Experiment No : 2

```python
from nltk.tokenize import sent_tokenize, word_tokenize
import collections
from nltk import ngrams
f = open("C:/Users/MY/Desktop/New folder/song.txt", "r")
if f.mode == 'r':
        text = f.read()
wt=word_tokenize(text)
print(wt,"\n")
count=0
for i in wt:
        count=count+1
#Unigram Model
uni=input("Enter a word for Unigram: ")
wcount=0
for i in wt:
        if(i==uni):
                wcount=wcount+1

p1=wcount/count
print('\nUnigram Model:\nP(',uni,')=',p1)
#Bigram Model
listbi=[]
n = 2
```

```python
bi = ngrams(wt, 2)

for i in bi:

        listbi.append(i)

print("\nBigram List:\n",listbi,'\n')

freq=collections.Counter(listbi)

w1=input("Input the word: ")

w2=input("Input history: ")

w2count=0


for i in wt:

        if(i==w2):

                w2count=w2count+1


c2 = freq[w2,w1]

p2=c2/w2count

print('\nBigram Model : \nP(',w1,'|',w2,')=',p2)

#Trigram Model

listtri=[]

n = 3

tri = ngrams(wt, 3)

for i in tri:

        listtri.append(i)

print("\nTrigram List:\n",listtri,'\n')

freq1=collections.Counter(listtri)

w1=input("Input the word: ")
```

```python
w2=input("Input history1: ")

w3=input("Input history2: ")

c3 = freq1[w2,w3,w1]

c4 = freq[w2,w3]

p3=c3/c4

print('\nTrigram Model : \nP(',w1,'|',w2,',',w3,')=',p3)
```

Output:

C:\Users\MY\Desktop>python exp1.py

Input :

"Look at her face, it's a wonderful face

And it means something special to me

Look at the way that she smiles when she sees me

How lucky can one fellow be?

She's just my kind of girl, she makes me feel fine

Who could ever believe that she could be mine?

She's just my kind of girl, without her I'm blue

And if she ever leaves me what could I do, what could I do?

And when we go for a walk in the park

And she holds me and squeezes my hand

We'll go on walking for hours and talking

About all the things that we plan

She's just my kind of girl, she makes me feel fine

Who could ever believe that she could be mine?

She's just my kind of girl, without her I'm blue

And if she ever leaves me what could I do, what could I do?

"


```
C:\Users\MY\Desktop>python exp1.py
```

[``', 'Look', 'at', 'her', 'face', ',', 'it', "'s", 'a', 'wonderful', 'face', 'And', 'it', 'means', 'something', 'special', 'to', 'me', 'Look', 'at', 'the', 'way', 'that', 'she', 'smiles', 'when', 'she', 'sees', 'me', 'How', 'lucky', 'can', 'one', 'fellow', 'be', '?', 'She', "'s", 'just', 'my', 'kind', 'of', 'girl', ',', 'she', 'makes', 'me', 'feel', 'fine', 'Who', 'could', 'ever', 'believe', 'that', 'she', 'could', 'be', 'mine', '?', 'She', "'s", 'just', 'my', 'kind', 'of', 'girl', ',', 'without', 'her', 'I', "'m", 'blue', 'And', 'if', 'she', 'ever', 'leaves', 'me', 'what', 'could', 'I', 'do', ',', 'what', 'could', 'I', 'do', '?', 'And', 'when', 'we', 'go', 'for', 'a', 'walk', 'in', 'the', 'park', 'And', 'she', 'holds', 'me', 'and', 'squeezes', 'my', 'hand', 'We', "'ll", 'go', 'on', 'walking', 'for', 'hours', 'and', 'talking', 'About', 'all', 'the', 'things', 'that', 'we', 'plan', 'She', "'s", 'just', 'my', 'kind', 'of', 'girl', ',', 'she', 'makes', 'me', 'feel', 'fine', 'Who', 'could', 'ever', 'believe', 'that', 'she', 'could', 'be', 'mine', '?', 'She', "'s", 'just', 'my', 'kind', 'of', 'girl', ',', 'without', 'her', 'I', "'m", 'blue', 'And', 'if', 'she', 'ever', 'leaves', 'me', 'what', 'could', 'I', 'do', ',', 'what', 'could', 'I', 'do', '?', '"""']

Enter a word for Unigram: walk

Unigram Model:

P(walk)= 0.005714285714285714

Bigram List:

 [(``', 'Look'), ('Look', 'at'), ('at', 'her'), ('her', 'face'), ('face', ','), (',', 'it'), ('it', "'s"), ("'s", 'a'), ('a', 'wonderful'), ('wonderful', 'face'), ('face', 'And'), ('And', 'it'), ('it', 'means'), ('means', 'something'), ('something', 'special'), ('special', 'to'), ('to', 'me'), ('me', 'Look'), ('Look', 'at'), ('at', 'the'), ('the',

