Assignment #7: April 月考

Updated 1557 GMT+8 Apr 3, 2024

2024 spring, Complied by ==同学的姓名、院系==

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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。

2）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。

3）如果不能在截止前提交作业，请写明原因。

编程环境

==（请改为同学的操作系统、编程环境等）==

操作系统：win10

Python编程环境：Spyder IDE 5.2.2

C/C++编程环境：

1. 题目

27706: 逐词倒放

http://cs101.openjudge.cn/practice/27706/

思路：就这样

代码

```python
a = reversed(list(input().split()))
print(' '.join(a))
```

代码运行截图 ==（至少包含有"Accepted"）==

27951: 机器翻译

http://cs101.openjudge.cn/practice/27951/

思路：就这样

代码

```python
n,m = map(int,input().split())
a = list(map(int,input().split()))
b = [0] * n
num = 0
while a != []:
    x = a.pop(0)
    if x not in b:
        num += 1
        b.pop(0)
        b.append(x)
print(num)
```

代码运行截图 ==（至少包含有"Accepted"）==

27932: Less or Equal

http://cs101.openjudge.cn/practice/27932/

思路：注意特殊情况

代码

```python
n,k = map(int,input().split())
a = sorted(list(map(int,input().split())))
if k == 0:
    if a[0] == 1:
        print(-1)
    else:
        print(1)
else:
    if n == k:
        print(a[-1])
    else:
        if a[k] == a[k-1]:
            print(-1)
        else:
            print(a[k-1])
```

代码运行截图 ==（AC代码截图，至少包含有"Accepted"）==

状态: Accepted

源代码
```python
n,k = map(int,input().split())
a = sorted(list(map(int,input().split())))
if k == 0:
    if a[0] == 1:
        print(-1)
    else:
        print(1)
else:
    if n == k:
        print(a[-1])
    else:
        if a[k] == a[k-1]:
            print(-1)
        else:
            print(a[k-1])
```

基本信息

#: 44577340
题目: 27932
提交人: 23n2300012140(zyt)
内存: 10416kB
时间: 43ms
语言: Python3
提交时间: 2024-04-08 20:43:44

English 帮助 关于

27948: FBI树

http://cs101.openjudge.cn/practice/27948/

思路：简单建树

代码

```
def tree(a):
    if '0'  in a and '1'  in a:
        treetype = 'F'
    elif '0' in a:
        treetype = 'B'
    else:
        treetype = 'I'
    if len(a) == 1:
        return treetype
    else:
        left = tree(a[:len(a)//2])
        right = tree(a[len(a)//2:])
        return left + right +treetype

n = int(input())
a = list(input())
print(tree(a))
```

代码运行截图 ==（AC代码截图，至少包含有"Accepted"）==

27925: 小组队列

思路：用字典解决。注意散客。

代码

```
from collections import deque
```

```python
t = int(input())
groups = {}
member_to_group = {}

for _ in range(t):
    members = list(map(int, input().split()))
    group_id = members[0]
    groups[group_id] = deque()
    for member in members:
        member_to_group[member] = group_id

queue = deque()

queue_set = set()

while True:
    command = input().split()
    if command[0] == 'STOP':
        break
    elif command[0] == 'ENQUEUE':
        x = int(command[1])
        group = member_to_group.get(x, None)
        if group is None:
            group = x
            groups[group] = deque([x])
            member_to_group[x] = group
        else:
            groups[group].append(x)
        if group not in queue_set:
            queue.append(group)
            queue_set.add(group)
    elif command[0] == 'DEQUEUE':
        if queue:
            group = queue[0]
            x = groups[group].popleft()
            print(x)
            if not groups[group]:
                queue.popleft()
                queue_set.remove(group)
```

代码运行截图 ==（AC代码截图，至少包含有"Accepted"）==

状态: Accepted

源代码

```
from collections import deque
t = int(input())
groups = {}
member_to_group = {}

for _ in range(t):
    members = list(map(int, input().split()))
    group_id = members[0]
    groups[group_id] = deque()
    for member in members:
        member_to_group[member] = group_id

queue = deque()

queue_set = set()

while True:
```

基本信息

#:	44588508
题目:	27925
提交人:	23n2300012140(zyt)
内存:	4972kB
时间:	109ms
语言:	Python3
提交时间:	2024-04-09 22:24:50

27928: 遍历树

http://cs101.openjudge.cn/practice/27928/

思路：事件不太够了，看的题解

代码

```python
class TreeNode:
    def __init__(self, value):
        self.value = value
        self.children = []


def traverse_print(root, nodes):
    if root.children == []:
        print(root.value)
        return
    pac = {root.value: root}
    for child in root.children:
        pac[child] = nodes[child]
    for value in sorted(pac.keys()):
        if value in root.children:
            traverse_print(pac[value], nodes)
        else:
            print(root.value)


n = int(input())
nodes = {}
children_list = []
for i in range(n):
    info = list(map(int, input().split()))
    nodes[info[0]] = TreeNode(info[0])
    for child_value in info[1:]:
```

```
        nodes[info[0]].children.append(child_value)
        children_list.append(child_value)
root = nodes[[value for value in nodes.keys() if value not in children_list][0]]
traverse_print(root, nodes)
```

代码运行截图 ==（AC代码截图，至少包含有"Accepted"）==

#44588542提交状态

查看   提交   统计   提问

状态: Accepted

源代码

```
class TreeNode:
    def __init__(self, value):
        self.value = value
        self.children = []


def traverse_print(root, nodes):
    if root.children == []:
        print(root.value)
        return
    pac = {root.value: root}
    for child in root.children:
        pac[child] = nodes[child]
    for value in sorted(pac.keys()):
        if value in root.children:
            traverse_print(pac[value], nodes)
        else:
            print(root.value)


n = int(input())
nodes = {}
children_list = []
for i in range(n):
    info = list(map(int, input().split()))
```

基本信息

\#:   44588542
题目: 27928
提交人: 23n2300012140(zyt)
内存: 3800kB
时间: 30ms
语言: Python3
提交时间: 2024-04-09 22:28:04

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"2024spring每日选做"、CF、LeetCode、洛谷等网站题目。==

整体还是比较简单的。清明复习了复习这一段的东西，等期中任务结束后对不熟的点再重点学习