

Assignment #5: Greedy穷举Implementation

Updated 1939 GMT+8 Oct 21, 2024

2024 fall, Compiled by 宋宇宸 元培学院

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) 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

04148: 生理周期

brute force, <http://cs101.openjudge.cn/practice/04148>

思路：

代码：

```
i = 0
while 1:
    i += 1
    a, b, c, d = map(int, input().split())
    if a == -1:
        break
    while 1:
        if (a - b) % 28 == 0:
            break
        a += 23
    while 1:
        if (a - c) % 33 == 0:
            break
        a += 23 * 28
    a = (a - d - 1) % 21252 + 1
    print(f"Case {i}: the next triple peak occurs in {a} days.")
```

代码运行截图 (至少包含有"Accepted")



18211: 军备竞赛

greedy, two pointers, <http://cs101.openjudge.cn/practice/18211>

思路 :

代码 :

```

p = int(input())
weapon = list(map(int, input().split()))
weapon.sort()
if p < weapon[0]:
    print(0)
else:
    l = len(weapon)
    s = sum(weapon)
    while p < s:
        l -= 1
        p += weapon[l]
        s -= weapon[l]
    if p - weapon[l] > s:
        print(2 * l - len(weapon) + 1)
    else:
        print(2 * l - len(weapon))

```

代码运行截图 ==（至少包含有"Accepted"）==



21554: 排队做实验

greedy, <http://cs101.openjudge.cn/practice/21554>

思路：

代码：

```

n = int(input())
a = list(map(int, input().split()))
b = []
for i in range(n):
    b.append([a[i], i + 1])
b.sort()
ans = 0
for i in range(n):
    print(b[i][1], end=" ")
    ans += b[i][0] * (n - i - 1)
print()
print(f"{ans / n:.2f}")

```

代码运行截图 (至少包含有"Accepted")



01008: Maya Calendar

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

思路 :

代码 :

```
n = int(input())
h = {"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}
tt = ["imix", "ik", "akbal", "kan", "chicchan", "cimi", "manik", "lamat", "muluk",
      "ok", "chuen", "eb", "ben", "ix", "mem", "cib", "caban", "eznab", "canac", "ahau"]
print(n)
for i in range(n):
    s = input().split()
    a = int(s[0][0:-1])
    b = h[s[1]]
    c = int(s[2])
    t = a + (b - 1) * 20 + c * 365
    c1 = t // 260
    t = t % 260
    b1 = tt[t % 20]
    a1 = t % 13 + 1
    print(a1, b1, c1)
```

代码运行截图 (至少包含有"Accepted")



545C. Woodcutters

dp, greedy, 1500, <https://codeforces.com/problemset/problem/545/C>

思路 :

