AI Assignment-5

Pankaj Kumar
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- First, I created NLI.py to extract the facts and put them in a file that the prolog software may then use.
- The prologue programme then reads the information from the text file saved by the preceding programme.
- The additional program provides suggested recommendations.

Interface Program

- I have extracted the facts from the input sentences using Python programming and Natural language processing technologies.
- Preprocessing procedures.
    - Reducing the number of words
    - Eliminating punctuation
    - Lemmatization of words
    - Elimination of stop words

  The retrieved keywords are kept in the facts.txt file.
- The following structure is followed
    - yes('keyword') ○ no('keyword')

Source Code

```
import nltk
import warnings
import numpy as np
import pandas as pd
from nltk.corpus import *
import sklearn
from nltk.tokenize import *
import string
from nltk.stem import WordNetLemmatizer
from nltk.tokenize import word_tokenize
from nltk.corpus import stopwords
```

```
class NLI:
   wordlist = []
   inplist = []
   stopWords = set(stopwords.words('english'))
   wordnet_lemmatizer = WordNetLemmatizer()

   def __init__(self):
       nltk.download('omw-1.4')
       nltk.download('stopwords')
       nltk.download('punkt')
       nltk.download('wordnet')
       warnings.filterwarnings('ignore')
       NLI.wordlist = ['python', 'programming', 'ml',
'database', 'advanceprogramming',
                       'probability', 'discreetmaths',
'cn', 'electronics', 'cryptography']

   def make_list(self):

       print("What have you done till now and interests
?\n")
       inp1 = input()
       text = inp1.lower()
       for sgn in string.punctuation:
           text = text.replace(sgn, ' ')
       text = NLI.wordnet_lemmatizer.lemmatize(text)

       tok1 = word_tokenize(text)
```

```
        for wod in tok1:
            if wod not in NLI.stopWords:
                NLI.inplist.append(wod)

        f = open("facts.txt", 'w')

        for key in NLI.wordlist:
            if key in NLI.inplist:
                str = "yes('"+key+").\n"
                f.write(str)
            else:
                str = "no('"+key+").\n"
                f.write(str)

        f.close()
        self.ai()
        self.DE()
        self.IS()
        self.mc()

    def ai(self):
        file = open("facts.txt", 'a')
        file.write("ai(")
        choice = input(
            "Are you interested in Artificial
Intelligence? Enter yes/no ")
        file.write(choice)
        file.write(").\n")
```

```
        file.close

    def mc(self):
        file = open("facts.txt", 'a')
        file.write("mc(")
        choice = input("Are you interested in Mobile
Computing? Enter yes/no ")
        file.write(choice)
        file.write(").\n")
        file.close()

    def IS(self):
        file = open("facts.txt", 'a')
        file.write("is(")
        choice = input(
            "Are you interested in Information Security?
Enter yes/no ")
        file.write(choice)
        file.write(").\n")
        file.close()

    def DE(self):
        file = open("facts.txt", 'a')
        file.write("de(")
        choice = input("Are you interested in Data
Engineering? Enter yes/no ")
        file.write(choice)
        file.write(").\n")
```

```
        file.close()



if __name__ == "__main__":
    nlp = NLI()
    nlp.make_list()
```

Input Given

```
pankaj@Pankajs-MacBook-Air Desktop % cd "/Users/pankaj/Desktop/" && python NLI.py
[nltk_data] Downloading package omw-1.4 to /Users/pankaj/nltk_data...
[nltk_data]   Package omw-1.4 is already up-to-date!
[nltk_data] Downloading package stopwords to
[nltk_data]     /Users/pankaj/nltk_data...
[nltk_data]   Package stopwords is already up-to-date!
[nltk_data] Downloading package punkt to /Users/pankaj/nltk_data...
[nltk_data]   Package punkt is already up-to-date!
[nltk_data] Downloading package wordnet to /Users/pankaj/nltk_data...
[nltk_data]   Package wordnet is already up-to-date!
What have you done till now and interests ?

I am interested in ai and have some programming experience. I also know python.
Are you interested in Artificial Intelligence?yes
Are you interested in Data Engineeringno
Are you interested in Information Security?no
Are you interested in Mobile Computing?no
```

Facts Generated

```
yes('python).
yes('programming).
no('ml).
no('database).
no('advanceprogramming).
no('probability).
no('discreetmaths).
no('cn).
no('electronics).
no('cryptography).
ai(yes).
de(no).
is(no).
mc(no).
```