CSE 3024

Web Mining

LAB ASSESSMENT - 1

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1. Create a Python programme to tokenize the following using the NLTK toolkit:

a) word

b) sentence

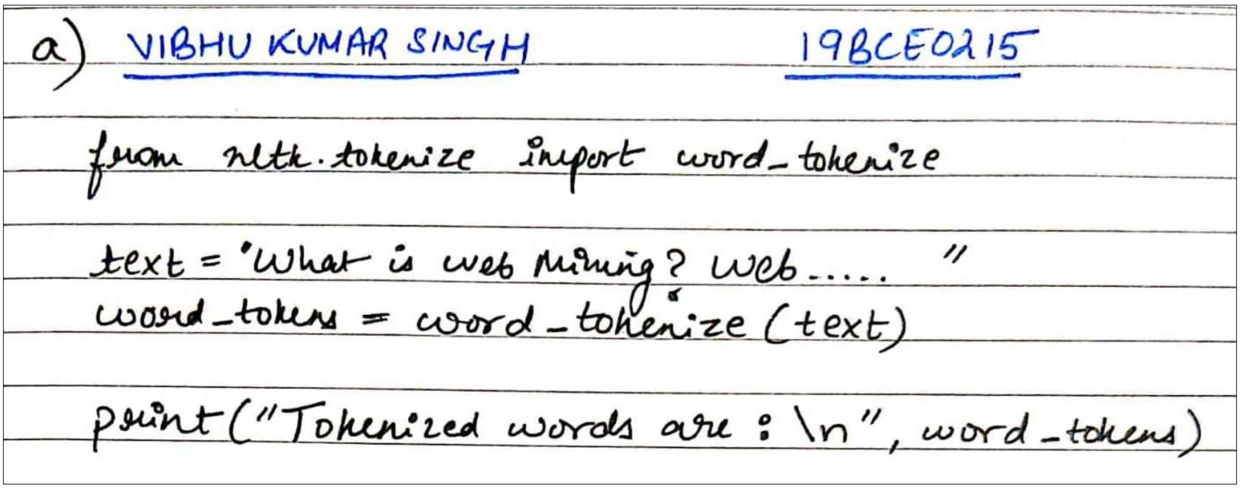
c) remove stop words & punctuation and list the words.

Note: Take the input as “*What is Web Mining? Web Mining is the process of ‘’Data Mining”* techniques, *and extract information from Web documents and services. The main purpose of web mining is discovering useful information from the World-Wide Web and it’s usage patterns.”*

Ans 1.

a) Word

HANDWRITTEN CODE:



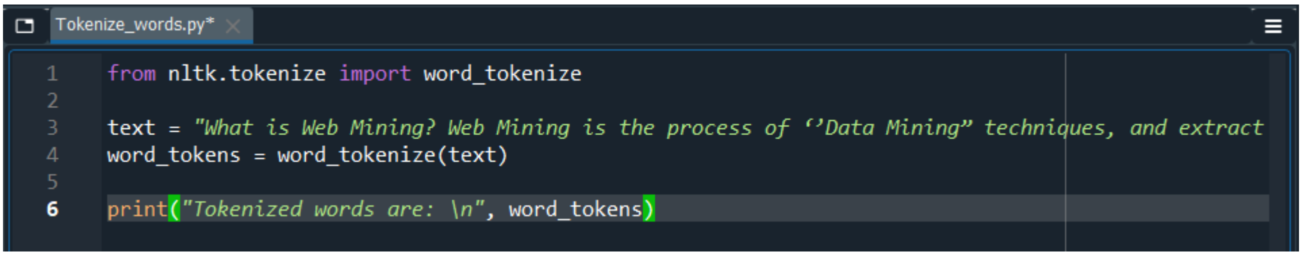
a) VIBHU KUMAR SINGH 19BCE0215

```
from nltk.tokenize import word_tokenize

text = 'What is web Mining? web.....  "
word_tokens = word_tokenize (text)

print("Tokenized words are : \n", word_tokens)
```

