

## Python Code

```
from gensim.parsing.preprocessing import remove_stopwords
import nltk
nltk.download('punkt')
from nltk.tokenize import word_tokenize
from nltk.stem import PorterStemmer
#from pyswip import Prolog
import re
import string
string.punctuation
ps = PorterStemmer()
file = open('a5/facts.txt', 'w')

def preprocess(text):
    text = re.sub(re.compile('<.*?>'), '', text)
    text = re.sub(r'^https?:\/\/\.[^\r\n]*', '', text, flags=re.MULTILINE)
    text = text.lower()
    text = "".join([t for t in text if t not in string.punctuation])
    text = remove_stopwords(text)
    # text = word_tokenize(text)
    return word_tokenize(text)

def pf():
    print("Are the following python frameworks are familiar to you?\n")
    for x in ['numpy', 'pandas', 'scikit_learn', 'tensorflow', 'pytorch']:
        r = preprocess(input(f"{x}\n"))
        if 'yes' in r or 'yeah' in r or 'yup' in r:
            file.write(f'knows({x}).\n')

def knows(L):
    for x in L:
        r = preprocess(input(f"do you know {x}?\n"))
        if 'yes' in r or 'yeah' in r or 'yup' in r:
            file.write(f'knows({x}).\n')
        if x == 'python':
            pf()

def good_at(L):
    for x in L:
        r = preprocess(input(f"Are you good at {x}?\n"))
```

```

        if 'yes' in r or 'yeah' in r or 'yup' in r:
            file.write(f'good_at({x}).\n')
def interested(L):

    for x in L:
        r= preprocess(input(f"Are you interested in {x}? \n"))
        if 'yes' in r or 'yeah' in r or 'yup' in r:
            file.write(f'interested(\'{x}\').\n')

def aiml():
    knows(['python','prolog','machine_learning'])
    good_at(['statistics_and_probability','linear_algebra','logic'])
    interested(['Conversational AI','Computer Vision','Game Development'])

def de():
    knows(['Python','sql','hadoop','spark'])
    good_at(['statistics_and_probability','linear_algebra'])
    interested(['Big Data','Database Administration'])

def isec():
    knows(['C','cpp','java','unix'])
    good_at(['bash_scripting','number_theory','discrete_mathematics'])
    interested(['ethical hacking'])

def mc():
    knows(['Operating System','Computer Networks'])
    good_at(['Embedded Systems','Programming'])
    interested(['Internet of Things','Robotics'])

name = input("""

What is your name?:
""")
name = preprocess(''.join([i for i in name if not i.isdigit()]))
file.write('name({}).\n'.format(name[0]))

cgpa = input("""Is your CGPA more than 7.5?:
""")
cgpa = cgpa.lower()
cgpa = preprocess(cgpa)

```

```
for c in cgpa:
    if c=='yes' or c=='yeah' or c=='yup':
        file.write('cgpa (high).\n')
    else:
        file.write('cgpa (low).\n')

field = preprocess(input("""Which of these professions attract you most?
1. Machine Learning Engineer or AI Researcher
2. Data Engineer or Big Data expert
3. Cyber Security Expert
4. Iot Specialist or System Engineer
"""))

if "1" in field or "ai" in field or "ml" in field or "machine" in field or
"researcher" in field:
    aiml()
elif "data" in field or "de" in field or "big" in field:
    de()

elif "info" in field or "security" in field or "cyber" in field or "information" in
field:
    isec()
elif "iot" in field or "internet" in field or "system" in field:
    mc()
```