'way'), ('way', 'that'), ('that', 'she'), ('she', 'smiles'), ('smiles', 'when'), ('when', 'she'), ('she', 'sees'), ('sees', 'me'), ('me', 'How'), ('How', 'lucky'), ('lucky', 'can'), ('can', 'one'), ('one', 'fellow'), ('fellow', 'be'), ('be', '?'), ('?', 'She'), ('She', "'s"), ("'s", 'just'), ('just', 'my'), ('my', 'kind'), ('kind', 'of'), ('of', 'girl'), ('girl', ','), (',', 'she'), ('she', 'makes'), ('makes', 'me'), ('me', 'feel'), ('feel', 'fine'), ('fine', 'Who'), ('Who', 'could'), ('could', 'ever'), ('ever', 'believe'), ('believe', 'that'), ('that', 'she'), ('she', 'could'), ('could', 'be'), ('be', 'mine'), ('mine', '?'), ('?', 'She'), ('She', "'s"), ("'s", 'just'), ('just', 'my'), ('my', 'kind'), ('kind', 'of'), ('of', 'girl'), ('girl', ','), (',', 'without'), ('without', 'her'), ('her', 'I'), ('I', "'m"), ("'m", 'blue'), ('blue', 'And'), ('And', 'if'), ('if', 'she'), ('she', 'ever'), ('ever', 'leaves'), ('leaves', 'me'), ('me', 'what'), ('what', 'could'), ('could', 'I'), ('I', 'do'), ('do', ','), (',', 'what'), ('what', 'could'), ('could', 'I'), ('I', 'do'), ('do', '?'), ('?', 'And'), ('And', 'when'), ('when', 'we'), ('we', 'go'), ('go', 'for'), ('for', 'a'), ('a', 'walk'), ('walk', 'in'), ('in', 'the'), ('the', 'park'), ('park', 'And'), ('And', 'she'), ('she', 'holds'), ('holds', 'me'), ('me', 'and'), ('and', 'squeezes'), ('squeezes', 'my'), ('my', 'hand'), ('hand', 'We'), ('We', "'ll"), ("'ll", 'go'), ('go', 'on'), ('on', 'walking'), ('walking', 'for'), ('for', 'hours'), ('hours', 'and'), ('and', 'talking'), ('talking', 'About'), ('About', 'all'), ('all', 'the'), ('the', 'things'), ('things', 'that'), ('that', 'we'), ('we', 'plan'), ('plan', 'She'), ('She', "'s"), ("'s", 'just'), ('just', 'my'), ('my', 'kind'), ('kind', 'of'), ('of', 'girl'), ('girl', ','), (',', 'she'), ('she', 'makes'), ('makes', 'me'), ('me', 'feel'), ('feel', 'fine'), ('fine', 'Who'), ('Who', 'could'), ('could', 'ever'), ('ever', 'believe'), ('believe', 'that'), ('that', 'she'), ('she', 'could'), ('could', 'be'), ('be', 'mine'), ('mine', '?'), ('?', 'She'), ('She', "'s"), ("'s", 'just'), ('just', 'my'), ('my', 'kind'), ('kind', 'of'), ('of', 'girl'), ('girl', ','), (',', 'without'), ('without', 'her'), ('her', 'I'), ('I', "'m"), ("'m", 'blue'), ('blue', 'And'), ('And', 'if'), ('if', 'she'), ('she', 'ever'), ('ever', 'leaves'), ('leaves', 'me'), ('me', 'what'), ('what', 'could'), ('could', 'I'), ('I', 'do'), ('do', ','), (',', 'what'), ('what', 'could'), ('could', 'I'), ('I', 'do'), ('do', '?'), ('?', "'''")]

Input the word: could

Input history: what

Bigram Model :

P(could | what)= 1.0

Trigram List:

 [('``', 'Look', 'at'), ('Look', 'at', 'her'), ('at', 'her', 'face'), ('her', 'face', ','), ('face', ',', 'it'), (',', 'it', "'s"), ('it', "'s", 'a'), ("'s", 'a', 'wonderful'), ('a', 'wonderful', 'face'), ('wonderful', 'face', 'And'), ('face', 'And', 'it'), ('And', 'it', 'means'), ('it', 'means', 'something'), ('means', 'something', 'special'), ('something', 'special', 'to'), ('special', 'to', 'me'), ('to', 'me', 'Look'), ('me', 'Look', 'at'), ('Look', 'at', 'the'), ('at', 'the', 'way'), ('the', 'way', 'that'), ('way', 'that', 'she'), ('that', 'she', 'smiles'), ('she', 'smiles',