CODE:

```
from nltk.tokenize import word_tokenize

text = "What is Web Mining? Web Mining is the process of ‘’Data Mining” techniques, and extract information from Web documents and services. The main purpose of web mining is discovering useful information from the World-Wide Web and it’s usage patterns"

word_tokens = word_tokenize(text)

print(“Tokenized words are:\n”, word_tokens)
```

CODE SCREENSHOT:

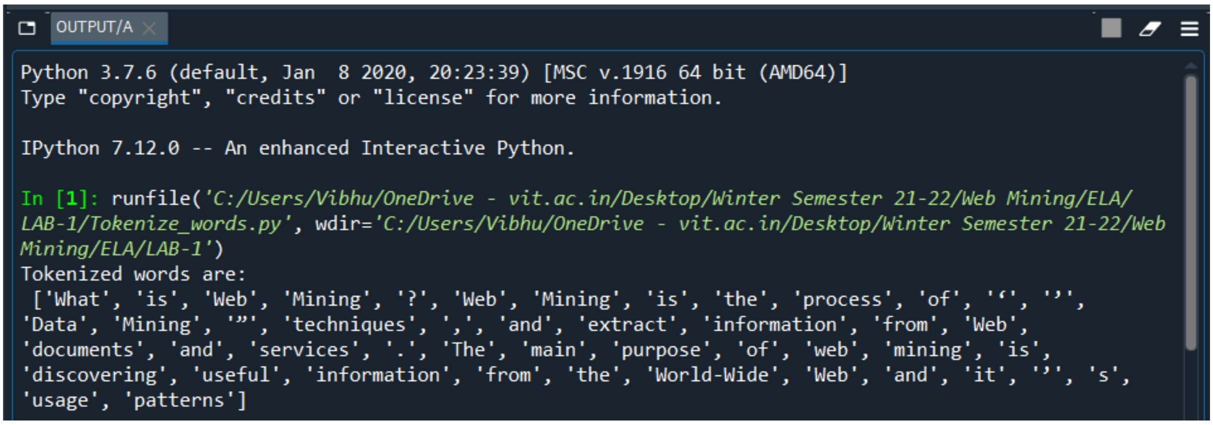


```
from nltk.tokenize import word_tokenize

text = "What is Web Mining? Web Mining is the process of ‘’Data Mining” techniques, and extract
word_tokens = word_tokenize(text)

print("Tokenized words are: \n", word_tokens)
```

OUTPUT:

```
Tokenized words are:
 ['What', 'is', 'Web', 'Mining', '?', 'Web', 'Mining', 'is', 'the', 'process', 'of', '‘', '’', 'Data', 'Mining',
'”', 'techniques', ',', 'and', 'extract', 'information', 'from', 'Web', 'documents', 'and', 'services', '.',
'The', 'main', 'purpose', 'of', 'web', 'mining', 'is', 'discovering', 'useful', 'information', 'from',
'the', 'World-Wide', 'Web', 'and', 'it', '’', 's', 'usage', 'patterns']
```

OUTPUT SCREENSHOT:

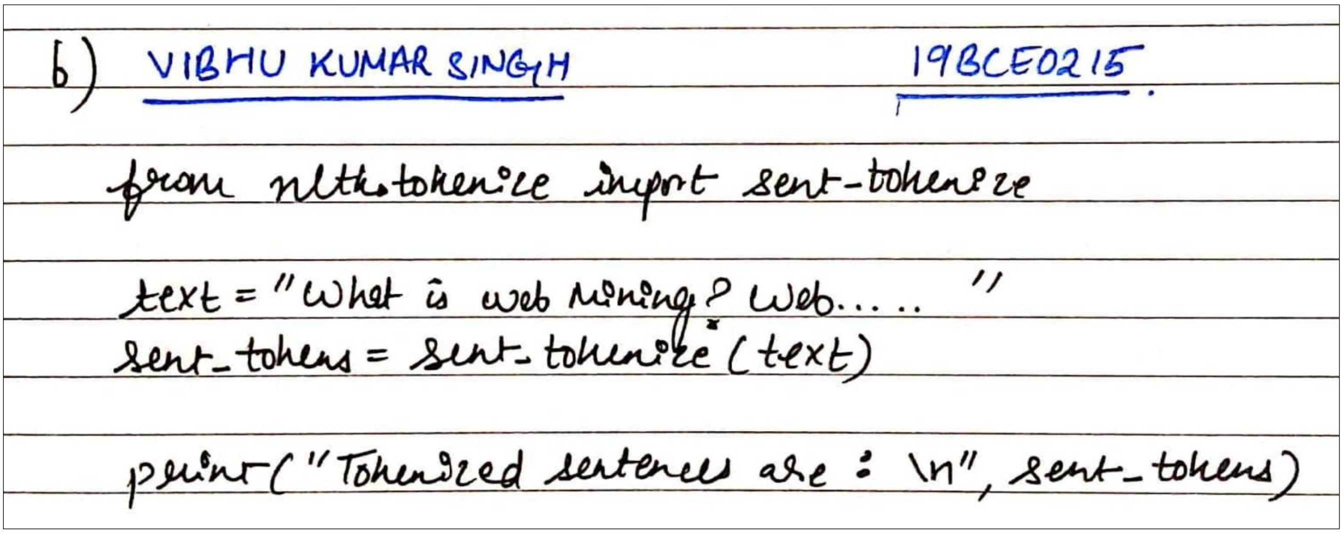


```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.12.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/Vibhu/OneDrive - vit.ac.in/Desktop/Winter Semester 21-22/Web Mining/ELA/
LAB-1/Tokenize_words.py', wdir='C:/Users/Vibhu/OneDrive - vit.ac.in/Desktop/Winter Semester 21-22/Web
Mining/ELA/LAB-1')
Tokenized words are:
 ['What', 'is', 'Web', 'Mining', '?', 'Web', 'Mining', 'is', 'the', 'process', 'of', '‘', '’',
'Data', 'Mining', '”', 'techniques', ',', 'and', 'extract', 'information', 'from', 'Web',
'documents', 'and', 'services', '.', 'The', 'main', 'purpose', 'of', 'web', 'mining', 'is',
'discovering', 'useful', 'information', 'from', 'the', 'World-Wide', 'Web', 'and', 'it', '’', 's',
'usage', 'patterns']
```

- -

b) Sentence

HANDWRITTEN CODE:



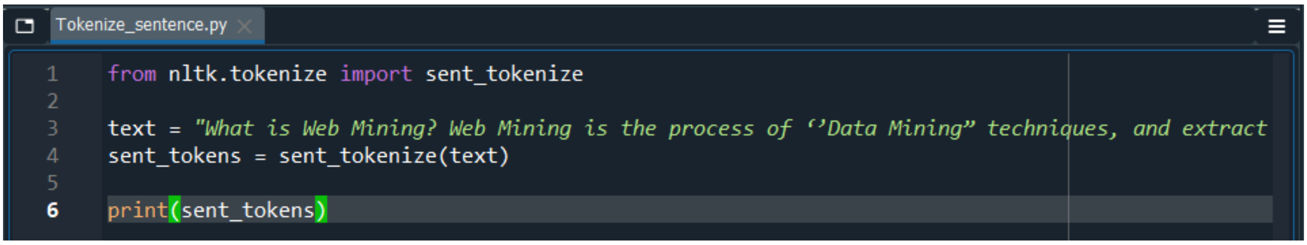
b) VIBHU KUMAR SINGH 19BCE0215

```
from nltk.tokenize import sent-tokenize

text = "What is web Mining? Web....  "
sent_tokens = sent_tokenize(text)

print("Tokenized sentences are : \n", sent_tokens)
```

