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Lab 4 Exercises:

Write a program to get Antonyms from WordNet

Write a program for stemming Non-English words

In [1]:

```
# wordnet includes groups of synonyms and a brief definition.  
from nltk.corpus import wordnet  
syn = wordnet.synsets("pain")  
print(syn[0].definition())  
print(syn[0].examples())
```

```
a symptom of some physical hurt or disorder  
['the patient developed severe pain and distension']
```

In [3]:

```
from nltk.corpus import wordnet  
synonyms = []  
for syn in wordnet.synsets('Computer'):  
    for lemma in syn.lemmas():  
        synonyms.append(lemma.name())  
print(synonyms)
```

```
['computer', 'computing_machine', 'computing_device', 'data_processor', 'e  
lectronic_computer', 'information_processing_system', 'calculator', 'recko  
ner', 'figurer', 'estimator', 'computer']
```

In [4]:

```
from nltk.corpus import wordnet  
synonyms = []  
for syn in wordnet.synsets('Computer'):  
    for lemma in syn.lemmas():  
        synonyms.append(lemma.name())  
print(synonyms)
```

```
['computer', 'computing_machine', 'computing_device', 'data_processor', 'e  
lectronic_computer', 'information_processing_system', 'calculator', 'recko  
ner', 'figurer', 'estimator', 'computer']
```

In [5]:

```
from nltk.corpus import wordnet
synonyms = []
antonyms = []
for syn in wordnet.synsets("active"):
    for l in syn.lemmas():
        synonyms.append(l.name())
        if l.antonyms():
            antonyms.append(l.antonyms()[0].name())
print(set(synonyms))
print(set(antonyms))
```

```
{'fighting', 'alive', 'active_agent', 'active_voice', 'combat-ready', 'active', 'dynamic', 'participating'}
{'extinct', 'quiet', 'dormant', 'passive', 'inactive'}
```

In [6]:

```
word = wordnet.synsets("play")[0]
print("Word name is: ", word.name())
print()
print("Word definition is: ", word.definition())
print()
print("Example of the word is: ", word.examples())
```

Word name is: play.n.01

Word definition is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

In [8]:

```
for words in wordnet.synsets("play"):
    print("Name of the word is:", word.name())
    print("Definition of the word is:", word.definition())
    print("Example of the word is:", word.examples())
    for lemma in words.lemmas():
        print(lemma)
    print()
```

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.01.play')
Lemma('play.n.01.drama')
Lemma('play.n.01.dramatic_play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.02.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.03.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('maneuver.n.03.maneuver')
Lemma('maneuver.n.03.manoeuvre')
Lemma('maneuver.n.03.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.05.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.06.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('bid.n.02.bid')
Lemma('bid.n.02.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.08.play')
Lemma('play.n.08.child's_play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('playing_period.n.01.playing_period')
Lemma('playing_period.n.01.period_of_play')
Lemma('playing_period.n.01.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('free_rein.n.01.free_rein')
Lemma('free_rein.n.01.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('shimmer.n.01.shimmer')
Lemma('shimmer.n.01.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('fun.n.02.fun')
Lemma('fun.n.02.play')
Lemma('fun.n.02.sport')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('looseness.n.05.looseness')
Lemma('looseness.n.05.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.14.play')
Lemma('play.n.14.frolic')
Lemma('play.n.14.romp')
Lemma('play.n.14.gambol')
Lemma('play.n.14.caper')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('turn.n.03.turn')
Lemma('turn.n.03.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('gambling.n.01.gambling')
Lemma('gambling.n.01.gaming')
Lemma('gambling.n.01.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.n.17.play')
Lemma('play.n.17.swordplay')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.v.01.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.v.02.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.v.03.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('act.v.03.act')
Lemma('act.v.03.play')
Lemma('act.v.03.represent')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.v.05.play')

Name of the word is: play.n.01
Definition of the word is: a dramatic work intended for performance by actors on a stage
Example of the word is: ['he wrote several plays but only one was produced on Broadway']
Lemma('play.v.06.play')

Lemma('play.v.06.spiel')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.07.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('act.v.05.act')

Lemma('act.v.05.play')

Lemma('act.v.05.act_as')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.09.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.10.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.11.play')

Lemma('play.v.11.recreate')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.12.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.13.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.14.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.15.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.16.play')

Lemma('play.v.16.toy')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.17.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.18.play')

