**Note: Already Completed 1 OW Credit Earlier, Coming Back for 2nd. The 5 Additional Problems Are Bolded.**

Final 2 OW – Additions are Bolded:

Chapter 2 Questions 25, 26

Chapter 3: Questions 40, 41

Chapter 4: Question 32, **29, 30, 35**

**Chapter 5: Question 34, 35**

**Chapter 2 Question 25:**

Output for ‘the’: ['English-Latin1', 'Paez-Latin1', 'Yao-Latin1']

**Chapter 2 Question 26:**

4.543820763194153

**Chapter 3 Question 40:**

Rural: 68.56959241016006

Science: 68.81457713399661

**Chapter 3 Question 41:**

words = ['attribution', 'confabulation', 'elocution', 'sequoia', 'tenacious', 'unidirectional']  
vsequences = set([''.join([char for char in word if char in 'aeiou']) for word in words]) # Actual # Nested List Comprehension  
sorted(vsequences)

**Chapter 4 Question 32: (Score : Sentence)**

274 : ['``', 'So', 'that', 'the', 'man', 'should', 'not', 'have', 'thoughts', 'of', 'grandeur', ',', 'and', 'become', 'lifted', 'up', ',', 'as', 'if', 'he', 'had', 'no', 'lord', ',', 'because', 'of', 'the', 'dominion', 'that', 'had', 'been', 'given', 'to', 'him', ',', 'and', 'the', 'freedom', ',', 'fall', 'into', 'sin', 'against', 'God', 'his', 'Creator', ',', 'overstepping', 'his', 'bounds', ',', 'and', 'take', 'up', 'an', 'attitude', 'of', 'self-conceited', 'arrogance', 'towards', 'God', ',', 'a', 'law', 'was', 'given', 'him', 'by', 'God', ',', 'that', 'he', 'might', 'know', 'that', 'he', 'had', 'for', 'lord', 'the', 'lord', 'of', 'all', '.']

[…]: Too long

964 : ['Presumably', ',', 'if', 'the', 'reverse', 'is', 'the', 'case', 'and', 'the', 'good', 'effect', 'is', 'more', 'certain', 'than', 'the', 'evil', 'result', 'that', 'may', 'be', 'forthcoming', ',', 'not', 'only', 'must', 'the', 'good', 'and', 'the', 'evil', 'be', 'prudentially', 'weighed', 'and', 'found', 'proportionate', ',', 'but', 'also', 'calculation', 'of', 'the', 'probabilities', 'and', 'of', 'the', 'degree', 'of', 'certainty', 'or', 'uncertainty', 'in', 'the', 'good', 'or', 'evil', 'effect', 'must', 'be', 'taken', 'into', 'account', '.']

1258 : ['We', 'should', 'recall', 'the', 'number', 'of', 'movements', 'for', 'the', 'service', 'of', 'mankind', 'which', 'arose', 'from', 'the', 'kindred', 'Evangelicalism', 'of', 'the', 'British', 'Isles', 'and', 'the', 'Pietism', 'of', 'the', 'Continent', 'of', 'Europe', '--', 'among', 'them', 'prison', 'reform', ',', 'anti-slavery', 'measures', ',', 'legislation', 'for', 'the', 'alleviation', 'of', 'conditions', 'of', 'labour', ',', 'the', 'Inner', 'Mission', ',', 'and', 'the', 'Red', 'Cross', '.']

**NEW PROBLEMS**

*Chapter 4 Question 29****:*** Write a recursive function that pretty prints a trie in alphabetically sorted order

Example:

chair: 'flesh'

---t: 'cat'

--ic: 'stylish'

---en: 'dog'

trie = nltk.defaultdict(dict)

insert(trie, 'chat', 'cat')

insert(trie, 'chien', 'dog')

insert(trie, 'chair', 'flesh')

insert(trie, 'chic', 'stylish')

trie['c']['h']['a']['t']['value']

def alphabetize\_trie(trie, line=''):

if 'value' in trie:

print(line + ':\'' + trie['value'] + '\**'**')

return

for index, key in enumerate(sorted(trie.keys())):

if (index == 0):

alphabetize\_trie(trie[key], line + key)

else:

alphabetize\_trie(trie[key], ('-' \* len(line)) + key)

alphabetize\_tree(trie)

**Results Mimic Example**

chair: 'flesh'

---t: 'cat'

--ic: 'stylish'

---en: 'dog'

***Chapter 4: Question 30***

"""This story happened a long time ago in a galaxy far, far away. It is already over. Nothing can be done to change it.  
It is a story of love and loss, brotherhood and betrayal, courage and sacrifice and the death of dreams. It is a story of the blurred line between our best and our worst. It is the story of the end of an age.  
A strange thing about stories -- Though this all happened so long ago and so far away that words cannot describe the time or the distance, it is also happening right now. Right here.  
It is happening as you read these words. This is how twenty-five millennia come to a close. Corruption and treachery have crushed a thousand years of peace. This is not just the end of a republic; night is falling on civilization itself.  
This is the twilight of the Jedi. The end starts now.