## Output:

```
[nltk_data] Downloading package punkt to /Users/ramyaneer/nltk_data...
[nltk_data] Package punkt is already up-to-date!
```

```
What is your name?:
Ramyaneer!!
Is your CGPA more than 7.5?:
no!
Which of these professions attract you most?
1. Machine Learning Engineer or AI Researcher
2. Data Engineer or Big Data expert
3. Cyber Security Expert
4. Iot Specialist or System Engineer
data engineering
do you know 'Python'?
no
do you know sql?
i dont know
do you know hadoop?
no
do you know spark?
naah
Are you good at statistics_and_probability?
nope
Are you good at linear_algebra?
nah
Are you interested in Big Data?
nop
Are you interested in Database Administration?
nope
(base) ramyaneer@Ramyanees-MacBook-Pro AI %
```

```
?- [ca].
true.
```

```
?- advise.
```

```
Hello ramyaneer!
```

```
Dear ramyaneer
Could not find a suitable elective for you
Pre-requisites of the electives are not found to be met
Please refer http://techtree.iiitd.edu.in/ to see the pre-requisite of the electives.
```

```
true.
```

```
?- █
```

```
What is your name?:
Ramyaneer Kashyap!
Is your CGPA more than 7.5?:
yes
Which of these professions attract you most?
1. Machine Learning Engineer or AI Researcher
2. Data Engineer or Big Data expert
3. Cyber Security Expert
4. Iot Specialist or System Engineer
machine learning
do you know python?
yes i do
Are the following python frameworks are familiar to you?

numpy
yes
pandas
yes
scikit_learn
yes
tensorflow
yes
pytorch
uh... not not good at it
do you know prolog?
yes i do
do you know machine_learning?
yeah!
Are you good at statistics_and_probability?
yup!
Are you good at linear_algebra?
yes definitely
Are you good at logic?
yes i think so
Are you interested in Conversational AI?
yes i love that!
Are you interested in Computer Vision?
no not much
Are you interested in Game Development?
a great deal, yeah!
(base) ramyaneer@Ramyanees-MacBook-Pro AI %
```

```
?- advise.
```

```
Hello ramyaneer!
```

```
Based on your fulfillment of prerequisites, interests, and skills,
Following electives are advisable for you
```

```
Advanced Machine Learning
Machine Learning
Statistical Machine Learning
Artificial Intelligence
Trustworthy AI Systems
Natural Language Processing
Speech Recognition and Understanding
Deep Learning
```

```
true █
```

```

What is your name?:
Ramyane!!12
Is your CGPA more than 7.5?:
yes, it is
Which of these professions attract you most?
1. Machine Learning Engineer or AI Researcher
2. Data Engineer or Big Data expert
3. Cyber Security Expert
4. Iot Specialist or System Engineer
i like data engineering
do you know 'Python'?
yes i do
do you know sql?
not good at it
do you know hadoop?
yes
do you know spark?
i don't think so, no
Are you good at statistics_and_probability?
yes, definitely
Are you good at linear_algebra?
yeah!
Are you interested in Big Data?
yup!!
Are you interested in Database Administration?
no not much
(base) ramyane@Ramyanees-MacBook-Pro AI % █

```

```
?- advise.
```

```
Hello ramyane!
```

```
Based on your fulfillment of prerequisites, interests, and skills,
Following electives are advisable for you
```

```
Machine Learning
Statistical Machine Learning
```

```
true █
```

```

PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE
(base) ramyane@Ramyanees-MacBook-Pro AI % /Users/ramyane/opt/anaconda3/bin/python /Users/ramyane/Down
loads/AI/a5/nlp.py
/Users/ramyane/opt/anaconda3/lib/python3.8/site-packages/gensim/similarities/__init__.py:15: UserWarnin
g: The gensim.similarities.levenshtein submodule is disabled, because the optional Levenshtein package <
https://pypi.org/project/python-Levenshtein/> is unavailable. Install Levenhstein (e.g. 'pip install pyt
hon-Levenshtein') to suppress this warning.
warnings.warn(msg)
[nltk_data] Downloading package punkt to /Users/ramyane/nltk_data...
[nltk_data] Package punkt is already up-to-date!

```

```

What is your name?:
Ramyane!
Is your CGPA more than 7.5?:
nah, it's not
Which of these professions attract you most?
1. Machine Learning Engineer or AI Researcher
2. Data Engineer or Big Data expert
3. Cyber Security Expert
4. Iot Specialist or System Engineer
ummm.... i think iot
do you know 'Operating System'?
no
do you know 'Computer Networks'?
yes i am good at it
Are you good at 'Embedded Systems'?
definitely, yeah!
Are you good at Programming'?
yes i can code well
Are you interested in Internet of Things?
yeah a lot actually!
Are you interested in Robotics?
no, not much.
(base) ramyane@Ramyanees-MacBook-Pro AI % █

```

```

(base) ramyane@Ramyanees-MacBook-Pro a5 % swipl
Welcome to SWI-Prolog (threaded, 64 bits, version 8.2.4)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

```

```

For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

```

```
?- [cal].
true.
```

```
?- advise.
```

```
Hello ramyane!
```

```
Based on your fulfillment of prerequisites, interests, and skills,
Following electives are advisable for you
```

```
Embedded Logic Design
```

```
true █
```