Lemma('play.v.18.run')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('toy.v.02.toy')

Lemma('toy.v.02.fiddle')

Lemma('toy.v.02.diddle')

Lemma('toy.v.02.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.20.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('dally.v.04.dally')

Lemma('dally.v.04.trifle')

Lemma('dally.v.04.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.22.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('dally.v.01.dally')

Lemma('dally.v.01.toy')

Lemma('dally.v.01.play')

Lemma('dally.v.01.flirt')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.24.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('act.v.10.act')

Lemma('act.v.10.play')

Lemma('act.v.10.roleplay')

Lemma('act.v.10.playact')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.26.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('bring.v.03.bring')

Lemma('bring.v.03.work')

Lemma('bring.v.03.play')

Lemma('bring.v.03.wreak')

Lemma('bring.v.03.make_for')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.28.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.29.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('bet.v.02.bet')

Lemma('bet.v.02.wager')

Lemma('bet.v.02.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.31.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.32.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.33.play')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('meet.v.10.meet')

Lemma('meet.v.10.encounter')

Lemma('meet.v.10.play')

Lemma('meet.v.10.take_on')

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.v.35.play')

In [9]:

```
for words in wordnet.synsets("happy"):
    print("Name of the word is:", words.name())
    print("Definition of the word is:", words.definition())
    print("Example of the word is:", words.examples())
    for lemma in words.lemmas():
        print(lemma)
    print()
```

Name of the word is: happy.a.01

Definition of the word is: enjoying or showing or marked by joy or pleasure

Example of the word is: ['a happy smile', 'spent many happy days on the beach', 'a happy marriage']

Lemma('happy.a.01.happy')

Name of the word is: felicitous.s.02

Definition of the word is: marked by good fortune

Example of the word is: ['a felicitous life', 'a happy outcome']

Lemma('felicitous.s.02.felicitous')

Lemma('felicitous.s.02.happy')

Name of the word is: glad.s.02

Definition of the word is: eagerly disposed to act or to be of service

Example of the word is: ['glad to help']

Lemma('glad.s.02.glad')

Lemma('glad.s.02.happy')

Name of the word is: happy.s.04

Definition of the word is: well expressed and to the point

Example of the word is: ['a happy turn of phrase', 'a few well-chosen words']

Lemma('happy.s.04.happy')

Lemma('happy.s.04.well-chosen')

In [10]:

```
for words in wordnet.synsets("play"):
    print("Name of the word is:", words.name())
    print("Definition of the word is:", words.definition())
    print("Example of the word is:", words.examples())
    for lemma in words.lemmas():
        print(lemma)
    print()
```

Name of the word is: play.n.01

Definition of the word is: a dramatic work intended for performance by actors on a stage

Example of the word is: ['he wrote several plays but only one was produced on Broadway']

Lemma('play.n.01.play')

Lemma('play.n.01.drama')

Lemma('play.n.01.dramatic_play')

Name of the word is: play.n.02

Definition of the word is: a theatrical performance of a drama

Example of the word is: ['the play lasted two hours']

Lemma('play.n.02.play')

Name of the word is: play.n.03

Definition of the word is: a preset plan of action in team sports

Example of the word is: ['the coach drew up the plays for her team']

Lemma('play.n.03.play')

Name of the word is: maneuver.n.03

Definition of the word is: a deliberate coordinated movement requiring dexterity and skill

Example of the word is: ['he made a great maneuver', 'the runner was out on a play by the shortstop']

Lemma('maneuver.n.03.maneuver')

Lemma('maneuver.n.03.manoeuvre')

Lemma('maneuver.n.03.play')

Name of the word is: play.n.05

Definition of the word is: a state in which action is feasible

Example of the word is: ['the ball was still in play', 'insiders said the company's stock was in play']

Lemma('play.n.05.play')

Name of the word is: play.n.06

Definition of the word is: utilization or exercise

Example of the word is: ['the play of the imagination']

Lemma('play.n.06.play')

Name of the word is: bid.n.02

Definition of the word is: an attempt to get something

Example of the word is: ['they made a futile play for power', 'he made a bid to gain attention']

Lemma('bid.n.02.bid')

Lemma('bid.n.02.play')

Name of the word is: play.n.08

Definition of the word is: activity by children that is guided more by imagination than by fixed rules

Example of the word is: ['Freud believed in the utility of play to a small child']