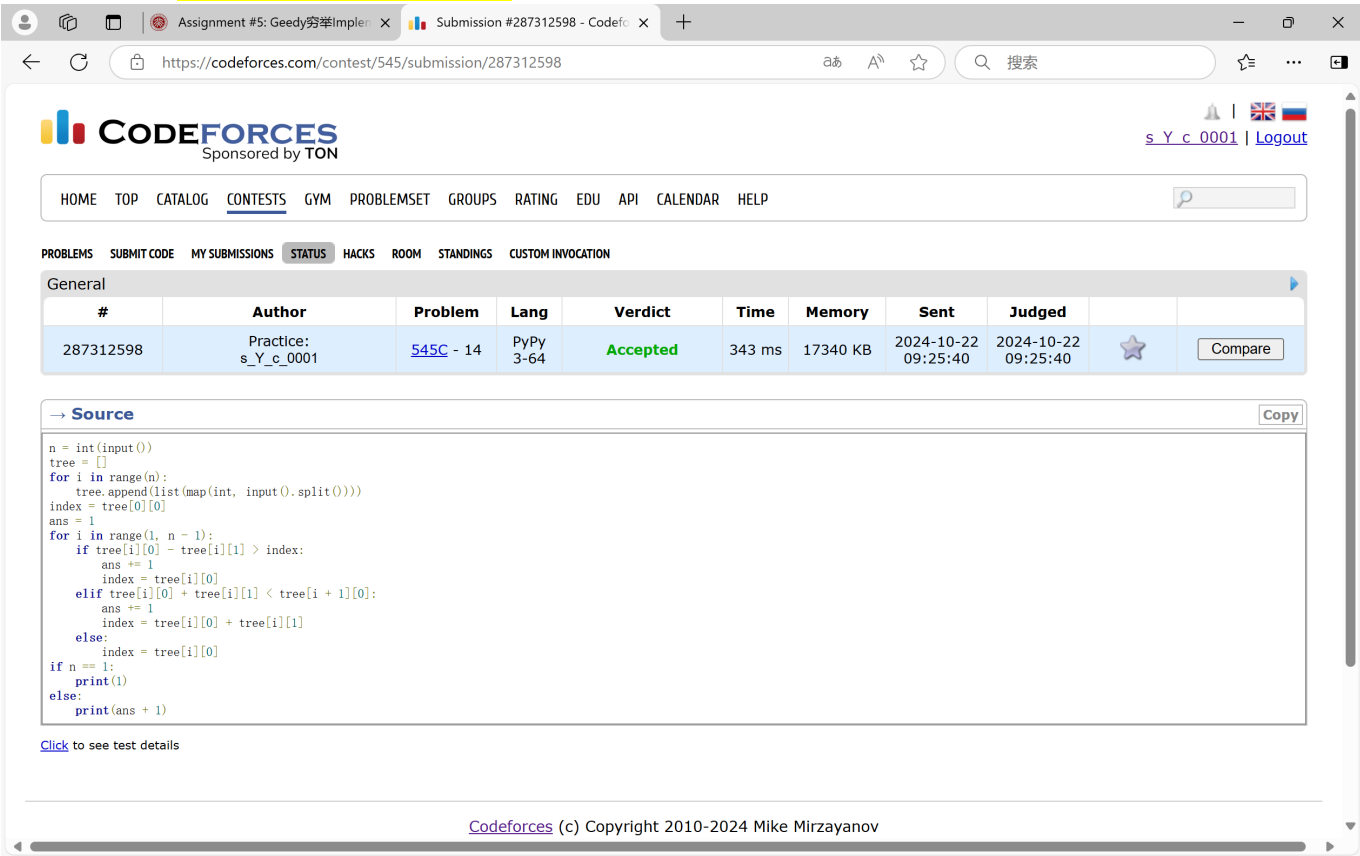
代码 :

```

n = int(input())
tree = []
for i in range(n):
    tree.append(list(map(int, input().split())))
index = tree[0][0]
ans = 1
for i in range(1, n - 1):
    if tree[i][0] - tree[i][1] > index:
        ans += 1
        index = tree[i][0]
    elif tree[i][0] + tree[i][1] < tree[i + 1][0]:
        ans += 1
        index = tree[i][0] + tree[i][1]
    else:
        index = tree[i][0]
if n == 1:
    print(1)
else:
    print(ans + 1)

```

代码运行截图 (至少包含有"Accepted")



01328: Radar Installation

greedy, <http://cs101.openjudge.cn/practice/01328/>

思路 :

代码 :

```
import math
k = 0
while 1:
    flag = 1
    k += 1
    n, d = map(int, input().split())
    if n == d == 0:
        break
    isle = []
    for i in range(n):
        x, y = map(int, input().split())
        if d < y:
            flag = 0
            continue
        l = math.sqrt(d * d - y * y)
        isle.append([x - l, x + l])
    if flag == 0:
        print(f"Case {k}: -1")
        s = input()
        continue
```

```
isle.sort(key = lambda x: x[1])
check = [0] * n
i = 0
ans = 0
while i < n:
    if check[i] == 0:
        ans += 1
        for j in range(i + 1, n):
            if isle[j][0] <= isle[i][1]:
                check[j] = 1
        i += 1
print(f"Case {k}: {ans}")
s = input()
```

代码运行截图 (至少包含有"Accepted")

Assignment #5: Geedy 旁举 Impl...Submission #287312598 - Codef...OpenJudge - 提交状态

cs101.openjudge.cn/practice/solution/46696219/

OpenJudge

题目ID, 标题, 描述24n2400017729 信箱 账号

CS101 / 题库 (包括计概、数算题目)

题目 排名 状态 提问

#46696219提交状态查看 提交 统计 提问

状态: Accepted

源代码

```
import math
k = 0
while 1:
    flag = 1
    k += 1
    n, d = map(int, input().split())
    if n == d == 0:
        break
    isle = []
    for i in range(n):
        x, y = map(int, input().split())
        if d < y:
            flag = 0
            continue
        l = math.sqrt(d * d - y * y)
        isle.append([x - l, x + l])
    if flag == 0:
        print(f"Case {k}: -1")
        s = input()
        continue
    isle.sort(key = lambda x: x[1])
```

基本信息

#: 46696219

题目: 01328

提交人: 宋宇宸(24n2400017729)

内存: 3832kB

时间: 91ms

语言: Python3

提交时间: 2024-10-23 23:17:25

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。

在跟进每日选做，这周明显难了，很多题要好几次才可以ac