^Text

Text

Description automatically generated

^Justified Output

***Chapter 4 Question 35:***

Text

Description automatically generated

***Chapter 5 Question 34:***

0 0

1 47328

2 7186

3 1146

4 265

5 87

6 27

7 12

8 1

9 1

10 2

[('The', 'AT'), ('Fulton', 'NP-TL'), ('County', 'NN-TL'), ('Grand', 'JJ-TL'), ('Jury', 'NN-TL'), ('said', 'VBD'), ('Friday', 'NR'), ('an', 'AT'), ('investigation', 'NN'), ('of', 'IN'), ("Atlanta's", 'NP$'), ('recent', 'JJ'), ('primary', 'NN'), ('election', 'NN'), ('produced', 'VBD'), ('``', '``'), ('no', 'AT'), ('evidence', 'NN'), ("''", "''"), ('that', 'CS'), ('any', 'DTI'), ('irregularities', 'NNS'), ('took', 'VBD'), ('place', 'NN'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('Regarding', 'IN'), ("Atlanta's", 'NP$'), ('new', 'JJ'), ('multi-million-dollar', 'JJ'), ('airport', 'NN'), (',', ','), ('the', 'AT'), ('jury', 'NN'), ('recommended', 'VBD'), ('``', '``'), ('that', 'CS'), ('when', 'WRB'), ('the', 'AT'), ('new', 'JJ'), ('management', 'NN'), ('takes', 'VBZ'), ('charge', 'NN'), ('Jan.', 'NP'), ('1', 'CD'), ('the', 'AT'), ('airport', 'NN'), ('be', 'BE'), ('operated', 'VBN'), ('in', 'IN'), ('a', 'AT'), ('manner', 'NN'), ('that', 'WPS'), ('will', 'MD'), ('eliminate', 'VB'), ('political', 'JJ'), ('influences', 'NNS'), ("''", "''"), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('``', '``'), ('Actually', 'RB'), (',', ','), ('the', 'AT'), ('abuse', 'NN'), ('of', 'IN'), ('the', 'AT'), ('process', 'NN'), ('may', 'MD'), ('have', 'HV'), ('constituted', 'VBN'), ('a', 'AT'), ('contempt', 'NN'), ('of', 'IN'), ('the', 'AT'), ('Criminal', 'JJ-TL'), ('court', 'NN-TL'), ('of', 'IN-TL'), ('Cook', 'NP'), ('county', 'NN'), (',', ','), ('altho', 'CS'), ('vindication', 'NN'), ('of', 'IN'), ('the', 'AT'), ('authority', 'NN'), ('of', 'IN'), ('that', 'DT'), ('court', 'NN'), ('is', 'BEZ'), ('not', '\*'), ('the', 'AT'), ('function', 'NN'), ('of', 'IN'), ('this', 'DT'), ('court', 'NN'), ("''", "''"), (',', ','), ('said', 'VBD'), ('Karns', 'NP'), (',', ','), ('who', 'WPS'), ('is', 'BEZ'), ('a', 'AT'), ('City', 'NN-TL'), ('judge', 'NN'), ('in', 'IN'), ('East', 'JJ-TL'), ('St.', 'NP-TL'), ('Louis', 'NP-TL'), ('sitting', 'VBG'), ('in', 'IN'), ('Cook', 'NP-TL'), ('County', 'NN-TL'), ('court', 'NN-TL'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('While', 'CS'), ('the', 'AT'), ('city', 'NN'), ('council', 'NN'), ('suggested', 'VBD'), ('that', 'CS'), ('the', 'AT'), ('Legislative', 'JJ-TL'), ('Council', 'NN-TL'), ('might', 'MD'), ('perform', 'VB'), ('the', 'AT'), ('review', 'NN'), (',', ','), ('Mr.', 'NP'), ('Notte', 'NP'), ('said', 'VBD'), ('that', 'QL'), ('instead', 'RB'), ('he', 'PPS'), ('will', 'MD'), ('take', 'VB'), ('up', 'RP'), ('the', 'AT'), ('matter', 'NN'), ('with', 'IN'), ('Atty.', 'NN-TL'), ('Gen.', 'JJ-TL'), ('J.', 'NP'), ('Joseph', 'NP'), ('Nugent', 'NP'), ('to', 'TO'), ('get', 'VB'), ('``', '``'), ('the', 'AT'), ('benefit', 'NN'), ('of', 'IN'), ('his', 'PP$'), ('views', 'VBZ'), ("''", "''"), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('He', 