

Российская Федерация
Муниципальное бюджетное
образовательное учреждение
«Средняя школа города Багратионовска»
238420 Калининградская область
г. Багратионовск, ул. Пограничная 68

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Школьный этап
Всероссийской олимпиады
школьников по
информатике и ИКТ

Калесников Дмитрий Дмитриевич
11, А"

МБОУ «Средняя школа города Багратионовска»
Демидова Екатерина Васильевна

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python 3.7

N7

```
def getPrimeNumbersListByEratosthene(limit):  
    primeNumbers = list(range(2, limit + 1))  
    for number in primeNumbers:  
        if number != 0:  
            for candidate in range(2 * number, limit + 1, number):  
                primeNumbers[candidate - 2] = 0  
    return primeNumbers
```

```
def main():  
    fileLines = list()  
    limit = 12  
    primeNumbers = [2, 3, 5, 7, 11]  
    buffer = 0  
    maxSequence = buffer  
    inp = open('input.txt', 'r')  
    for line in inp:  
        fileLines.append(line)  
    inp.close()  
    N = int(fileLines[0])  
    numbers = fileLines[1].split(' ')  
    for number in numbers:
```

```
        if (int(number) > limit):  
            intNumber = int(number)  
            primeNumbers = getPrimeNumbersListByEratosthene(limit)  
            if (intNumber in primeNumbers):  
                buffer += 1  
            else:  
                if (buffer > maxSequence):  
                    maxSequence = buffer  
                buffer = 0  
        if (buffer > maxSequence):  
            maxSequence = buffer  
    outp = open('output.txt', 'w')  
    outp.write(str(maxSequence))  
    outp.close()
```

main()

10

N2

```

from collections import Counter
with open('input.txt') as fin, open('output.txt', 'w') as fout:
    for seq in fin:
        entr = Counter(seq)
        if sum(cnt % 2 for cnt in entr.values()) <= len(seq) % 2:
            odd = next((k for k, v in entr.items() if v % 2), '')
            pat = ''.join(k * (entr[k] // 2) for k in sorted(entr.keys()))
            res = 'qa {} \n'.format(pat + odd + pat[::-1])
        else:
            res = 'Korn \n'
        fout.write(res)

```

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N3

```

inp = open('input.txt', 'r')
a = inp.readlines()[1]
inp.close()
outp = open('output.txt', 'w')
outp.write(str(bin(int(a, base=16))[2:], count('0')))
outp.close()

```

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N4

```

def formatDic(dic):
    pairsList = list()
    for key, value in dic.items():
        if (dic.get(key) != 0):
            pairsList.append((value, key))
    return pairsList

dic = ['a': 0, 'b': 0, 'c': 0, ..., 'z': 0]
inp = open('input.txt', 'r')

```

10

```
registerNewWord = True
for char in inp.read():
    if ((char.lower() in dic.keys())):
        if (registerNewWord):
            dic[char.lower()] += 1
            registerNewWord = False
        else:
            registerNewWord = True
inp.close()
pairsList = sorted(formatDic(dic), key = lambda x: (int=(-x[0]),
                                                    x[1]))

outp = open('output.txt', 'w')
for pair in pairsList:
    outp.write(str(pair[0]) + ' ' + str(pair[1]) + '\n')
outp.close.
```

Cyner!