Web Mining (CSE3024)

Lab Assignment 5

Name: **Kritika Mishra**

Registration Number: **16BCI0041**

Slot: L15+L16

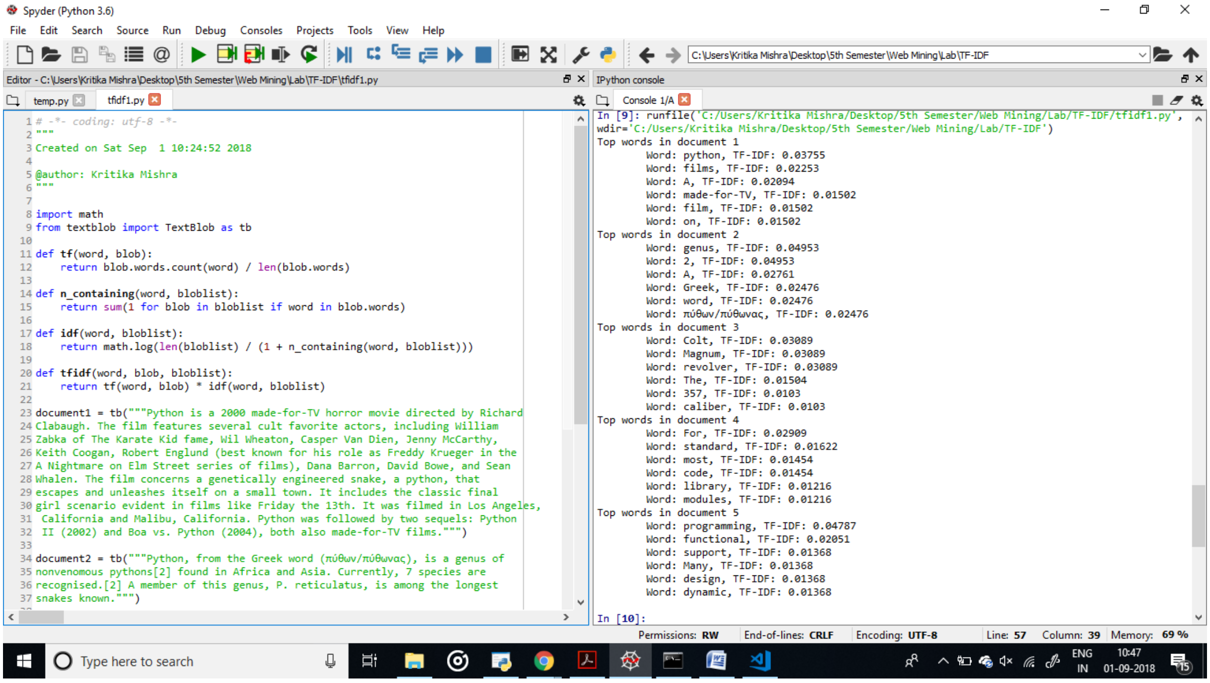
Date: 1st September 2018

Question: **Write a python program to find the important words from the text using TF-IDF. Use minimum of 5 documents with the real text source from a web page of some relevance.**