CODE:

```
from nltk.tokenize import sent_tokenize

text = "What is Web Mining? Web Mining is the process of ‘’Data Mining” techniques, and extract information from Web documents and services. The main purpose of web mining is discovering useful information from the World-Wide Web and it’s usage patterns"

sent_tokens = sent_tokenize(text)
print(sent_tokens)
```

CODE SCREENSHOT:

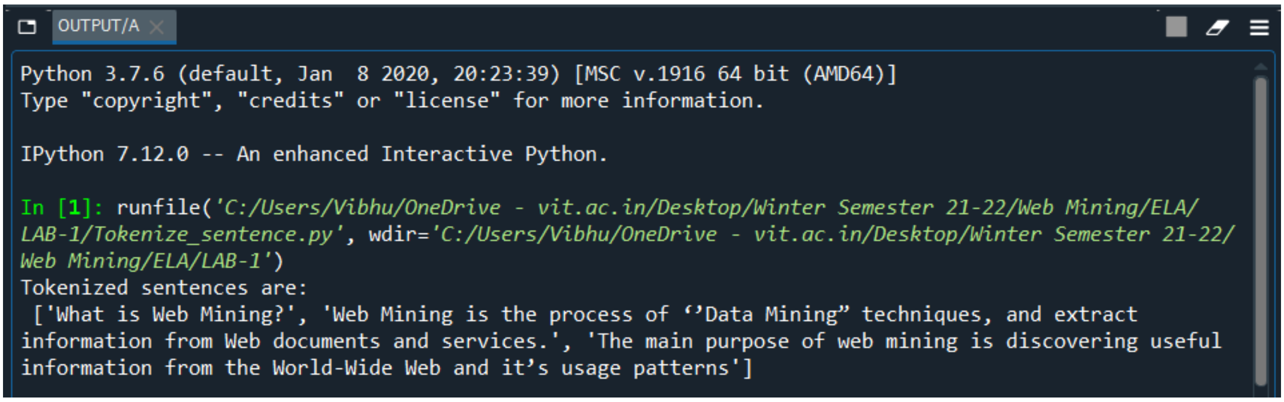


```
from nltk.tokenize import sent_tokenize

text = "What is Web Mining? Web Mining is the process of ‘’Data Mining” techniques, and extract
sent_tokens = sent_tokenize(text)

print(sent_tokens)
```

OUTPUT:

Tokenized sentences are:
 ['What is Web Mining?', 'Web Mining is the process of ‘’Data Mining” techniques, and extract information from Web documents and services.', 'The main purpose of web mining is discovering useful information from the World-Wide Web and it’s usage patterns’]