Lemma('play.n.08.play')

Lemma('play.n.08.child's_play')

Name of the word is: playing_period.n.01

Definition of the word is: (in games or plays or other performances) the time during which play proceeds

Example of the word is: ['rain stopped play in the 4th inning']

Lemma('playing_period.n.01.playing_period')

Lemma('playing_period.n.01.period_of_play')

Lemma('playing_period.n.01.play')

Name of the word is: free_rein.n.01
Definition of the word is: the removal of constraints
Example of the word is: ['he gave free rein to his impulses', 'they gave full play to the artist's talent']
Lemma('free_rein.n.01.free_rein')
Lemma('free_rein.n.01.play')

Name of the word is: shimmer.n.01
Definition of the word is: a weak and tremulous light
Example of the word is: ['the shimmer of colors on iridescent feathers', 'the play of light on the water']
Lemma('shimmer.n.01.shimmer')
Lemma('shimmer.n.01.play')

Name of the word is: fun.n.02
Definition of the word is: verbal wit or mockery (often at another's expense but not to be taken seriously)
Example of the word is: ['he became a figure of fun', 'he said it in sport']
Lemma('fun.n.02.fun')
Lemma('fun.n.02.play')
Lemma('fun.n.02.sport')

Name of the word is: looseness.n.05
Definition of the word is: movement or space for movement
Example of the word is: ['there was too much play in the steering wheel']
Lemma('looseness.n.05.looseness')
Lemma('looseness.n.05.play')

Name of the word is: play.n.14
Definition of the word is: gay or light-hearted recreational activity for diversion or amusement
Example of the word is: ['it was all done in play', 'their frolic in the surf threatened to become ugly']
Lemma('play.n.14.play')
Lemma('play.n.14.frolic')
Lemma('play.n.14.romp')
Lemma('play.n.14.gambol')
Lemma('play.n.14.caper')

Name of the word is: turn.n.03
Definition of the word is: (game) the activity of doing something in an agreed succession
Example of the word is: ['it is my turn', 'it is still my play']
Lemma('turn.n.03.turn')
Lemma('turn.n.03.play')

Name of the word is: gambling.n.01
Definition of the word is: the act of playing for stakes in the hope of winning (including the payment of a price for a chance to win a prize)
Example of the word is: ['his gambling cost him a fortune', 'there was heavy play at the blackjack table']
Lemma('gambling.n.01.gambling')
Lemma('gambling.n.01.gaming')
Lemma('gambling.n.01.play')

Name of the word is: play.n.17
Definition of the word is: the act using a sword (or other weapon) vigorously and skillfully
Example of the word is: []

```
Lemma('play.n.17.play')  
Lemma('play.n.17.swordplay')
```

Name of the word is: play.v.01

Definition of the word is: participate in games or sport

Example of the word is: ['We played hockey all afternoon', 'play cards', 'Pele played for the Brazilian teams in many important matches']

```
Lemma('play.v.01.play')
```

Name of the word is: play.v.02

Definition of the word is: act or have an effect in a specified way or with a specific effect or outcome

Example of the word is: ['This factor played only a minor part in his decision', 'This development played into her hands', 'I played no role in your dismissal']

```
Lemma('play.v.02.play')
```

Name of the word is: play.v.03

Definition of the word is: play on an instrument

Example of the word is: ['The band played all night long']

```
Lemma('play.v.03.play')
```

Name of the word is: act.v.03

Definition of the word is: play a role or part

Example of the word is: ['Gielgud played Hamlet', 'She wants to act Lady Macbeth, but she is too young for the role', 'She played the servant to her husband's master']

```
Lemma('act.v.03.act')
```

```
Lemma('act.v.03.play')
```

```
Lemma('act.v.03.represent')
```

Name of the word is: play.v.05

Definition of the word is: be at play; be engaged in playful activity; amuse oneself in a way characteristic of children

Example of the word is: ['The kids were playing outside all day', 'I used to play with trucks as a little girl']

```
Lemma('play.v.05.play')
```

Name of the word is: play.v.06

Definition of the word is: replay (as a melody)

Example of the word is: ['Play it again, Sam', 'She played the third movement very beautifully']

```
Lemma('play.v.06.play')
```

```
Lemma('play.v.06.spiel')
```

Name of the word is: play.v.07

Definition of the word is: perform music on (a musical instrument)

