**Работа победителя муниципального этапа ВсОШ 2023 – 2024 уч.год**

**по информатике - 10 класс**

**Задача 1. Матрешки**

n = int(input())

a = []

**for** i **in** range(n):

n1 = int(input())

a.append(n1)

a.sort()

cnt = 1

vn = a[0]

**for** i **in** range(1, n):

**if** a[i] - vn >= 2:

cnt += 1

vn = a[i]

print(cnt)

**Задача 2. Проектная деятельность**

n = int(input())

a = []

a1 = []

**for** i **in** range(n):

b = list(map(int, input().split()))

a.append(b)

**for** elem **in** a:

a1.append(elem)

a.sort(key=**lambda** x: x[1])

cnt = 0

p = []

**for** i **in** range(n):

**if** cnt >= a[i][0] **and** cnt <= a[i][1]:

cnt += 1

p.append(a1.index(a[i]) + 1)

**if** cnt != n:

cnt = 0

a.sort(key=**lambda** x: x[0])

p = []

**for** i **in** range(n):

**if** cnt >= a[i][0] **and** cnt <= a[i][1]:

cnt += 1

p.append(a1.index(a[i]) + 1)

**if** cnt != n:

print(0)

**else**:

print(\*p)

**Задача 3. Набираем бонусы**

n, k = map(int, input().split())

a = []

**for** i **in** range(k):

a1 = list(map(int, input().split()))

a.append(a1)

a.sort(key=**lambda** x: x[1])

flag = True

**for** i **in** range(2, n+1):

**for** el **in** a:

**if** el[1] == i:

**break**

**if** el == a[-1] **and** el[1] != i:

flag = False

**if** flag:

print('SUPER')

**else**:

print('UNREAL')

**Задача 4. Простой архиватор**

n, k = map(int, input().split())

s = []

a = []

**for** i **in** range(n):

a1 = input()

b1 = input()

c = [a1, b1]

a.append(c)

a.sort(key=**lambda** x: len(x[0]) - len(x[1]), reverse=True)

**for** i **in** range(k):

s1 = input()

s.append(s1)

**for** i **in** range(k):

**for** j **in** range(n):

**if** len(a[j][0]) > len(a[j][1]):

s[i] = s[i].replace(a[j][0], a[j][1])

**for** s1 **in** s:

print(s1)

**Задача 5. Моя территория**

n = int(input())

r = int(input())

a = []

p = 2 \* 3.1415 \* r

**for** i **in** range(n):

x, y = map(float, input().split())

xy = [x, y]

a.append(xy)

**for** i **in** range(n):

k1 = a[i][0] - a[i-1][0]

k2 = a[i][1] - a[i-1][1]

**if** k1 < 0: k1 = -k1

**if** k2 < 0: k2 = -k2

h = (k1 \*\* 2 + k2 \*\* 2) \*\* 0.5

p += h

p = round(p, 2)

print(p)

**Задача 6. Где виза?**

**def** **sumch**(n):

n1 = n

cnt = 0

**while** n1 > 0:

cnt += n1 % 10

n1 //= 10

**return** cnt

alf = input()

k = int(input())

s = ''

**for** i **in** range(k):

k1 = int(input())

**while** k1 >= 10:

k1 = sumch(k1)

s += alf[k1]

print(s)

**Задача 7. Решишь мою задачку?**

a, b, c, d = map(int, input().split())

**while** a == c **and** b > d **or** a > c **and** b == d **or** a > c **and** b > d:

**if** a >= b:

a, b = a - b, b

**else**:

a, b = a, b - a

**if** a == c **and** b == d: print("YES")

**else**: print("NO")

**Задача 8. Найду!**

#include <iostream>

**using** **namespace** **std**;

**int** **iwf**(**int** sh, **int** v, **int** napr) {

**if** (napr == 0 && sh == 1) **return** 0;

**if** (napr == 1 && v == 1) **return** 0;

**if** (napr == 1) **return** iwf(sh, v-1, 0) + 1;

**else** **return** iwf(sh-1, v, 1) + 1;

}

**int** **main**()

{

**int** n, m;

**cin** >> n >> m;

**if** (m == 1) **cout** << 0;

**else** **cout** << iwf(m, n, 1);

**return** 0;

}