

Assignment1

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院系: 心理与认知科学学院

一、 作业题目

1、 27653:Fraction 类(40min)

```
numbers = input().split()
fenmu = int(numbers[1]) * int(numbers[3])
fenzi = int(numbers[0]) * int(numbers[3]) + int(numbers[1]) * int(numbers[2])
import math
def find_gcd(fenzi, fenmu):
    return math.gcd(fenzi, fenmu)
gcd = find_gcd(fenzi, fenmu)
result = ((str(int(fenzi/gcd)) + '/' + str(int(fenmu/gcd))))
print(result)
```

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题目ID, 标题, 描述

22n2000092113 信箱 账号

CS101 / 题库

题目 排名 状态 提问

#44134008提交状态

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状态: Accepted

源代码

```
numbers = input().split()
fenmu = int(numbers[1]) * int(numbers[3])
fenzi = int(numbers[0]) * int(numbers[3]) + int(numbers[1]) * int(numbers[2])
import math
def find_gcd(fenzi, fenmu):
    return math.gcd(fenzi, fenmu)
gcd = find_gcd(fenzi, fenmu)
result = ((str(int(fenzi/gcd)) + '/' + str(int(fenmu/gcd))))
print(result)
```

基本信息

#: 44134008

题目: 27653

提交人: 22n2000092113

内存: 3548kB

时间: 22ms

语言: Python3

提交时间: 2024-03-09 15:42:23

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English 帮助 关于

2、04110:圣诞老人的礼物-Santa Clau's Gifts(1h30min)

```
n,w = list(map(int, (input().split())))
board=[]
price=[]
new = []
for i in range(n):
    board.append(list(map(int, input().split())))
for j in range(n):
    x = board[j][0]/board[j][1]
    price.append(x)
for k in range(n):
    new.append([price[k],board[k][1]])
new.sort(reverse=True)
curP=0
curW = 0
for i in new:
    if w-(curW+i[1]) >= 0:
        curW += i[1]
        curP += i[0]*i[1]
    else:
        curP += i[0]*(w-curW)
        break
print(curP)
```

#44114184提交状态

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状态: **Accepted**

源代码

```
n,w = list(map(int, (input().split())))
board=[]
price=[]
new = []

for i in range(n):
    board.append(list(map(int, input().split())))

for j in range(n):
    x = board[j][0]/board[j][1]
    price.append(x)

for k in range(n):
    new.append([price[k],board[k][1]])

new.sort(reverse=True)

curP=0
curW = 0
for i in new:
    if w-(curW+i[1]) >= 0:
        curW += i[1]
        curP += i[0]*i[1]
    else:
        curP += i[0]*(w-curW)
        break

print(curP)
```

基本信息

#: 44114184
题目: 04110
提交人: 22n2000092113
内存: 3564kB
时间: 23ms
语言: Python3
提交时间: 2024-03-08 11:32:51

3、T-primes (2h30min)

自己原来写的 (time limit exceeded) :

```
num = int(input())
tp = input().split()
import math
def count_factors(n):
    factors_count = 0
    for i in range(1, int(math.sqrt(n)) + 1):
        if n % i == 0:
            factors_count += 1
    return factors_count
def is_square(n):
    root = math.sqrt(n)
    if root == int(root):
        return True
for i in range(num):
    if count_factors(int(tp[i])) == 2 and is_square(int(tp[i])) == True:
        print("YES")
    else:
        print("NO")
```

参考答案的:

```
n = 1000000
a = [1] * n
s = set()
for i in range(2,n):
    if a[i]:
        s.add(i*i)
        for j in range(i*i,n,i):
            a[j] = 0
input()
for x in map(int,input().split()):
    print(["NO","YES"][x in s])
```



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When submitting a solution in C++, please select either C++14 (GCC 6-32) or C++17 (GCC 7-32) as your compiler.