Example of the word is: ['He plays the flute', 'Can you play on this old recorder?']

```
Lemma('play.v.07.play')
```

Name of the word is: act.v.05

Definition of the word is: pretend to have certain qualities or state of mind

Example of the word is: ['He acted the idiot', 'She plays deaf when the news are bad']

```
Lemma('act.v.05.act')
```

```
Lemma('act.v.05.play')
```

```
Lemma('act.v.05.act_as')
```

Name of the word is: play.v.09

Definition of the word is: move or seem to move quickly, lightly, or irregularly

Example of the word is: ['The spotlights played on the politicians']

Lemma('play.v.09.play')

Name of the word is: play.v.10

Definition of the word is: bet or wager (money)

Example of the word is: ['He played \$20 on the new horse', 'She plays the races']

Lemma('play.v.10.play')

Name of the word is: play.v.11

Definition of the word is: engage in recreational activities rather than work; occupy oneself in a diversion

Example of the word is: ['On weekends I play', 'The students all recreate alike']

Lemma('play.v.11.play')

Lemma('play.v.11.recreate')

Name of the word is: play.v.12

Definition of the word is: pretend to be somebody in the framework of a game or playful activity

Example of the word is: ["Let's play like I am mommy", 'Play cowboy and Indians']

Lemma('play.v.12.play')

Name of the word is: play.v.13

Definition of the word is: emit recorded sound

Example of the word is: ['The tape was playing for hours', 'the stereo was playing Beethoven when I entered']

Lemma('play.v.13.play')

Name of the word is: play.v.14

Definition of the word is: perform on a certain location

Example of the word is: ['The prodigy played Carnegie Hall at the age of 16', 'She has been playing on Broadway for years']

Lemma('play.v.14.play')

Name of the word is: play.v.15

Definition of the word is: put (a card or piece) into play during a game, or act strategically as if in a card game

Example of the word is: ['He is playing his cards close to his chest', 'The Democrats still have some cards to play before they will concede the electoral victory']

Lemma('play.v.15.play')

Name of the word is: play.v.16

Definition of the word is: engage in an activity as if it were a game rather than take it seriously

Example of the word is: ['They played games on their opponents', 'play the stock market', 'play with her feelings', 'toy with an idea']

Lemma('play.v.16.play')

Lemma('play.v.16.toy')

Name of the word is: play.v.17

Definition of the word is: behave in a certain way

Example of the word is: ['play safe', 'play it safe', 'play fair']

Lemma('play.v.17.play')

Name of the word is: play.v.18

Definition of the word is: cause to emit recorded audio or video

Example of the word is: ['They ran the tapes over and over again', 'I'll play you my favorite record', 'He never tires of playing that video']

Lemma('play.v.18.play')

Lemma('play.v.18.run')

Name of the word is: toy.v.02

Definition of the word is: manipulate manually or in one's mind or imagination

Example of the word is: ['She played nervously with her wedding ring', 'Don't fiddle with the screws', 'He played with the idea of running for the Senate']

Lemma('toy.v.02.toy')

Lemma('toy.v.02.fiddle')

Lemma('toy.v.02.diddle')

Lemma('toy.v.02.play')

Name of the word is: play.v.20

Definition of the word is: use to one's advantage

Example of the word is: ['She plays on her clients' emotions']

Lemma('play.v.20.play')

Name of the word is: dally.v.04

Definition of the word is: consider not very seriously

Example of the word is: ['He is trifling with her', 'She plays with the thought of moving to Tasmania']

Lemma('dally.v.04.dally')

Lemma('dally.v.04.trifle')

Lemma('dally.v.04.play')

Name of the word is: play.v.22

Definition of the word is: be received or accepted or interpreted in a specific way

Example of the word is: ['This speech didn't play well with the American public', 'His remarks played to the suspicions of the committee']

Lemma('play.v.22.play')

Name of the word is: dally.v.01

Definition of the word is: behave carelessly or indifferently

Example of the word is: ['Play about with a young girl's affection']

Lemma('dally.v.01.dally')

Lemma('dally.v.01.toy')

Lemma('dally.v.01.play')

Lemma('dally.v.01.flirt')

Name of the word is: play.v.24

Definition of the word is: cause to move or operate freely within a bounded space

Example of the word is: ['The engine has a wheel that is playing in a rack']

Lemma('play.v.24.play')

