少包含有"Accepted"）</mark>


### 230B. T-primes（选做）
binary search, implementation, math, number theory, 1300,
http://codeforces.com/problemset/problem/230/B
思路：做了两个星期才通过
简而言之就是找质数的完全平方数。
总是 TLE，后来改进了算法，又用了 PyPy3，还将第 63 次输入的数据单独讨论以节省时间才通过。
```

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

My Submissions

#	When	Who	Problem	Lang	Verdict	Time	Memory
341555915	Oct/03/2025 03:28 UTC+8	LittleBeetroot	B - T-primes	PyPy 3-64	Accepted	1560 ms	15200 KB
341555745	Oct/03/2025 03:26 UTC+8	LittleBeetroot	B - T-primes	PyPy 3-64	Wrong answer on test 17	280 ms	15900 KB
341555307	Oct/03/2025 03:21 UTC+8	LittleBeetroot	B - T-primes	PyPy 3-64	Time limit exceeded on test 63	2000 ms	15400 KB
341554733	Oct/03/2025 03:16 UTC+8	LittleBeetroot	B - T-primes	PyPy 3-64	Time limit exceeded on test 36	2000 ms	14400 KB
341554520	Oct/03/2025 03:14 UTC+8	LittleBeetroot	B - T-primes	PyPy 3-64	Time limit exceeded on test 63	2000 ms	15400 KB
341553163	Oct/03/2025 03:00 UTC+8	LittleBeetroot	B - T-primes	PyPy 3-64	Time limit exceeded on test 63	2000 ms	14900 KB
341475865	Oct/02/2025 16:54 UTC+8	LittleBeetroot	B - T-primes	PyPy 2	Runtime error on test 1	154 ms	0 KB
341475757	Oct/02/2025 16:54 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 36	2000 ms	13800 KB
340689082	Sep/27/2025 12:06 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 36	2000 ms	13800 KB
340689041	Sep/27/2025 12:06 UTC+8	LittleBeetroot	B - T-primes	Python 3	Wrong answer on test 2	92 ms	0 KB
340688958	Sep/27/2025 12:04 UTC+8	LittleBeetroot	B - T-primes	Python 3	Compilation error	0 ms	0 KB
340688745	Sep/27/2025 12:01 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 33	2000 ms	13800 KB
340688602	Sep/27/2025 11:58 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 33	2000 ms	13800 KB
340688418	Sep/27/2025 11:55 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 36	2000 ms	13900 KB
340688220	Sep/27/2025 11:52 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 36	2000 ms	13300 KB
340688071	Sep/27/2025 11:49 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 36	2000 ms	13400 KB
340688027	Sep/27/2025 11:48 UTC+8	LittleBeetroot	B - T-primes	Python 3	Wrong answer on test 1	92 ms	0 KB
340687903	Sep/27/2025 11:46 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 33	2000 ms	13400 KB
340687814	Sep/27/2025 11:44 UTC+8	LittleBeetroot	B - T-primes	Python 3	Wrong answer on test 2	124 ms	100 KB
340687468	Sep/27/2025 11:38 UTC+8	LittleBeetroot	B - T-primes	Python 3	Wrong answer on test 4	92 ms	0 KB
340687398	Sep/27/2025 11:37 UTC+8	LittleBeetroot	B - T-primes	Python 3	Wrong answer on test 4	124 ms	0 KB
340687314	Sep/27/2025 11:35 UTC+8	LittleBeetroot	B - T-primes	Python 3	Wrong answer on test 4	124 ms	0 KB
340619601	Sep/26/2025 21:13 UTC+8	LittleBeetroot	B - T-primes	Python 3	Time limit exceeded on test 1	2000 ms	0 KB

代码