'when'), ('smiles', 'when', 'she'), ('when', 'she', 'sees'), ('she', 'sees', 'me'), ('sees', 'me', 'How'), ('me', 'How', 'lucky'), ('How', 'lucky', 'can'), ('lucky', 'can', 'one'), ('can', 'one', 'fellow'), ('one', 'fellow', 'be'), ('fellow', 'be', '?'), ('be', '?', 'She'), ('?', 'She', "'s"), ('She', "'s", 'just'), ("'s", 'just', 'my'), ('just', 'my', 'kind'), ('my', 'kind', 'of'), ('kind', 'of', 'girl'), ('of', 'girl', ','), ('girl', ',', 'she'), (',', 'she', 'makes'), ('she', 'makes', 'me'), ('makes', 'me', 'feel'), ('me', 'feel', 'fine'), ('feel', 'fine', 'Who'), ('fine', 'Who', 'could'), ('Who', 'could', 'ever'), ('could', 'ever', 'believe'), ('ever', 'believe', 'that'), ('believe', 'that', 'she'), ('that', 'she', 'could'), ('she', 'could', 'be'), ('could', 'be', 'mine'), ('be', 'mine', '?'), ('mine', '?', 'She'), ('?', 'She', "'s"), ('She', "'s", 'just'), ("'s", 'just', 'my'), ('just', 'my', 'kind'), ('my', 'kind', 'of'), ('kind', 'of', 'girl'), ('of', 'girl', ','), ('girl', ',', 'without'), (',', 'without', 'her'), ('without', 'her', 'I'), ('her', 'I', "'m"), ('I', "'m", 'blue'), ("'m", 'blue', 'And'), ('blue', 'And', 'if'), ('And', 'if', 'she'), ('if', 'she', 'ever'), ('she', 'ever', 'leaves'), ('ever', 'leaves', 'me'), ('leaves', 'me', 'what'), ('me', 'what', 'could'), ('what', 'could', 'I'), ('could', 'I', 'do'), ('I', 'do', ','), ('do', ',', 'what'), (',', 'what', 'could'), ('what', 'could', 'I'), ('could', 'I', 'do'), ('I', 'do', '?'), ('do', '?', 'And'), ('?', 'And', 'when'), ('And', 'when', 'we'), ('when', 'we', 'go'), ('we', 'go', 'for'), ('go', 'for', 'a'), ('for', 'a', 'walk'), ('a', 'walk', 'in'), ('walk', 'in', 'the'), ('in', 'the', 'park'), ('the', 'park', 'And'), ('park', 'And', 'she'), ('And', 'she', 'holds'), ('she', 'holds', 'me'), ('holds', 'me', 'and'), ('me', 'and', 'squeezes'), ('and', 'squeezes', 'my'), ('squeezes', 'my', 'hand'), ('my', 'hand', 'We'), ('hand', 'We', "'ll"), ('We', "'ll", 'go'), ("'ll", 'go', 'on'), ('go', 'on', 'walking'), ('on', 'walking', 'for'), ('walking', 'for', 'hours'), ('for', 'hours', 'and'), ('hours', 'and', 'talking'), ('and', 'talking', 'About'), ('talking', 'About', 'all'), ('About', 'all', 'the'), ('all', 'the', 'things'), ('the', 'things', 'that'), ('things', 'that', 'we'), ('that', 'we', 'plan'), ('we', 'plan', 'She'), ('plan', 'She', "'s"), ('She', "'s", 'just'), ("'s", 'just', 'my'), ('just', 'my', 'kind'), ('my', 'kind', 'of'), ('kind', 'of', 'girl'), ('of', 'girl', ','), ('girl', ',', 'she'), (',', 'she', 'makes'), ('she', 'makes', 'me'), ('makes', 'me', 'feel'), ('me', 'feel', 'fine'), ('feel', 'fine', 'Who'), ('fine', 'Who', 'could'), ('Who', 'could', 'ever'), ('could', 'ever', 'believe'), ('ever', 'believe', 'that'), ('believe', 'that', 'she'), ('that', 'she', 'could'), ('she', 'could', 'be'), ('could', 'be', 'mine'), ('be', 'mine', '?'), ('mine', '?', 'She'), ('?', 'She', "'s"), ('She', "'s", 'just'), ("'s", 'just', 'my'), ('just', 'my', 'kind'), ('my', 'kind', 'of'), ('kind', 'of', 'girl'), ('of', 'girl', ','), ('girl', ',', 'without'), (',', 'without', 'her'), ('without', 'her', 'I'), ('her', 'I', "'m"), ('I', "'m", 'blue'), ("'m", 'blue', 'And'), ('blue', 'And', 'if'), ('And', 'if', 'she'), ('if', 'she', 'ever'), ('she', 'ever', 'leaves'), ('ever', 'leaves', 'me'), ('leaves', 'me', 'what'), ('me', 'what', 'could'), ('what', 'could', 'I'), ('could', 'I', 'do'), ('I', 'do', ','), ('do', ',', 'what'), (',', 'what', 'could'), ('what', 'could', 'I'), ('could', 'I', 'do'), ('I', 'do', '?'), ('do', '?', '"""')]

Input the word: I

Input history1: what

Input history2: could

Trigram Model :

P(I | what , could)= 1.0