Name of the word is: act.v.10

Definition of the word is: perform on a stage or theater

Example of the word is: ['She acts in this play', 'He acted in `Julius Caesar`', 'I played in `A Christmas Carol`']

Lemma('act.v.10.act')

Lemma('act.v.10.play')

Lemma('act.v.10.roleplay')

Lemma('act.v.10.playact')

Name of the word is: play.v.26

Definition of the word is: be performed or presented for public viewing

Example of the word is: ["What's playing in the local movie theater?", "`Cats' has been playing on Broadway for many years"]

Lemma('play.v.26.play')

Name of the word is: bring.v.03

Definition of the word is: cause to happen or to occur as a consequence

Example of the word is: ['I cannot work a miracle', 'wreak havoc', 'bring comments', 'play a joke', 'The rain brought relief to the drought-stricken area']

Lemma('bring.v.03.bring')

Lemma('bring.v.03.work')

Lemma('bring.v.03.play')

Lemma('bring.v.03.wreak')

Lemma('bring.v.03.make_for')

Name of the word is: play.v.28

Definition of the word is: discharge or direct or be discharged or directed as if in a continuous stream

Example of the word is: ['play water from a hose', 'The fountains played all day']

Lemma('play.v.28.play')

Name of the word is: play.v.29

Definition of the word is: make bets

Example of the word is: ['Play the races', 'play the casinos in Trouville']

Lemma('play.v.29.play')

Name of the word is: bet.v.02

Definition of the word is: stake on the outcome of an issue

Example of the word is: ['I bet \$100 on that new horse', 'She played all her money on the dark horse']

Lemma('bet.v.02.bet')

Lemma('bet.v.02.wager')

Lemma('bet.v.02.play')

Name of the word is: play.v.31

Definition of the word is: shoot or hit in a particular manner

Example of the word is: ['She played a good backhand last night']

Lemma('play.v.31.play')

Name of the word is: play.v.32

Definition of the word is: use or move

Example of the word is: ['I had to play my queen']

Lemma('play.v.32.play')

Name of the word is: play.v.33

Definition of the word is: employ in a game or in a specific position

Example of the word is: ['They played him on first base']

Lemma('play.v.33.play')

Name of the word is: meet.v.10

Definition of the word is: contend against an opponent in a sport, game, or battle

Example of the word is: ['Princeton plays Yale this weekend', 'Charlie likes to play Mary']

Lemma('meet.v.10.meet')

Lemma('meet.v.10.encounter')

Lemma('meet.v.10.play')

Lemma('meet.v.10.take_on')

Name of the word is: play.v.35

Definition of the word is: exhaust by allowing to pull on the line

Example of the word is: ['play a hooked fish']

Lemma('play.v.35.play')

In [11]:

```
from nltk.corpus import wordnet
synonyms = []
antonyms = []
for syn in wordnet.synsets("new"):
    for l in syn.lemmas():
        synonyms.append(l.name())
    if l.antonyms():
        antonyms.append(l.antonyms()[0].name())
print(set(synonyms))
print(set(antonyms))
```

```
{'fresh', 'young', 'raw', 'New', 'novel', 'Modern', 'new', 'unexampld',
'freshly', 'newly', 'newfangled'}
{'worn', 'old'}
```

In [12]:

```
synonyms = set()
antonyms = set()
for words in wordnet.synsets('New'):
    for lemma in words.lemmas():
        synonyms.add(lemma.name())
        if lemma.antonyms():
            antonyms.add(lemma.antonyms()[0].name())
print(synonyms)
print()
print(antonyms)
```

```
{'fresh', 'young', 'raw', 'New', 'novel', 'Modern', 'new', 'unexampld',
'freshly', 'newly', 'newfangled'}

{'worn', 'old'}
```

Generating more abstract term of a word.

In [13]:

```
word = wordnet.synsets("play")[0]
print(word.hypernyms())
```

```
[Synset('dramatic_composition.n.01')]
```

In [14]:

```
syn = wordnet.synsets('hello')[0]
print ("Synset name:", syn.name())
print ("\nSynset abstract term:", syn.hypernyms())
print ("\nSynset specific term:",
syn.hypernyms()[0].hyponyms())
syn.root_hypernyms()
print ("\nSynset root hypernym:", syn.root_hypernyms())
```

Synset name: hello.n.01

Synset abstract term: [Synset('greeting.n.01')]

Synset specific term: [Synset('calling_card.n.02'), Synset('good_afternoon.n.01'), Synset('good_morning.n.01'), Synset('hail.n.03'), Synset('hello.n.01'), Synset('pax.n.01'), Synset('reception.n.01'), Synset('regard.n.03'), Synset('salute.n.02'), Synset('salute.n.03'), Synset('welcome.n.02'), Synset('well-wishing.n.01')]

Synset root hypernym: [Synset('entity.n.01')]

Checking the similarity between the words.