```python

from math import sqrt

def isprime(k):                 #  1 个用法
    if k == 2 or k == 3:
        return True
    elif k == 1 or k == 4:
        return False
    else:
        blacklist_1 = 0
        for i in range(2, int(sqrt(k))+1):
            if k%i == 0:
                blacklist_1 = 1
                break
        if blacklist_1 == 1:
```

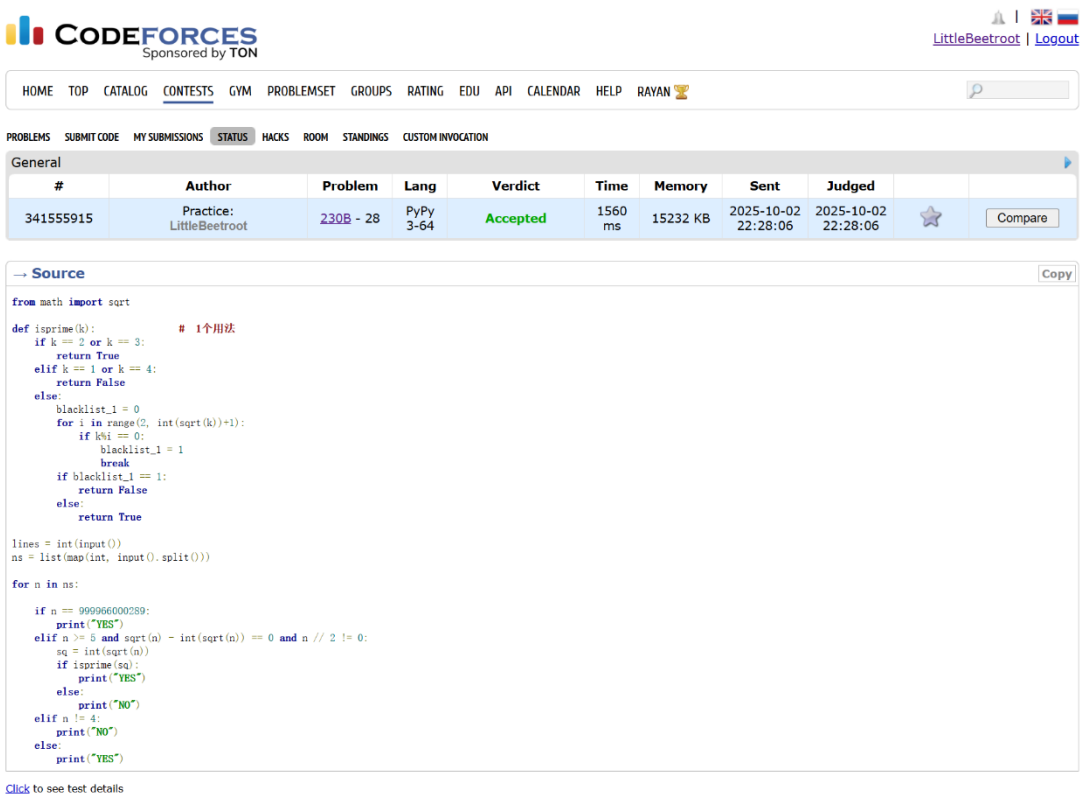
```
            return False
        else:
            return True

lines = int(input())
ns = list(map(int, input().split()))

for n in ns:

    if n == 999966000289:
        print("YES")
    elif n >= 5 and sqrt(n) - int(sqrt(n)) == 0 and n //
2 != 0:
        sq = int(sqrt(n))
        if isprime(sq):
            print("YES")
        else:
            print("NO")
    elif n != 4:
        print("NO")
    else:
        print("YES")
```

代码运行截图 <mark>（至少包含有"Accepted"）</mark>



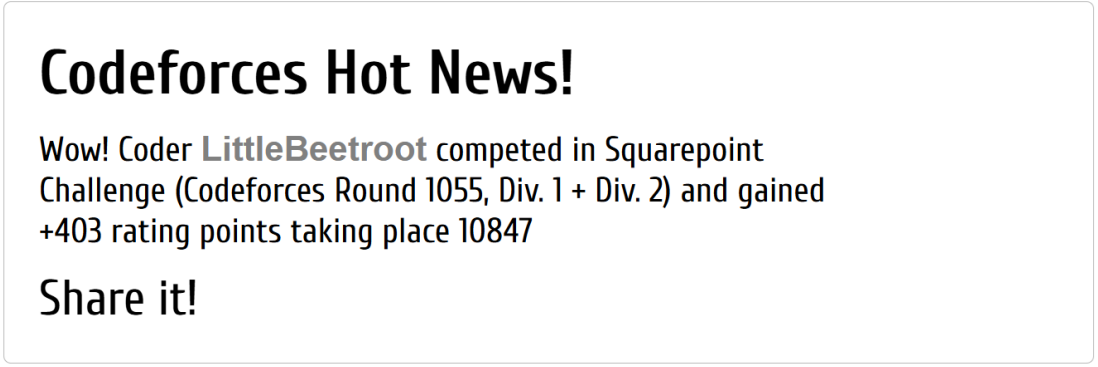
2．学习总结和收获

通过本次学习，我掌握了基础的 greedy 算法，后三题还促使我开始主动尝试优化代码。

我对 Hash Table 有了更深的认识，逐步灵活使用 Hash Table 映射解题。

<mark>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

第一次参加 CodeForces 上的比赛，9 道题就做出来一题，取得+403 分，10847 名的成绩。



11151	cnyz_a	463		463 00:28							
11151	Vasu8725	463		463 00:28	-1						
11151	hemalekharames	463		463 00:28							
11151	LittleBeetroot	463		463 00:28							
11151	ljgs68	463		463 00:28							
11151	rishit.aggarwal	463		463 00:28							
11151	grishma5472	463		463 00:28							

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LittleBeetroot | Logout

HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP RAYAN

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

General

#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
341678358	Contestant: LittleBeetroot	2152A - 32	PyPy 3-64	Accepted	156 ms	3268 KB	2025-10-03 18:03:50	2025-10-03 20:43:41		Compare

→ Source Copy

```
lines = int(input())
for i in range(lines):
    n = int(input())
    js = list(map(int, input().split()))
    jt = []
    for j in js:
        if j not in jt:
            jt.append(j)
    p = len(jt)
    print(2*p-1)
```

Click to see test details

本人练习了 sunnywhy 上的基础题，做出了冒泡排序这个经典问题。

晴问 课程 训练营 算法笔记 题库 题单 比赛 语言入门教程 2026考研算法全程训练营

《2026考研算法：全程训练营（初试 & 机试）》已经上线：https://sunnywhy.com/camp/3415，适合包括『浙大、复旦、上交、华师、中科大计算机&软件』等上机难度院校，也适合『难度友好型』院校。

题目 题解

27. 冒泡排序

通过数 4550 提交数 12652 难度 入门

题目描述

输入n个正整数，使用冒泡排序算法将它们按从小到大的顺序进行排序。

注意：提交的代码字符串中，不能出现 sort，请自己实现自己的排序函数，不要调用语言标准库的排序函数。

输入描述

第一行一个整数n（1≤n≤100），表示需要输入的正整数的个数；

第二行为用空格隔开的n个正整数（每个正整数均不超过100）。

输出描述

输出一行，表示输入的n个正整数。整数间用一个空格隔开，行末不允许有多余的空格。

样例1

输入

```
5
2 8 5 1 3
```

输出

代码书写 Python

```
n=int(input())
js=list(map(int,input().split()))

def up(sest):
    blacklist_1 = 0
    if len(sest) == 1:
        return True
    else:
        for _ in range(0,len(sest)-1):
            if sest[_] > sest[_+1]:
                blacklist_1 +=1
        if blacklist_1 == 0:
            return True
        else:
            return False

while not up(js):
    for i in range(0,n-1):
        if js[i] > js[i+1]:
            stt = js[i]
            js[i] = js[i+1]
            js[i+1] = stt

print(" ".join(str(js[j]) for j in range(n)))
```

测试输入 历史提交

提交时间	结果	时长(ms)	语言	
2025-10-05 15:02:33	完美通过	0	Python	查看
2025-10-05 01:21:47	完美通过	0	Python	查看