Lab1-1 Report:

At first, I use character counting. I count the unique character in each language and output the highest score. But there are problem: some language has some overlapping unique character so I can not use this method.

On the second approach I combine the first method and counting the most 3 common word in each language. Score are the sum of method 1 and the number of most 3 common word.

Conclusion: By combining 2 method I significantly increase the prediction guarantee to predict the correct language.

Lab1-2 Report:

I was suspicious that one word can not be a sentence. But some word can be at the beginning and at the end so it is posible that the model to generate a word "dear" as one sentence. Same as trigram.

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Bigram:
dear
all the fact you was a degree of her face and he were such a more people could now only
i am before-hand with a little scheming longer no that there six weeks in critical an enquiry or parade in
he had been able to see that is not know what marianne turned round again yet
i distress of an eminent person whom she was his way

Trigram:
never always
i could but it was too much expected by marianne 's looks that he was so dull so wretchedly dull
'lord know
elton saw
chapter amazing
```

Lab1-3 Report:

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PS E:\School\csc-486-NLP\Lab1> python3 .\Lab1-3.py
E:\School\csc-486-NLP\Lab1\Lab1-3.py:19: SyntaxWarning: invalid escape sequence
  """ token_pattern = r'\d+:\d+|[A-Za-z]+(?:\'[A-Za-z]+)?|\d+(?:\.\d+)?|[^\s]'
[nltk_data] Downloading package gutenberg to
[nltk_data]     C:\Users\sieud\AppData\Roaming\nltk_data...
[nltk_data]   Package gutenberg is already up-to-date!

14:10 So his father went down unto the woman: and Samson made there a
feast; for so used the young men to do.

As the word went out of king's mouth, they covered Haman's
face.
Thus far is the judgment of Moab.
9:11 Therefore the LORD shall set up the adversaries of Rezin against
him, and join his enemies together; 9:12 The Syrians before, and the
Philistines behind; and they shall devour Israel with open mouth.
2:17 And the shepherds came and drove them away: but Moses stood up
and helped them, and watered their flock.

1:10 The adversary hath spread out his hand upon all her pleasant
things: for she hath seen that the heathen entered into her sanctuary,
whom thou didst command that they should not enter into thy
congregation.
5:15 And the princes of Issachar were with Deborah; even Issachar, and
also Barak: he was sent on foot into the valley.
16:22 And the multitude rose up together against them: and the
magistrates rent off their clothes, and commanded to beat them.
for I have prepared the house, and room for the
camels.
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Lab1-4 Answer:

      Since increasing the n-gram proportionally increases the accuracy but at each n-gram increase, there is an exponentially increase in the space complexity. And therefore make the generator much longer to complete on each word generated which also increase time complexity.