Artificial Intelligence

Assignment-5

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```
[3] !pip install pyswip

Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: pyswip in /usr/local/lib/python3.8/dist-packages (0.2.10)

[4] !apt install swi-prolog

Reading package lists... Done
Building dependency tree
Reading state information... Done
swi-prolog is already the newest version (7.6.4+dfsg-1build1).
The following package was automatically installed and is no longer required:
  libnvidia-common-460
Use 'apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 7 not upgraded.

import nltk
from nltk.tokenize import word_tokenize
from nltk.stem import PorterStemmer
from pyswip import Prolog

[6] from google.colab import files
uploaded = files.upload()

Choose files  Assignment1.pl
• Assignment1.pl(text/x-perl-script) - 16547 bytes, last modified: 04/12/2022 - 100% done
Saving Assignment1.pl to Assignment1.pl

[8] nltk.download('punkt')
nltk.download('averaged_perceptron_tagger')
nltk.download('wordnet')

[nltk_data] Downloading package punkt to /root/nltk_data...
```

```python
def nli(x):
    x = word_tokenize(x)
    ps = PorterStemmer()
    m = []
    for i in x:
        m.append(ps.stem(i))
    if 'btech' in m:
        return 'btech'
    if 'mtech' in m:
        return 'mtech'
    if 'cse' in m:
        return 'cse'
    if 'csam' in m:
        return 'csam'
    if 'ece' in m:
        return 'ece'
    if 'csss' in m:
        return 'csss'
    if 'csd' in m:
        return 'csd'
    if 'cb' in m:
        return 'cb'
    if (('big' in m) or ('data' in m) or ('mine' in m)) and ('healthcar' in m):
        return 'big_data_mining_in_healthcare'
    if ('healthcar' in m) and (('machin' in m) or ('learn' in m)):
        return 'machine_learning_in_healthcare'
    if ('data' in m) or ('analyst' in m) or ('machin' in m):
        return 'data_analyst/machine_learning'
    if ('secur' in m) or ('privaci' in m):
        return 'security_and_privacy_engineer'
    if ('mobil' in m) or ('applic' in m):
        return 'mobile_application_developer'
    if ('ai' in m) or ('machin' in m):
        return 'in_ai/machine_learning'
    if ('softwar' in m) or ('develop' in m):
        return 'software_developer'
```

```
    if ('mobil' in m) or ('applic' in m):
        return 'mobile_application_developer'
    if ('ai' in m) or ('machin' in m):
        return 'in_ai/machine_learning'
    if ('softwar' in m) or ('develop' in m):
        return 'software_developer'
    if ('higher' in m) or ('studi' in m) or ('math' in m):
        return 'higher_studies_in_maths'
    if ('imag' in m) or ('process' in m):
        return 'image_processing'
    if ('virtual' in m) or ('realiti' in m):
        return 'in_virtual_reality'
    if ('financ' in m) or ('econom' in m):
        return 'finance_and_economics'
    if ('hardwar' in m) or ('profil' in m):
        return 'hardware_profile'
    if ('wireless' in m) or ('network' in m) or ('engin' in m):
        return 'wireless_network_engineer'
```

```
[10] print('-------------------------------------------------------------------------------')
     print('                    Welcome To Elective Advisory System')
     print('-------------------------------------------------------------------------------')
     print('Are you currently persuing B.Tech. or M.Tech.?')
     d = input()
     d = nli(d)
     if d == 'btech':
       print('What is your branch? (CSE,CSAM,CSD,CSSS,ECE)')
       b = input()
       b = nli(b)
     elif d == 'mtech':
       print('What is your branch? (CSE,ECE,CB)')
       b = input()
       b = nli(b)
     else:
       print('No such degree exists')
```

```
[10] ----------------------------------------------------------------------------
                        Welcome To Elective Advisory System
     ----------------------------------------------------------------------------
     Are you currently persuing B.Tech. or M.Tech.?
     btech
     What is your branch? (CSE,CSAM,CSD,CSSS,ECE)
     cse
```

```
[11] f = open("file.pl", 'w')
```

```
     if d == 'btech':
       f.write("allocation(degree({})).\n".format(d))
     if d == 'mtech':
       f.write("allocation(degree({})).\n".format(d))
     if b == 'cse':
       f.write("allocation(branch({})).\n".format(b))
     if b == 'ece':
       f.write("allocation(branch({})).\n".format(b))
     if b == 'csam':
       f.write("allocation(branch({})).\n".format(b))
     if b == 'csss':
       f.write("allocation(branch({})).\n".format(b))
     if b == 'csd':
       f.write("allocation(branch({})).\n".format(b))
     if b == 'cb':
       f.write("allocation(branch({})).\n".format(b))
```

```
[13] if d == 'btech' and b == 'cse':
       print('What Carrer Do You Want To Persue From The Given Choices:- ')
       print('1. Data Analyst/Machine Learning')
       print('2. Security and Privacy Engineer')
       print('3. Mobile Application Developer')
       x = input()
       x = nli(x)
```

```
    print('Do you have a interest in discovering more about genes and its cure in various disesases?')
    x = input()
    f.write("allocation(g({})).\n".format(x))

    print('Are you willing to learn machine learning in order to apply it in healthcare system and improvise it?')
    x = input()
    f.write("allocation(mlba({})).\n".format(x))

    print('Are you interest in studying about network science?')
    x = input()
    f.write("allocation(ns({})).\n".format(x))
    f.close()
```

```
What Carrer Do You Want To Persue From The Given Choices:-
1. Data Analyst/Machine Learning
2. Security and Privacy Engineer
3. Mobile Application Developer
machine
Do you have interest in security and privacy?
no
Do you have interest in computer architechture?
no
Do you have interest in data analysis and machine learning?
yes
Do you have interest in designing, development and evaluation of mobile applications?
yes
```

```
swipl = Prolog()
swipl.consult("Assignment1.pl")
l = list(swipl.query("func(X)"))
print(l)
```

```
[{'X': 'Mobile Computing'}, {'X': 'Data Analytics'}, {'X': 'Data Analytics'}, {'X': 'Image Analysis & Machine Learning'}, {'X': 'none'}]
```