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

General										
#	Author	Problem	Lang	Verdict	Time	Memory	Sent	Judged		
250886919	Practice: 22n2000092113	230B - 28	PyPy 3-64	Accepted	404 ms	29232 KB	2024-03-12 09:14:58	2024-03-12 09:14:58	☆	Compare

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```
n = 1000000
a = [1] * n
s = set()
for i in range(2,n):
    if a[i]:
        s.add(i*i)
        for j in range(i*i,n,i):
            a[j] = 0
input()
for x in map(int,input().split()):
    print(["NO","YES"][x in s])
```

[Click](#) to see test details

4、18176:2050 年成绩计算 (2h)

自己原来写的 (time limit exceeded) :

```
import math
def count_factors(n):
    factors_count = 0
    for i in range(1, int(math.sqrt(n)) + 1):
        if n % i == 0:
            factors_count += 1
    return factors_count
def is_square(n):
    root = math.sqrt(n)
    if root == int(root):
        return True
def tprime(n):
    if count_factors(n) == 2 and is_square(n) == True:
        return True
m,n=map(int,input().split())
for i in range(m):
    a=0
    l0=list(map(int,input().split()))
    for j in range(len(l0)):
        if tprime(l0[j])==True:
            a+=l0[j]/len(l0)
    if int(a)==0:
        print(0)
    else:
        print("%.2f" % a)
```

参考同学的:

```
from math import sqrt
n=10000
ls,x,y=[True]*(n+1),2,int(sqrt(n))+1
while x<y:
    if ls[x]==True:
        for i in range(x*2,n+1,x):
            ls[i]=False
    x+=1
ls=set([i*2 for i in range(2,n+1) if ls[i]==True])

m,n=map(int,input().split())
for _ in range(m):
    scores=list(map(int,input().split()))
    score=0
    for i in scores:
        if i in ls:
            score+=i
    print("%.2f"%(score/len(scores)) if score else 0)
```

5、18182:打怪兽 (2h50min)

```
xbag={}
ncase=int(input())
for i in range(ncase):
    xbag[i]={}
    n,m,b = map(int,input().split())
    xbag[i][0]=(m,b)
    for ii in range(n):
        t,x = map(int,input().split())
        if t not in xbag[i].keys():
            xbag[i][t]=[x]
        else:
            xbag[i][t].append(x)
            xbag[i][t]=sorted(xbag[i][t], reverse=True)
for i in range(ncase):
    sorted_key=sorted(xbag[i].keys())
    m,b=xbag[i][0]
    for k in sorted_key[1:]:
        b-=sum(xbag[i][k][:m])
        if b<=0:
            print(k)
            break
    if b>0:
        print("alive")
```



CS101 / 题库

题目 排名 状态 提问

#44185659提交状态

查看 提交 统计 提问

状态: Accepted

源代码

```
xbag={}
ncase=int(input())
for i in range(ncase):
    xbag[i]={}
    n,m,b = map(int,input().split())
    xbag[i][0]=(m,b)
    for ii in range(n):
        t,x = map(int,input().split())
        if t not in xbag[i].keys():
            xbag[i][t]=[x]
        else:
            xbag[i][t].append(x)
            xbag[i][t]=sorted(xbag[i][t], reverse=True)
for i in range(ncase):
    sorted_key=sorted(xbag[i].keys())
    m,b=xbag[i][0]
    for k in sorted_key[1:]:
        b-=sum(xbag[i][k][:m])
        if b<=0:
            print(k)
            break
    if b>0:
        print("alive")
```

基本信息

#: 44185659
题目: 18182
提交人: 22n2000092113
内存: 6128kB
时间: 80ms
语言: Python3
提交时间: 2024-03-12 17:53:22

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English 帮助 关于

学习感受与心得:

这一次的作业比上一次耗时要长, 而且发现程序能跑出来也不行, 还会超时 (心累...), 想要 ac 还是得改进自己的方法, 看了参考答案之后确实有一种豁然开朗的感觉。感觉有时候能 ac 了还是需要看看参考答案优化一下自己的思路。