

CSE643: Artificial Intelligence

Sehban Fazili

M Tech CSE: MT21143

### **NL interface for your electives advisory system.**

Steps:

- 1) Downloading swi-prolog and pyswip in Google Colaboratory using the commands:

```
!apt install swi-prolog
```

```
!pip install pyswip
```

- 2) Importing important libraries

```
import nltk
```

```
nltk.download('punkt')
```

```
from nltk.tokenize import word_tokenize
```

```
from nltk.stem import PorterStemmer
```

```
from pyswip import Prolog
```

- 3) Input txt file is generated using the code below:

```
def output(var):
```

```
    if var == "MachineLearning&ArtificialIntelligence":
```

```
        print('AI,ML,DMG,SML,GradAlgo')
```

```
    if var == "GraphicDesigning":
```

```
        print('ComputerArchitecture,ComputerGraphics,GradAlgo')
```

```
    if var == "InformationSecurity":
```

```
        print('EthicalHacking,ProgramAnalysis,GradAlgo')
```

```
    if var == "Networking":
```

```
print('MobileComputing,EmbeddedSystems,Mobiledandcellularnetworksecurity,GradAlgo')
```

```
else:
```

```
    print("We recommend you to explore more about your interests and come back  
again.")
```

```
ps = PorterStemmer()
```

```
f = open("/content/nlinterface.txt", 'w')
```

```
inplist = []
```

```
inp1 = input('Enter branch: ')
```

```
tok1 = word_tokenize(inp1)
```

```
for wod in tok1:
```

```
    stem1 = ps.stem(wod)
```

```
    inplist.append(stem1)
```

```
if "cse" in inplist:
```

```
    f.write("branch(cse).\n")
```

```
inplist = []
```

```
inp2 = input('Enter CGPA: ')
```

```

tok1 = word_tokenize(inp2)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "9" in inplist:
    f.write("cgpa(9.0).\n")
elif "8" in inplist:
    f.write("cgpa(8.0).\n")
elif "7" in inplist:
    f.write("cgpa(7.0).\n")
elif "6" in inplist:
    f.write("cgpa(6.0).\n")
elif "6.5" in inplist:
    f.write("cgpa(6.5).\n")
else:
    f.write("cgpa(7.5).\n")

inplist = []
inp3 = input('Do you have a strong grasp of mathematics and statistics?')
tok1 = word_tokenize(inp3)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("maths(y).\n")

inplist = []
inp4 = input("Do you like programming? ")
tok1 = word_tokenize(inp4)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("programming(y).\n")

inplist = []
inp5 = input('Are you considering a career in ML?')
tok1 = word_tokenize(inp5)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("machine_learning(y).\n")

```

```
inplist = []
inp6 = input('Are you considering a career in AI?')
tok1 = word_tokenize(inp6)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("artificial_intelligence(y).\n")
```

```
inplist = []
inp7 = input('Are you considering a career in Data Mining?')
tok1 = word_tokenize(inp7)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("data_mining(y).\n")
```

```
inplist = []
inp8 = input('Are you considering a career in Networking?')
tok1 = word_tokenize(inp8)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("networking(y).\n")
```

```
inplist = []
inp9 = input('Are you considering a career in Graphic Designing?')
tok1 = word_tokenize(inp9)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("graphic_designing(y).\n")
```

```
inplist = []
inp10 = input('Are you considering a career in Information Security?')
tok1 = word_tokenize(inp10)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("information_security(y).\n")
```

```

inplist = []
inp11 = input('Are you considering to study further?')
tok1 = word_tokenize(inp)
for wod in tok1:
    stem1 = ps.stem(wod)
    inplist.append(stem1)
if "y" in inplist:
    f.write("higher_studies(y).\n")

f.close()

```

- 4) Output is generated using the command given below:

```

swipl = Prolog()
swipl.consult("/content/electiveAdvisory.pl")
electives_suggested = list(swipl.query("generate_electives(Electives)"))
for i in range(len(electives_suggested)):
    var = electives_suggested[i]['Electives'].decode('utf-8')
    output(var)

```

- 5) Outputs:

```

Enter branch: cse
Enter CGPA: 7.5
Do you have a strong grasp of mathematics and statistics?y
Do you like programming? y
Are you considering a career in ML?n
Are you considering a career in AI?n
Are you considering a career in Data Mining?n
Are you considering a career in Networking?n
Are you considering a career in Graphic Designing?n
Are you considering a career in Information Security?y
Are you considering to study further?n

```

```

[37] swipl = Prolog()
swipl.consult("/content/electiveAdvisory.pl")
electives_suggested = list(swipl.query("generate_electives(Electives)"))
for i in range(len(electives_suggested)):
    var = electives_suggested[i]['Electives'].decode('utf-8')
    output(var)

```

EthicalHacking,ProgramAnalysis,GradAlgo  
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```

Enter branch: cse
Enter CGPA: 6.5
Do you have a strong grasp of mathematics and statistics?y
Do you like programming? y
Are you considering a career in ML?n
Are you considering a career in AI?n
Are you considering a career in Data Mining?n
Are you considering a career in Networking?y
Are you considering a career in Graphic Designing?n
Are you considering a career in Information Security?n
Are you considering to study further?n

```

```

[33] swipl = Prolog()
     swipl.consult("/content/electiveAdvisory.pl")
     electives_suggested = list(swipl.query("generate_electives(Electives)"))
     for i in range(len(electives_suggested)):
         var = electives_suggested[i]['Electives'].decode('utf-8')
         output(var)

```

MobileComputing,EmbeddedSystems,Mobileandcellularnetworksecurity,GradAlgo

```

Enter branch: cse
Enter CGPA: 8
Do you have a strong grasp of mathematics and statistics?y
Do you like programming? y
Are you considering a career in ML?y
Are you considering a career in AI?y
Are you considering a career in Data Mining?y
Are you considering a career in Networking?n
Are you considering a career in Graphic Designing?n
Are you considering a career in Information Security?n
Are you considering to study further?n

```

```

[30] swipl = Prolog()
     swipl.consult("/content/electiveAdvisory.pl")
     electives_suggested = list(swipl.query("generate_electives(Electives)"))
     for i in range(len(electives_suggested)):
         var = electives_suggested[i]['Electives'].decode('utf-8')
         output(var)

```

AI,ML,DMG,SML,GradAlgo

We recommend you to explore more about your interests and come back again.