'PPS'), ('was', 'BEDZ'), ('able', 'JJ'), ('to', 'TO'), ('smell', 'VB'), ('a', 'AT'), ('bargain', 'NN'), ('--', '--'), ('and', 'CC'), ('a', 'AT'), ('masterpiece', 'NN'), ('--', '--'), ('a', 'AT'), ('continent', 'NN'), ('away', 'RB'), (',', ','), ('and', 'CC'), ('the', 'AT'), ('Museum', 'NN-TL'), ('of', 'IN-TL'), ('Modern', 'JJ-TL'), ("Art's", 'NN$-TL'), ('Alfred', 'NP'), ('Barr', 'NP'), ('said', 'VBD'), ('of', 'IN'), ('him', 'PPO'), (':', ':'), ('``', '``'), ('I', 'PPSS'), ('have', 'HV'), ('never', 'RB'), ('mentioned', 'VBN'), ('a', 'AT'), ('new', 'JJ'), ('artist', 'NN'), ('that', 'WPO'), ('Thompson', 'NP'), ("didn't", 'DOD\*'), ('know', 'VB'), ('about', 'IN'), ("''", "''"), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('According', 'IN'), ('to', 'IN'), ('the', 'AT'), ('official', 'JJ'), ('interpretation', 'NN'), ('of', 'IN'), ('the', 'AT'), ('Charter', 'NN-TL'), (',', ','), ('a', 'AT'), ('member', 'NN'), ('cannot', 'MD\*'), ('be', 'BE'), ('penalized', 'VBN'), ('by', 'IN'), ('not', '\*'), ('having', 'HVG'), ('the', 'AT'), ('right', 'NN'), ('to', 'TO'), ('vote', 'VB'), ('in', 'IN'), ('the', 'AT'), ('General', 'JJ-TL'), ('Assembly', 'NN-TL'), ('for', 'IN'), ('nonpayment', 'NN'), ('of', 'IN'), ('financial', 'JJ'), ('obligations', 'NNS'), ('to', 'IN'), ('the', 'AT'), ('``', '``'), ('special', 'JJ'), ("''", "''"), ('United', 'VBN-TL'), ("Nations'", 'NNS$-TL'), ('budgets', 'NNS'), (',', ','), ('and', 'CC'), ('of', 'IN'), ('course', 'NN'), ('cannot', 'MD\*'), ('be', 'BE'), ('expelled', 'VBN'), ('from', 'IN'), ('the', 'AT'), ('Organization', 'NN-TL'), ('(', '('), ('which', 'WDT'), ('you', 'PPSS'), ('suggested', 'VBD'), ('in', 'IN'), ('your', 'PP$'), ('editorial', 'NN'), (')', ')'), (',', ','), ('due', 'RB'), ('to', 'IN-HL'), ('the', 'AT-HL'), ('fact', 'NN-HL'), ('that', 'CS-HL'), ('there', 'EX'), ('is', 'BEZ'), ('no', 'AT'), ('provision', 'NN'), ('in', 'IN'), ('the', 'AT'), ('Charter', 'NN-TL'), ('for', 'IN'), ('expulsion', 'NN'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('He', 'PPS'), ('has', 'HVZ'), ('his', 'PP$'), ('own', 'JJ'), ('system', 'NN'), ('of', 'IN'), ('shorthand', 'NN'), (',', ','), ('devised', 'VBN'), ('by', 'IN'), ('abbreviations', 'NNS'), (':', ':'), ('``', '``'), ('humility', 'NN'), ("''", "''"), ('will', 'MD'), ('be', 'BE'), ('``', '``'), ('humly', 'NN-NC'), ("''", "''"), (',', ','), ('``', '``'), ('with', 'IN-NC'), ("''", "''"), ('will', 'MD'), ('be', 'BE'), ('``', '``'), ('w', 'NN'), ("''", "''"), (',', ','), ('and', 'CC'), ('``', '``'), ('that', 'DT-NC'), ("''", "''"), ('will', 'MD'), ('be', 'BE'), ('``', '``'), ('tt', 'NN'), ("''", "''"), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('Thus', 'NIL'), (',', ','), ('as', 'NIL'), ('a', 'NIL'), ('development', 'NIL'), ('program', 'NIL'), ('is', 'NIL'), ('being', 'NIL'), ('launched', 'NIL'), (',', ','), ('commitments', 'NIL'), ('and', 'NIL'), ('obligations', 'NIL'), ('must', 'NIL'), ('be', 'NIL'), ('entered', 'NIL'), ('into', 'NIL'), ('in', 