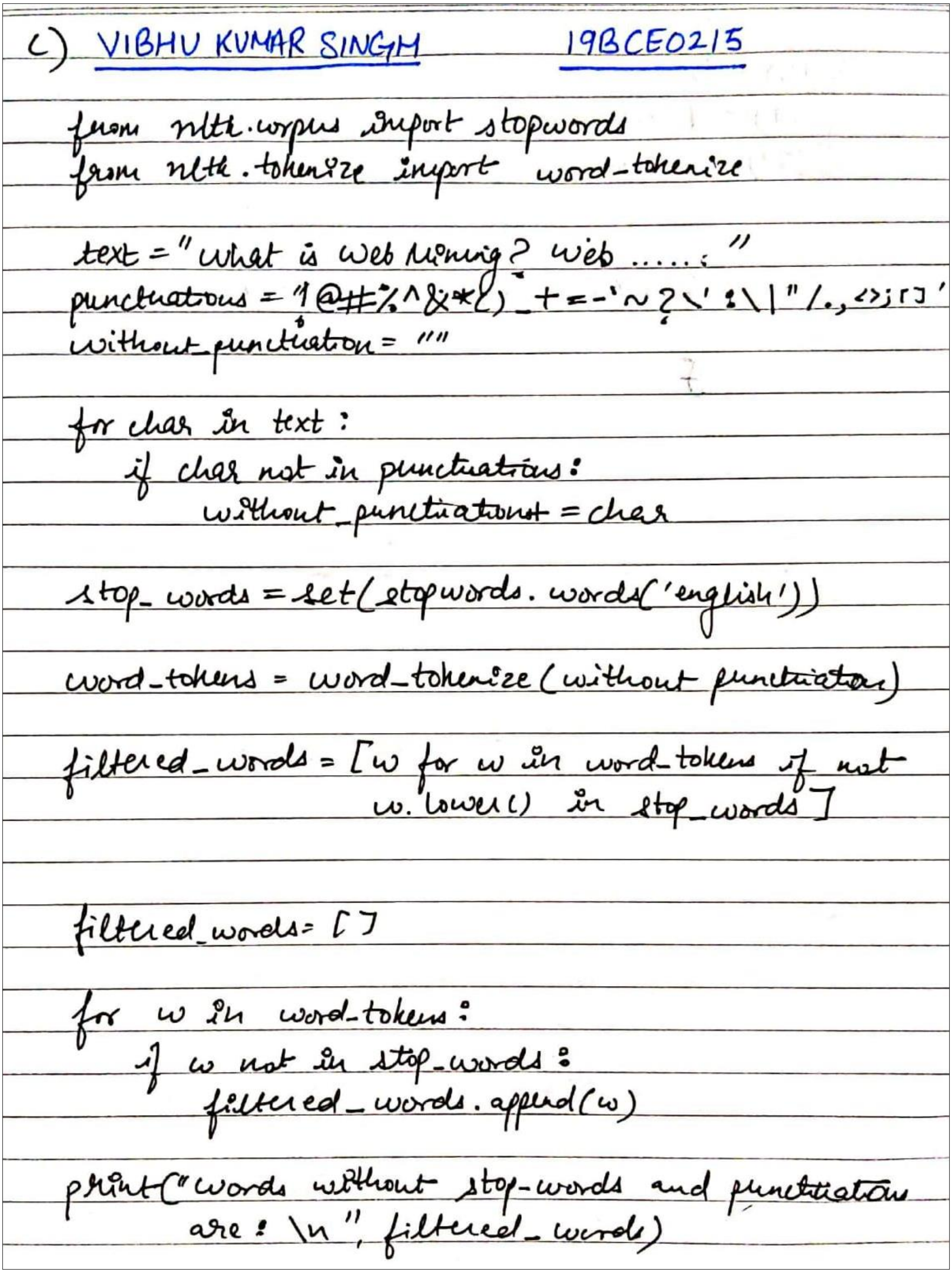
OUTPUT SCREENSHOT:



```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.12.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/Vibhu/OneDrive - vit.ac.in/Desktop/Winter Semester 21-22/Web Mining/ELA/
LAB-1/Tokenize_sentence.py', wdir='C:/Users/Vibhu/OneDrive - vit.ac.in/Desktop/Winter Semester 21-22/
Web Mining/ELA/LAB-1')
Tokenized sentences are:
 ['What is Web Mining?', 'Web Mining is the process of ‘’Data Mining” techniques, and extract
information from Web documents and services.', 'The main purpose of web mining is discovering useful
information from the World-Wide Web and it’s usage patterns']
```

c) Remove stop words & punctuation and list the words

HANDWRITTEN CODE:



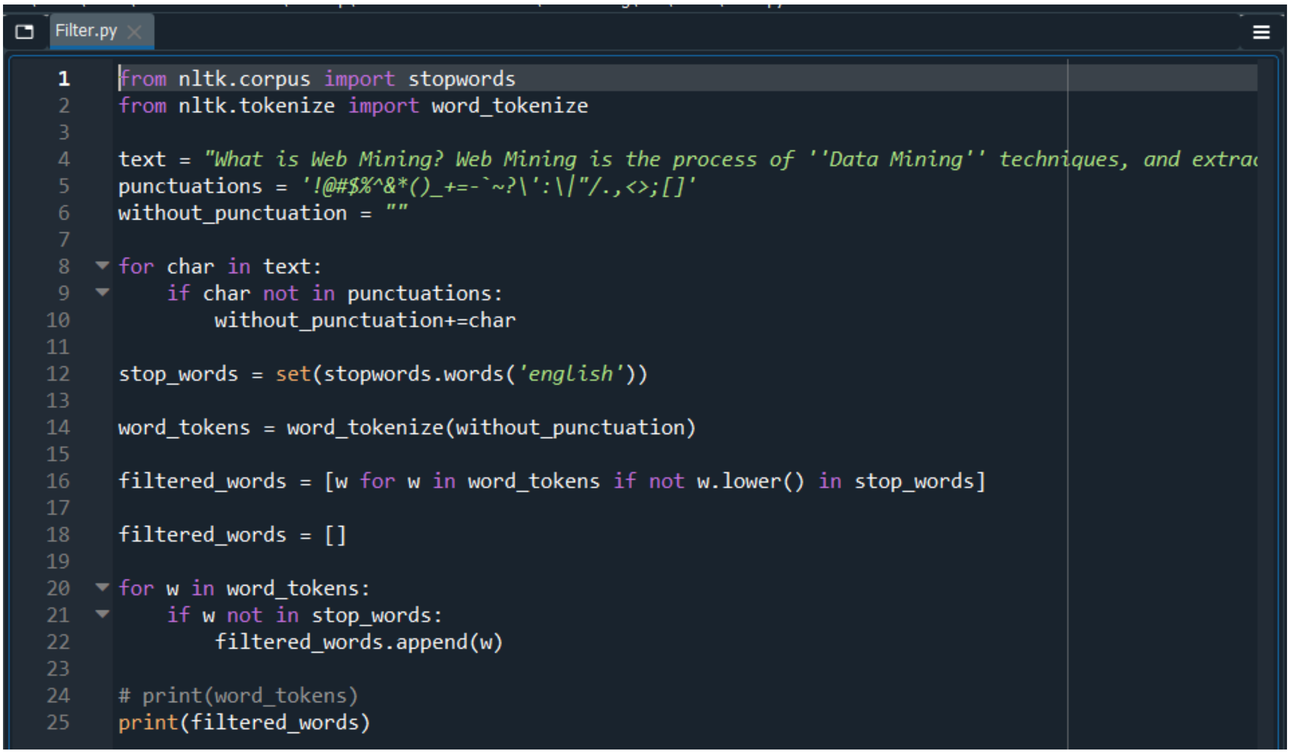
c) VIBHU KUMAR SINGH 19BCE0215

```
from nltk.corpus import stopwords
from nltk.tokenize import word-tokenize

text ="what is Web Mining? web .....: "
punctuatons = '!@#%^&*()_+=-'~?\' :\|"/.,<>;[]'
without_punctuaton= ""

for char in text :
    if char not in punctuations:
        without_punctuation+=char

stop_words =set(stopwords.words('english'))

word_tokens = word_tokenize(without punctuation)

filtered_words = [w for w in word-tokens if not
                  w.lower() in stop_words ]


filtered_words= [ ]

for w in word-tokens:
    if w not in stop_words:
        filtered_words.append(w)

print("words without stop-words and punctuation
       are: \n", filtered_words)
```

CODE:

```
from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize

text = "What is Web Mining? Web Mining is the process of ''Data Mining'' techniques,
and extract information from Web documents and services. The main purpose of web
mining is discovering useful information from the World-Wide Web and it's usage
patterns"

punctuations = '!@#$%^&*()_+=-`~?\':\|"/.,<>;[]'
without_punctuation = ""

for char in text:
    if char not in punctuations:
        without_punctuation+=char

stop_words = set(stopwords.words('english'))

word_tokens = word_tokenize(without_punctuation)

filtered_words = [w for w in word_tokens if not w.lower() in stop_words]

filtered_words = []

for w in word_tokens:
    if w not in stop_words:
        filtered_words.append(w)

print(filtered_words)
```

