

:[2] In

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

:[7] In

```
import nltk
from nltk.stem import PorterStemmer
nltk.download('punkt')
porter = PorterStemmer()
l_words = ['dogs', 'programming', 'programs', 'programmed', 'cakes', 'indices', 'matrices']
for word in l_words:
    print(f'{word} \t -> {porter.stem(word)}'.expandtabs(15))
```

```
dogs          -> dog
programming   -> program
programs      -> program
programmed    -> program
cakes         -> cake
indices       -> indic
matrices      -> matric
```

```
nltk_data] Downloading package punkt to]
...nltk_data]      C:\Users\D7me_\AppData\Roaming\nltk_data]
!nltk_data]   Package punkt is already up-to-date]
```

```

from nltk.tokenize import TreebankWordTokenizer

sentence = '''A stemmer for English operating on the stem cat sh
ould identify such strings as cats, catlike, and catty. A stem
ming algorithm might also reduce the words fishing, fished, an
d fisher to the stem fish. The stem need not be a word, for ex
ample the Porter algorithm reduces, argue, argued, argues, arg
uing, and argus to the stem argu.'''

## tokenize the sentence
list = nltk.word_tokenize(sentence)

## print each word in the sentence before and after Stemming
for word in list:
    print(f'{word} \t -> {porter.stem(word)}'.expandtabs(15))

```

A	-> A
stemmer	-> stemmer
for	-> for
English	-> english
operating	-> oper
on	-> on
the	-> the
stem	-> stem
cat	-> cat
sh	-> sh
ould	-> ould
identify	-> identifi
such	-> such
strings	-> string
as	-> as
cats	-> cat
, <-	,
catlike	-> catlik
, <-	,
and	-> and
catty	-> catti
. <-	.
A	-> A
stem	-> stem
ming	-> ming
algorithm	-> algorithm
might	-> might
also	-> also
reduce	-> reduc
the	-> the
words	-> word
fishing	-> fish
, <-	,
fished	-> fish
, <-	,
an	-> an
d	-> d
fisher	-> fisher
to	-> to
the	-> the
stem	-> stem

```

fish          -> fish
. <-          .
The           -> the
stem          -> stem
need          -> need
not           -> not
be            -> be
a             -> a
word          -> word
, <-          ,
for           -> for
ex            -> ex
ample         -> ampl
the           -> the
Porter        -> porter
algorithm     -> algorithm
reduces       -> reduc
, <-          ,
argue         -> argu
, <-          ,
argued        -> argu
, <-          ,
argues        -> argu
, <-          ,
arg           -> arg
uing          -> u
, <-          ,
and           -> and
argus         -> argu
to            -> to
the           -> the
stem          -> stem
argu          -> argu
. <-          .

```

:[ ] In

:[12] In

```

from nltk.tokenize import sent_tokenize, word_tokenize
sentence = "A stemmer for English operating on the stem cat should identify such strings as
tokenized_words = word_tokenize(sentence)
tokenized_sentence = []
for word in tokenized_words:
    tokenized_sentence.append(porter.stem(word))
tokenized_sentence = " ".join(tokenized_sentence)
tokenized_sentence

```

Out[12]:

A stemmer for english oper on the stem cat should identifi such string as c'  
 at , catlik , and catty.a stem algorithm might also reduc the word fish , fi  
 'sh , and fisher to the stem fish

:[14] In

```
from nltk.stem.isri import ISRIStemmer
st = ISRIStemmer()
w='حركات'
print(st.stem(w))
```

حرك

:[23] In

```
file=open("D:\\Users\\D7me_\\Anaconda3\\Abdulrhman.txt")
Sentences= file.read()
def stemSentence(sentence):
    token_words=word_tokenize(sentence)
    token_words
    stem_sentence=[]
    for word in token_words: stem_sentence.append(porter.stem(word))
    stem_sentence.append(" ")
    return "".join(stem_sentence)
print(Sentences)
print("Stemmed sentence")
x=stemSentence(Sentences)
print(x)
```

In computer science, artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and animals. Computer science defines AI research as the study of intelligent agents: any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals

Stemmed sentence

In computer science, artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and animals. Computer science defines AI research as the study of intelligent agents: any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goal

:[26] In

```
nltk.download('wordnet')
```

```
nltk_data] Downloading package wordnet to]
...nltk_data] C:\Users\D7me\AppData\Roaming\nltk_data]
.nltk_data] Unzipping corpora\wordnet.zip]
```

Out[26]:

True

:[31] In

```
File "<tokenize>", line 9
(sentence_words.remove(word
^
```

**IndentationError:** unindent does not match any outer indentation level

:[35] In

```

from nltk.stem import WordNetLemmatizer
wordnet_lemmatizer = WordNetLemmatizer()
sentence1 = "He was running and eating at same time. He has bad habit of swimming after pla

punctuations="?:!.,;"
sentence_words = nltk.word_tokenize(sentence)
for word in sentence_words:
    if word in punctuations:
        sentence_words.remove(word)
sentence_words
print("{0:20}{1:20}".format("Word", "Lemma"))
for word in sentence_words:
    print ("{0:20}{1:20}".format(word,wordnet_lemmatizer.lemmatize(word)))

```

Word	Lemma
A	A
stemmer	stemmer
for	for
English	English
operating	operating
on	on
the	the
stem	stem
cat	cat
should	should
identify	identify
such	such
strings	string
as	a
cats	cat
catlike	catlike
and	and
catty.A	catty.A
stemming	stemming
algorithm	algorithm
might	might
also	also
reduce	reduce
the	the
words	word
fishing	fishing
fished	fished
and	and
fisher	fisher
to	to
the	the
stem	stem
fish	fish

:[39] In

```

for word in sentence_words:
    print ("{:20}{:20}".format(word,wordnet_lemmatizer.lemmatize(word, pos="v")))

```

A	A
stemmer	stemmer
for	for
English	English
operating	operate
on	on
the	the
stem	stem
cat	cat
should	should
identify	identify
such	such
strings	string
as	as
cats	cat
catlike	catlike
and	and
catty.A	catty.A
stemming	stem
algorithm	algorithm
might	might
also	also
reduce	reduce
the	the
words	word
fishing	fish
fished	fish
and	and
fisher	fisher
to	to
the	the
stem	stem
fish	fish

:[ ] In