Assignment 4

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Description

Python code creates a fact which stores the name of the user. Named Entity Recognition is implemented for this. Initially, the user is asked to introduce himself/herself. Then, sentence tokenisation followed by word tokenisation, POS tagging, creating named entity chunks and to extract the chink with PERSON label. Finally, the person's name is extracted and saved as a fact in a text file.

Prolog code runs as before. Now, in the final result of career advise is given with using the name of the user.

Code (python)

```
import nltk

from nltk.tokenize import word_tokenize

from nltk.tokenize import sent_tokenize

from nltk.tag import pos_tag


response = input("Hi, Please introduce yourself: ")

sentences = sent_tokenize(response)

token_sentences = [word_tokenize(sentence) for sentence in sentences]

tag_sentences = [pos_tag(sentence) for sentence in token_sentences]

name=''

for sentence in tag_sentences:
   for chunk in nltk.ne_chunk(sentence):
      if type(chunk)==nltk.tree.Tree and chunk.label()=='PERSON':
         name = chunk[0][0]
         break


f = open('C:/Users/Admin/Desktop/Sem1/AI/Assignment4_graded/facts.txt', 'w')

if name == '':
   f.write('name_person(user).')

else:
```

```
    f.write('name_person('+name.lower()+').')
f.close()
```

Code (Prolog)

```
/* Run the program by calling careeradvisory. */
careeradvisory :-

consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment4_graded/facts.txt'),retractall(response(_,_))
, option(Career),!, printmsg(Career), nl, fail.
careeradvisory :-
        write('Thanks for coming to my career advisory system. Happy to serve you. :)'), nl.

/* To check if required values, i.e, either 0 or 1, are inserted by the user. */
read_response(Response) :-
   read(TmpResponse),(TmpResponse = 0; TmpResponse = 1),!, Response = TmpResponse ;
(write('Write either 1 or 0.'), nl, read_response(Response)).

/* Various queries */
query(1,A1):- write('What type of projects you have done: write 1 for Learning based 0 for research
based'),nl,read_response(A1),assert(response(1,A1)).
query(2,A2):- write('Did you do TAship, if yes, did youenjoy doing it? 1 for yes, 0 for no'),nl,
read_response(A2),assert(response(2,A2)).
query(3,A3):- write('Do you have any novel idea that can transform present technology? 1 for yes, 0
for no'),nl, read_response(A3),assert(response(3,A3)).
query(4,A4):- write('Do you have immediate monetary responsibility for your family/dependents?
write 1 if yes, 0 for no'),nl, read_response(A4), assert(response(4,A4)).
query(5,A5):- write('Are you interested in academia? 1 for yes, 0 for no.'),nl,read_response(A5),
assert(response(5,A5)).
query(6,A6):- write('Do you have risk taking capability and likes taking challenges in life? 1 for yes, 0
for no'),nl,read_response(A6),assert(response(6,A6)).
query(7,A7):- write('Do you have any published paper/journal? 1 for yes, 0 for
no'),nl,read_response(A7), assert(response(7,A7)).
query(8,A8):- write('Do you have thirst for knowledge and likes to read books on a particular topic? 1
for yes, 0 for no'),nl,read_response(A8), assert(response(8,A8)).
```

```
query(9,A9):- write('Do you like to have a structured life. 1 for yes, 0 for no'),nl,read_response(A9), assert(response(9,A9)).

query(10,A10):- write('Do you like to try out different things and have creative thinking? 1 for yes, 0 for no'),nl,read_response(A10), assert(response(10,A10)).

query(11,A11):- write('Do you have seeding money? 1 for yes, 0 for no'),nl,read_response(A11), assert(response(11,A11)).

query(12,A12):- write('Are you the person who would love to promote learning? 1 for yes, 0 for no'),nl,read_response(A12), assert(response(12,A12)).

query(13,A13):- write('Are you a team player? 1 for yes, 0 for no'),nl,read_response(A13), assert(response(13,A13)).


/* checking if query already asked before. */

check(Num,Res):- response(Num,Res),!.

check(Num,Res):- query(Num,Res).


/* Checking various options */

option(startup) :-

  (

   ( query(1,A1), A1=0, query(3,A3), A3=1, query(6,A6), A6=1, query(10,A10), A10=1, query(11,A11), A11=1 );

          ( response(1,A1), A1=0, check(3,A3), A3=1, check(6,A6), A6=1, check(10,A10), A10=1 );

          ( response(1,A1), A1=0, check(3,A3), A3=1, check(6,A6), A6=1, check(11,A11), A11=1);

          ( response(1,A1), A1=0, check(3,A3), A3=1, check(10,A10), A10=1,check(11,A11), A11=1 );

          ( response(1,A1), A1=0, check(6,A6), A6=1, check(10,A10), A10=1, check(11,A11), A11=1 );

          ( check(3,A3), A3=1, check(6,A6), A6=1, check(10,A10), A10=1, check(11,A11), A11=1 )

  ).


option(teaching) :-

  (

   ( check(12,A12), A12=1, check(4,A4), A4=1, check(5,A5), A5=1, check(9,A9), A9=1, check(2,A2), A2=1 );

          ( check(12,A12), A12=1, check(4,A4), A4=1, check(5,A5), A5=1, check(9,A9), A9=1);

          ( check(12,A12), A12=1, check(4,A4), A4=1, check(5,A5), A5=1, check(2,A2), A2=1);
```

```
        ( check(12,A12), A12=1, check(4,A4), A4=1, check(9,A9), A9=1, check(2,A2), A2=1          );
        ( check(12,A12), A12=1, check(5,A5), A5=1, check(9,A9), A9=1, check(2,A2), A2=1 );
        ( check(4,A4), A4=1, check(5,A5), A5=1, check(9,A9), A9=1, check(2,A2), A2=1 )
 ).

option(phd) :-
 (
   ( response(1,A1), A1=0, check(5,A5),A5=1, check(7,A7), A7=1, check(8,A8), A8=1, check(4,A4),
A4=0 );
        ( response(1,A1), A1=0, check(5,A5), A5=1, check(7,A7), A7=1, check(8,A8), A8=1 );
        ( response(1,A1), A1=0, check(5,A5), A5=1, check(7,A7), A7=1, check(4,A4), A4=0 );
        ( response(1,A1), A1=0, check(5,A5), A5=1, check(8,A8), A8=1, check(4,A4), A4=0 );
        ( response(1,A1), A1=0, check(7,A7), A7=1, check(8,A8), A8=1, check(4,A4), A4=0 );
        ( check(5,A5), A5=1, check(7,A7), A7=1, check(8,A8), A8=1, check(4,A4), A4=0 )
 ).

option(job) :-
 (
   ( response(1,A1),A1=1, check(4,A4),A4=1, check(5,A5),A5=0, check(9,A9),A9=1,
check(13,A13),A13=1 );
        ( response(1,A1), A1=1, check(4,A4), A4=1, check(5,A5), A5=0, check(9,A9), A9=1);
   ( response(1,A1), A1=1, check(4,A4), A4=1, check(5,A5), A5=0, check(13,A13), A13=1 );
        ( response(1,A1), A1=1, check(4,A4), A4=1, check(9,A9), A9=1, check(13,A13), A13=1 );
        ( response(1,A1), A1=1, check(5,A5), A5=0, check(9,A9), A9=1, check(13,A13), A13=1 );
        ( check(4,A4), A4=1, check(5,A5), A5=0, check(9,A9), A9=1, check(13,A13), A13=1 )
 ).

option(notfound).

/* Display career choice */
printmsg(job) :-
```