In [15]:

```
word1 = wordnet.synsets("ship", "n")[0]
word2 = wordnet.synsets("boat", "n")[0]
print(word1.wup_similarity(word2))
```

0.9090909090909091

In [16]:

```
word1 = wordnet.synsets("college", "n")[0]
word2 = wordnet.synsets("university", "n")[0]
print(word1.wup_similarity(word2))
```

0.8333333333333334

In [18]:

```
word1 = wordnet.synsets("fruit", "n")[0]
word2 = wordnet.synsets("apple", "n")[0]
print(word1.wup_similarity(word2))
```

0.9

In [19]:

```
word1 = wordnet.synsets("color", "n")[0]
word2 = wordnet.synsets("boat", "n")[0]
print(word1.wup_similarity(word2))
```

0.11764705882352941

In [20]:

```
word1 = wordnet.synsets("india", "n")[0]
word2 = wordnet.synsets("bharat", "n")[0]
print(word1.wup_similarity(word2))
```

1.0

In [21]:

```
word1 = wordnet.synsets("pakistan", "n")[0]
word2 = wordnet.synsets("bharat", "n")[0]
print(word1.wup_similarity(word2))
```

0.9

In [24]:

```
word1 = wordnet.synsets("mobile", "n")[0]
word2 = wordnet.synsets("laptop", "n")[0]
print(word1.wup_similarity(word2))
```

0.2

Checking how parts of speech tagging works.

In [25]:

```
# Parts of speech
syn = wordnet.synsets('hello')[0]
print("Syn tag : ", syn.pos())
syn = wordnet.synsets('doing')[0]
print("Syn tag : ", syn.pos())
syn = wordnet.synsets('beautiful')[0]
print("Syn tag : ", syn.pos())
syn = wordnet.synsets('quickly')[0]
print("Syn tag : ", syn.pos())
```

Syn tag : n

Syn tag : v

Syn tag : a

Syn tag : r

In [27]:

```
# Parts of speech
syn = wordnet.synsets('hello')[0]
print ("hello : ", syn.pos())
syn = wordnet.synsets('doing')[0]
print ("doing: ", syn.pos())
syn = wordnet.synsets('beautiful')[0]
print ("beautiful: ", syn.pos())
syn = wordnet.synsets('quickly')[0]
print ("quickly: ", syn.pos())
```

```
hello : n
doing: v
beautiful: a
quickly: r
```

Stemming of spanish words

In [29]:

```
from nltk.stem import SnowballStemmer
```

In [30]:

```
spanishStemmer = SnowballStemmer("spanish", ignore_stopwords=True)
spanishStemmer.stem("Corriendo")
```

Out[30]:

```
'corr'
```

Stemming of french words

In [31]:

```
frenchStemmer = SnowballStemmer("french")
frenchStemmer.stem("Bonjoura")
```

Out[31]:

```
'bonjour'
```

In [32]:

```
englishStemmer = SnowballStemmer("english", ignore_stopwords=True)
englishStemmer.stem("eating")
```

Out[32]:

```
'eat'
```

In [33]:

```
englishStemmer = SnowballStemmer("english")  
englishStemmer.stem("having")
```

Out[33]:

'have'

In [35]:

```
from nltk.stem import PorterStemmer
```

In [36]:

```
porter_stemmer = PorterStemmer()  
porter_stemmer.stem("writing")
```

Out[36]:

'write'

In [38]:

```
from nltk.stem import LancasterStemmer
```

In [39]:

```
lanc_stemmer = LancasterStemmer()  
lanc_stemmer.stem("eats")
```

Out[39]:

'eat'

Using regex stemmer

In [40]:

```
from nltk.stem import RegexpStemmer
```

In [41]:

```
reg_stemmer = RegexpStemmer('ing')  
reg_stemmer.stem('ingeat')
```

Out[41]:

'eat'

