REPORT

所属：工学部　通信
学籍番号：08D18151
氏名：山下慎太郎

- 課題 11-7

  <考え方>

  読み込んだテキストの単語（空白で区切られたものを単語と呼ぶ）ごとに、
  english_word.txt に存在するかを調べる。

  存在したら count を 1 繰り上げる。

  記号の消去に関して、記号が出てきたらすべて 0 に変換してから、後で 0 をすべて消去
  する方法をとった。

  <結果>

  入力 txt：

      aaron

      aaron

      abated

      abbots

      abatement

      abated

      abatement

      abatement

      abatement

      asdfasdf

  最後の単語だけ english_wordlist に存在しない

  出力は 0.9 となっていたので正しいと考えられる

  <ソースコード>

```
def chk_ratio(chk_txt, wordlist):
    chk_txt = chk_txt.translate(table)
    chk_txt = chk_txt.split('0')
    count = 0

    for i in range(len(chk_txt)):
        for l in range(len(wordlist)):
            if chk_txt[i] == wordlist[l]:
                count += 1

    return count/len(chk_txt)
```

● 課題 11-8

<考え方>

すべての a,b の組み合わせで検証し、11-7 で作成した関数で求まる割合が大きい組み合わせを選択する。

解読には 11-6 で作成した解読関数を使用する。

<結果>

結果の一部分を添付する。

（すべて添付すると量が多くなるため）

11-7 で作成した関数より求まった割合は：0.935~

カギは：a=71,b=56

解読した文章も意味が通じていると考えられるので、正しいと考えられる。

```
"And have you never known the pleasure and triumph of a lucky guess?--
I pity you.--I thought you cleverer--for, depend upon it a lucky
guess is never merely luck.  There is always some talent in it.
And as to my poor word `success,' which you quarrel with, I do not
know that I am so entirely without any claim to it.  You have drawn
two pretty pictures; but I think there may be a third--a something
between the do-nothing and the do-all. If I had not promoted Mr. Weston's
visits here, and given many little encouragements, and smoothed
many little matters, it might not have come to any thing after all.
I think you must know Hartfield enough to comprehend that."

"A straightforward, open-hearted man like Weston, and a rational,
unaffected woman like Miss Taylor, may be safely left to manage their
own concerns.  You are more likely to have done harm to yourself,
than good to them, by interference."

"Emma never thinks of herself, if she can do good to others,"
rejoined Mr. Woodhouse, understanding but in part.  "But, my dear,
pray do not make any more matches; they are silly things, and break up
one's family circle grievously."

"Only one more, papa; only for Mr. Elton.  Poor Mr. Elton! You
like Mr. Elton, papa,--I must look about for a wife for him.
There is nobody in Highbury who deserves him--and he has been
here a whole year, and has fitted up his house so comfortably,
that it would be a shame to have him single any longer--and I thought
when he was joining their hands to-day, he looked so very much as if
he would like to have the same kind office done for him! I think
very well of Mr. Elton, and this is the only way I have of doing
him a service."

"Mr. Elton is a very pretty young man, to be sure, and a very
good young man, and I have a great regard for him.  But if you
want to shew him any attention, my dear, ask him to come
and dine with us some day.  That will be a much better thing.
I dare say Mr. Knightley will be so kind as to meet him."

"With a great deal of pleasure, sir, at any time," said Mr. Knightley,
laughing, "and I agree with you entirely, that it will be a much
better thing.  Invite him to dinner, Emma, and help him to the best
of the fish and the chicken, but leave him to chuse his own wife.
Depend upon it, a man of six or seven-and-twenty can take care
of himself."

ratio :  0.9351874244256349 a :  71 b :  56
PS C:\Users\shintaro\Google ドライブ\8>
```

<ソースコード>

```python
for a in range(2, N):
```

```python
if gcd(a, N) == 1:
    for b in range(1, N):
        store_txt = decode(chk_txt, a, b)
        store_rate = chk_ratio(store_txt, wordlist)

        if store_rate > rate:
            rate = store_rate
            text = store_txt
            max_a = a
        store_b = b
```

<参考>
工学部　通信　山月達太君の一部分を参考にさせていただきました。
（decode 関数の部分）