Code:

```
# -*- coding: utf-8 -*-
"""
Created on Sat Sep  1 10:24:52 2018

@author: Kritika Mishra
"""


import math
from textblob import TextBlob as tb

def tf(word, blob):
    return blob.words.count(word) / len(blob.words)

def n_containing(word, bloblist):
    return sum(1 for blob in bloblist if word in blob.words)

def idf(word, bloblist):
    return math.log(len(bloblist) / (1 + n_containing(word, 
bloblist)))

def tfidf(word, blob, bloblist):
    return tf(word, blob) * idf(word, bloblist)

document1 = tb("""Python is a 2000 made-for-TV horror movie directed
by Richard Clabaugh. The film features several cult favorite actors,
including William Zabka of The Karate Kid fame, Wil Wheaton, Casper
Van Dien, Jenny McCarthy, Keith Coogan, Robert Englund (best known
for his role as Freddy Krueger in the A Nightmare on Elm Street
series of films), Dana Barron, David Bowe, and Sean Whalen. The film
concerns a genetically engineered snake, a python, that escapes and
unleashes itself on a small town. It includes the classic final girl
scenario evident in films like Friday the 13th. It was filmed in Los
Angeles, California and Malibu, California. Python was followed by
two sequels: Python  II (2002) and Boa vs. Python (2004), both also
made-for-TV films.""")

document2 = tb("""Python, from the Greek word (πύθων/πύθωνας), is a
genus of nonvenomous pythons[2] found in Africa and Asia. Currently,
7 species are recognised.[2] A member of this genus, P. reticulatus,
is among the longest snakes known.""")

document3 = tb("""The Colt Python is a .357 Magnum caliber revolver
formerly manufactured by Colt's Manufacturing Company of Hartford,
Connecticut. It is sometimes referred to as a "Combat Magnum".[1] It
was first introduced in 1955, the same year as Smith &amp; Wesson's
M29 .44 Magnum. The now discontinued Colt Python targeted the
premium revolver market segment. Some firearm collectors and writers
such as Jeff Cooper, Ian V. Hogg, Chuck Hawks, Leroy Thompson, Renee
Smeets and Martin Dougherty have described the Python as the finest
production revolver ever made.""")

document4=tb(""" Python's large standard library, commonly cited as
one of its greatest strengths,[91] provides tools suited to many
tasks. For Internet-facing applications, many standard formats and
protocols such as MIME and HTTP are supported. It includes modules
for creating graphical user interfaces, connecting to relational
databases, generating pseudorandom numbers, arithmetic with
arbitrary precision decimals,[92] manipulating regular expressions,
and unit testing. Some parts of the standard library are covered by
specifications (for example, the Web Server Gateway Interface (WSGI)
implementation wsgiref follows PEP 333[93]), but most modules are
not. They are specified by their code, internal documentation, and
test suites (if supplied). However, because most of the standard
library is cross-platform Python code, only a few modules need
altering or rewriting for variant implementations.""")

document5=tb(""" Python is a multi-paradigm programming language.
Object-oriented programming and structured programming are fully
supported, and many of its features support functional programming
and aspect-oriented programming (including by metaprogramming[42]
and metaobjects (magic methods)).[43] Many other paradigms are
supported via extensions, including design by contract[44][45] and
logic programming.[46] Python uses dynamic typing, and a combination
of reference counting and a cycle-detecting garbage collector for
memory management. It also features dynamic name resolution (late
binding), which binds method and variable names during program
execution. Python's design offers some support for functional
programming in the Lisp tradition. It has filter(), map(), and
reduce() functions; list comprehensions, dictionaries, and sets; and
generator expressions.[47] The standard library has two modules
(itertools and functools) that implement functional tools borrowed
from Haskell and Standard ML.""")

bloblist = [document1, document2, document3,document4, document5]
for i, blob in enumerate(bloblist):
    print("Top words in document {}".format(i + 1))
    scores = {word: tfidf(word, blob, bloblist) for word in
blob.words}
    sorted_words = sorted(scores.items(), key=lambda x: x[1],
reverse=True)
    for word, score in sorted_words[:5]:
        print("\tWord: {}, TF-IDF: {}".format(word, round(score,
5)))
```

Output:


Spyder (Python 3.6)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\Kritika Mishra\Desktop\5th Semester\Web Mining\Lab\TF-IDF
Editor - C:\Users\Kritika Mishra\Desktop\5th Semester\Web Mining\Lab\TF-IDF\tfidf1.py
temp.py
tfidf1.py
IPython console
Console 1/A
Type here to search
ENG
IN
10:47
01-09-2018
15

```python
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Created on Sat Sep  1 10:24:52 2018

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A Nightmare on Elm Street series of films), Dana Barron, David Bowe, and Sean
Whalen. The film concerns a genetically engineered snake, a python, that
escapes and unleashes itself on a small town. It includes the classic final
girl scenario evident in films like Friday the 13th. It was filmed in Los Angeles,
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```

```
In [9]: runfile('C:/Users/Kritika Mishra/Desktop/5th Semester/Web Mining/Lab/TF-IDF/tfidf1.py',
wdir='C:/Users/Kritika Mishra/Desktop/5th Semester/Web Mining/Lab/TF-IDF')
Top words in document 1
        Word: python, TF-IDF: 0.03755
        Word: films, TF-IDF: 0.02253
        Word: A, TF-IDF: 0.02094
        Word: made-for-TV, TF-IDF: 0.01502
        Word: film, TF-IDF: 0.01502
        Word: on, TF-IDF: 0.01502
Top words in document 2
        Word: genus, TF-IDF: 0.04953
        Word: 2, TF-IDF: 0.04953
        Word: A, TF-IDF: 0.02761
        Word: Greek, TF-IDF: 0.02476
        Word: word, TF-IDF: 0.02476
        Word: πύθων/πύθωνας, TF-IDF: 0.02476
Top words in document 3
        Word: Colt, TF-IDF: 0.03089
        Word: Magnum, TF-IDF: 0.03089
        Word: revolver, TF-IDF: 0.03089
        Word: The, TF-IDF: 0.01504
        Word: 357, TF-IDF: 0.0103
        Word: caliber, TF-IDF: 0.0103
Top words in document 4
        Word: For, TF-IDF: 0.02909
        Word: standard, TF-IDF: 0.01622
        Word: most, TF-IDF: 0.01454
        Word: code, TF-IDF: 0.01454
        Word: library, TF-IDF: 0.01216
        Word: modules, TF-IDF: 0.01216
Top words in document 5
        Word: programming, TF-IDF: 0.04787
        Word: functional, TF-IDF: 0.02051
        Word: support, TF-IDF: 0.01368
        Word: Many, TF-IDF: 0.01368
        Word: design, TF-IDF: 0.01368
        Word: dynamic, TF-IDF: 0.01368

In [10]:
```

Permissions: RW   End-of-lines: CRLF   Encoding: UTF-8   Line: 57   Column: 39   Memory: 69 %