'NIL'), ('a', 'NIL'), ('given', 'NIL'), ('year', 'NIL'), ('which', 'NIL'), ('may', 'NIL'), ('exceed', 'NIL'), ('by', 'NIL'), ('twofold', 'NIL'), ('or', 'NIL'), ('threefold', 'NIL'), ('the', 'NIL'), ('expenditures', 'NIL'), ('to', 'NIL'), ('be', 'NIL'), ('made', 'NIL'), ('in', 'NIL'), ('that', 'NIL'), ('year', 'NIL'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('In', 'IN'), ('of', 'IN-NC'), ('all', 'ABN-NC'), ('the', 'AT-NC'), ('suggestions', 'NNS-NC'), ('that', 'WPS-NC'), ('were', 'BED-NC'), ('made', 'VBN-NC'), (',', ',-NC'), ('his', 'PP$-NC'), ('was', 'BEDZ-NC'), ('the', 'AT-NC'), ('silliest', 'JJT-NC'), ('the', 'AT'), ('possessive', 'NN'), ('his', 'PP$-NC'), ('represents', 'VBZ'), ('his', 'PP$-NC'), ('suggestion', 'NN-NC'), ('and', 'CC'), ('is', 'BEZ'), ('stressed', 'VBN'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('Thus', 'RB'), ('to', 'IN-NC'), ('has', 'HVZ'), ('light', 'JJ'), ('stress', 'NN'), ('both', 'ABX'), ('in', 'IN'), ('that', 'DT-NC'), ('was', 'BEDZ-NC'), ('the', 'AT-NC'), ('conclusion', 'NN-NC'), ('that', 'WPO-NC'), ('I', 'PPSS-NC'), ('came', 'VBD-NC'), ('to', 'IN-NC'), ('and', 'CC'), ('in', 'IN'), ('that', 'DT-NC'), ('was', 'BEDZ-NC'), ('the', 'AT-NC'), ('conclusion', 'NN-NC'), ('I', 'PPSS-NC'), ('came', 'VBD-NC'), ('to', 'IN-NC'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('But', 'CC'), ('when', 'WRB'), ('to', 'TO-NC'), ('represents', 'VBZ'), ('to', 'IN-NC'), ('consciousness', 'NN-NC'), ('in', 'IN'), ('that', 'WPS-NC'), ('was', 'BEDZ-NC'), ('the', 'AT-NC'), ('moment', 'NN-NC'), ('that', 'CS-NC'), ('I', 'PPSS-NC'), ('came', 'VBD-NC'), ('to', 'IN-NC'), (',', ','), ('and', 'CC'), ('similarly', 'RB'), ('in', 'IN'), ('that', 'WPS-NC'), ('was', 'BEDZ-NC'), ('the', 'AT-NC'), ('moment', 'NN-NC'), ('I', 'PPSS-NC'), ('came', 'VBD-NC'), ('to', 'IN-NC'), (',', ','), ('there', 'EX'), ('is', 'BEZ'), ('much', 'QL'), ('stronger', 'JJR'), ('stress', 'NN'), ('on', 'IN'), ('to', 'IN-NC'), ('.', '.')]

\*\*\*\*\*\*\*\*\*\*\*\*

[('Factors', 'NNS-HL'), ('that', 'WPS-HL'), ('inhibit', 'VB-HL'), ('learning', 'VBG-HL'), ('and', 'CC-HL'), ('lead', 'VB-HL'), ('to', 'IN-HL'), ('maladjustment', 'NN-HL')]

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**Chapter 5 Question 35:** Output was incredibly long, doing this for every single occurrence, so I trimmed down like 99% of it because the message is clear after just a few examples. Yes it can be used to discriminate between the uses, although there are occasionally cases where the context is unclear (as seen in the output).

must be

Context is likely epistemic

must sign

Context is likely deontic

must hold

Context is likely deontic

Must solve

Context is likely deontic

must solve

Context is likely deontic

must be

Context is likely epistemic

must be

Context is likely epistemic

must be

Context is likely epistemic

must be

Context is likely epistemic

must establish

Context is likely deontic

must be

Context is likely epistemic

must not

Context is unclear

must for

Context is unclear