name_person(X),write(X),write(', you are suitable for corporate job on the basis of your responses.'), nl.

printmsg(phd) :-

name_person(X),write(X),write(', you are suitable for PhD on the basis of your responses.'), nl.

printmsg('startup') :-

name_person(X),write(X),write(', you are suitable for startup on the basis of your responses.'), nl.

printmsg('teaching') :-

name_person(X),write(X),write(', you are suitable for teaching on the basis of your responses.'), nl.

printmsg('notfound'):-

name_person(X),write(X),write(', we could not find a career option for you on the basis of your responses.'), nl.

Output

```
Hi, Please introduce yourself: My name is Shradha Agarwal. I live in Delhi. I am
 a Mtech student at IIITD.
>>>
```

```
?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment4_graded/career_advisory.pl').
true.

?- careeradvisory.
What type of projects you have done: write 1 for Learning based 0 for research based
|: 1.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: 0.
Are you the person who would love to promote learning? 1 for yes, 0 for no
|: 1.
Do you have immediate monetary responsibility for your family/dependents? write 1 if yes, 0 for no
|: 1.
Are you interested in academia? 1 for yes, 0 for no.
|: 1.
Do you like to have a structured life. 1 for yes, 0 for no
|: 1.
Did you do TAship, if yes, did youenjoy doing it? 1 for yes, 0 for no
|: 1.
shradha, you are suitable for teaching on the basis of your responses.

false.
```