CODE SCREENSHOT:

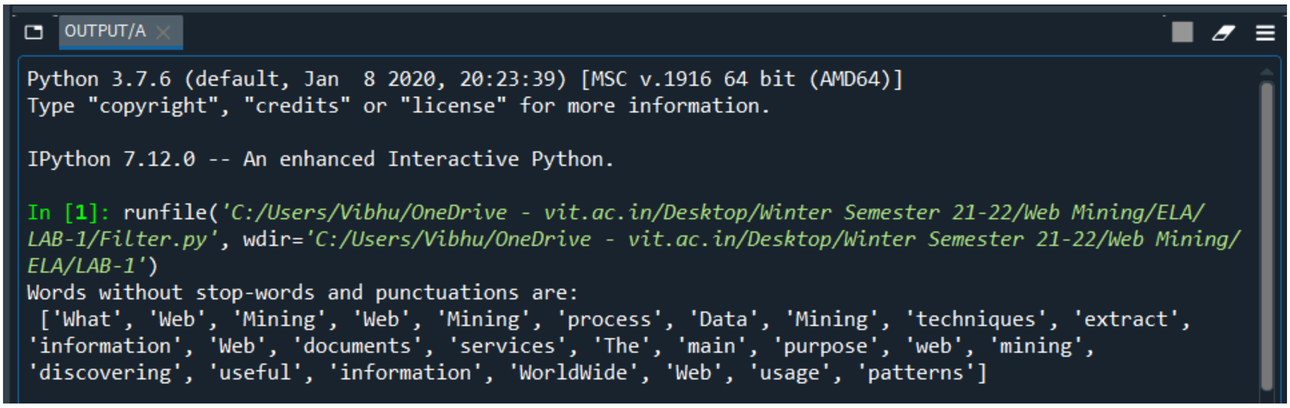


```
from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize

text = "What is Web Mining? Web Mining is the process of ''Data Mining'' techniques, and extrac
punctuations = '!@#$%^&*()_+=-`~?\':\|"/.,<>;[]'
without_punctuation = ""

for char in text:
    if char not in punctuations:
        without_punctuation+=char

stop_words = set(stopwords.words('english'))

word_tokens = word_tokenize(without_punctuation)

filtered_words = [w for w in word_tokens if not w.lower() in stop_words]

filtered_words = []

for w in word_tokens:
    if w not in stop_words:
        filtered_words.append(w)

# print(word_tokens)
print(filtered_words)
```

OUTPUT:

Words without stop-words and punctuations are:
 ['What', 'Web', 'Mining', 'Web', 'Mining', 'process', 'Data', 'Mining', 'techniques', 'extract', 'information', 'Web', 'documents', 'services', 'The', 'main', 'purpose', 'web', 'mining', 'discovering', 'useful', 'information', 'WorldWide', 'Web', 'usage', 'patterns']

OUTPUT SCREENSHOT:



```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.12.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/Vibhu/OneDrive - vit.ac.in/Desktop/Winter Semester 21-22/Web Mining/ELA/
LAB-1/Filter.py', wdir='C:/Users/Vibhu/OneDrive - vit.ac.in/Desktop/Winter Semester 21-22/Web Mining/
ELA/LAB-1')
Words without stop-words and punctuations are:
 ['What', 'Web', 'Mining', 'Web', 'Mining', 'process', 'Data', 'Mining', 'techniques', 'extract',
'information', 'Web', 'documents', 'services', 'The', 'main', 'purpose', 'web', 'mining',
'discovering', 'useful', 'information', 'WorldWide', 'Web', 'usage', 'patterns']
```