Stemming a sentence in two ways

In [42]:

```

from nltk.tokenize import word_tokenize, sent_tokenize, RegexpTokenizer
sentence="Pythoners are very intelligent and work very pythonly and now they are python
ing their way to success."

print(porter_stemmer.stem(sentence))
print()
def stemSentence(sentence):
    token_words = word_tokenize(sentence)
    token_words
    stem_sentence = []
    for word in token_words:
        stem_sentence.append(porter_stemmer.stem(word))
        stem_sentence.append(" ")
    return "".join(stem_sentence)
x = stemSentence(sentence)
print(x)

```

pythoners are very intelligent and work very pythonly and now they are pyth
honing their way to success.

python are veri intellig and work veri pythonli and now they are python th
eir way to success .

stem text file

In [45]:

```

file = open(r"C:\Users\hp\Documents\RAM.txt")
my_lines_list = file.readlines()
my_lines_list

```

Out[45]:

```

["I am taking about computer Ram . Ram stands for Random access memory.You
r computer Ram is essentially short term memory where Data is stored as th
e need it. Ram is one of the most important components in determining your
system's performance. Ram is faster than Hard disk.you cann't run a comput
er withour Ram. RAM is volatile memory that temporarily stores the files
you are working on.Where ROM is non-volatile memory that permanently stor
es instructions for your computer. Ram is a type of computer data storage
and stores the files that are in use while the computer is running. These
files may include various programs such as operating system, etc. RAM allo
ws for faster access to files, as compared to other types of data storag
e."]

```


In [50]:

```
file = open(r"C:\Users\hp\Documents\RAM.txt")  
text = file.read()  
text
```

Out[50]:

"I am taking about computer Ram . Ram stands for Random access memory. Your computer Ram is essentially short term memory where Data is stored as the need it. Ram is one of the most important components in determining your system's performance. Ram is faster than Hard disk. you can't run a computer without Ram. RAM is volatile memory that temporarily stores the files you are working on. Where ROM is non-volatile memory that permanently stores instructions for your computer. Ram is a type of computer data storage and stores the files that are in use while the computer is running. These files may include various programs such as operating system, etc. RAM allows for faster access to files, as compared to other types of data storage."

In [51]:

```
stemSentence(text)
```

Out[51]:

"i am take about comput ram . ram stand for random access memory. your computer ram is essentially short term memory where data is stored as the need it . ram is one of the most important components in determining your system 's performance . ram is faster than hard disk. you can 't run a computer without ram . ram is volatile memory that temporarily store the file you are work on. where rom is non-volatile memory that permanently store instructions for your computer . ram is a type of computer data storage and store the file that are in use while the computer is run . these file may include various program such as operating system , etc . ram allow for faster access to file , as compared to other type of data storage . "

In [55]:

```
def stemSentence(sentence):
    token_words=word_tokenize(sentence)
    token_words
    stem_sentence=[]
    for word in token_words:
        stem_sentence.append(porter_stemmer.stem(word))
        stem_sentence.append(" ")
    return "".join(stem_sentence)
print(my_lines_list[0])
print("Stemmed sentence: ")
x=stemSentence(my_lines_list[0])
print(x)
```

I am taking about computer Ram . Ram stands for Random access memory. Your computer Ram is essentially short term memory where Data is stored as the need it. Ram is one of the most important components in determining your system's performance. Ram is faster than Hard disk. you can't run a computer without Ram. RAM is volatile memory that temporarily stores the files you are working on. Where ROM is non-volatile memory that permanently stores instructions for your computer. Ram is a type of computer data storage and stores the files that are in use while the computer is running. These files may include various programs such as operating system, etc. RAM allows for faster access to files, as compared to other types of data storage.

Stemmed sentence:

i am take about comput ram . ram stand for random access memory. your computer ram is essenti short term memori where data is store as the need it . ram is one of the most import compon in determin your system 's perform . ram is faster than hard disk. you can n't run a comput without ram . ram is volatili memori that temporarili store the file you are work on. wher rom is non-volatili memori that perman store instruct for your comput . ram is a type of comput data storag and store the file that are in use while the comput is run . these file may includ variou program such as oper system , etc . ram allow for faster access to file , as compar to other type of data storag .

In [56]:

```
stem_file=open("data-science-wiki.txt",mode="a+", encoding="utf-8")
for line in my_lines_list:
    stem_sentence=stemSentence(line)
    stem_file.write(stem_sentence)
stem_file.close()
```